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The IEA-EEF European Congress of Epidemiology 2006 Epidemiology and Health Care Practice

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Introduction

The organisers of the European Congress of Epidemiology 2006, the board of The Netherlands Epidemiological Society, and the Board of the European Epidemiology Federation of the International Epidemiological Association (IEA-EEF) welcome you to Utrecht, The Netherlands, for this IEA-EEF Congress.

Epidemiology is a medical discipline that is focussed on principles and methods of research on causes, diagnosis and prognosis of disease, and establishing the benefits and risks of treatment and prevention. Epidemiological research has proven its importance by contributions to the understanding the origins and consequences of diseases, and has made major contributions to the management diseases and improvement of health in-patients and populations. This meeting provides a major opportunity to affirm the scientific and societal contributions of epidemiological research in health care practice, both in clinical medicine and in public health. During this meeting major current health care problems are addressed alongside methodological issues, and the opportunities and challenges in approaching them are explored. The exchange of ideas will foster existing co-operation and stimulate new collaborations across countries and cultures.

The goal of this meeting is to promote the highest scientific quality of the presentations and display advanced achievements in epidemiological research. Our aim is to offer a comprehensive and educational programme in the field of epidemiological research in health care and public health, and create room for discussions on contemporary methods and innovations from the perspective of policy makers, professionals and patients. Above all, we want to stimulate open interaction among the congress participants. Your presence in Utrecht is key to an outstanding scientific meeting.

The European Congress of Epidemiology

The European Congress of Epidemiology 2006 is organised by epidemiologists of Utrecht University,

under the auspices of the IEA-EEF, and in collaboration with The Netherlands Epidemiological Society. Utrecht University, founded in 1634, is the largest University in the Netherlands and harbours the largest academic teaching hospital in the Netherlands. The epidemiologists from Utrecht University work in the faculties of Medicine, Veterinary Medicine, Pharmacy and Biology.

The current meeting was announced through national societies, taking advantage of their newsletters and of the IEA-EEF Newsletter. In addition, avoiding the costs and disadvantages of the traditional journal advertisements and leaflets, information about the congress was disseminated via an internet mailing list of epidemiologists, which was compiled from, among other, the meeting in Porto in 2004, the European Young Epidemiologist network (<http://higiene.med.up.pt/eye/>) and several institutions and departments. Many of the procedures followed this year were based on or directly borrowed from the stimulating IEA-EEF Congress in Porto in 2004.

Publication in an international journal of large circulation of the congress programme and abstracts selected for oral and poster presentation, signifies the commitment of the organisers towards all colleagues that decided to present their original work at our meeting, and is intended to promote our discipline and to further stimulate the quality of the scientific work of European epidemiologists.

Keynote sessions

The congress will be opened in the afternoon of Wednesday June 28, 2006, in the medieval University Hall in the City Center of Utrecht. From June 29 to July 1, 2006, the congress will convene in the Auditorium Building designed by Rem Koolhaas of the Office of Metropolitan Architecture at the University Campus (De Uithof).

Each day the congress will start with a plenary keynote session. After the official congress opening Jerome P, Kassirer, former editor of The New England Journal of Medicine, will present his keynote

lecture Epidemiology, Epidemiologists and Financial Conflict of Interest, which is followed by considerations of invited discussants. Other keynote sessions are arranged from 9.00 to 10.30 in the morning on Thursday, Friday and Saturday. These keynote sessions, with each 2 speakers, are designed as pro-con debates, with sufficient time for the audience to join the discussion. They concern respectively Proteomics and Genomics in Epidemiological Research and Health Care Practice (keynote lectures by David F Ransohoff and Rudy GJ Westendorp); Infection diseases, beneficial or harmful for human health? (keynote lectures by Roy M Anderson and Erika von Mutius); Evidence Based Medicine in Epidemiological Research and Health Care Practice (keynote lectures by Paul Glasziou and Luc Bonneux).

Mini-symposia workshops and satellites

Building on the initiative of the Board of the IEA-EEF, the congress organisers encouraged epidemiologists to submit thematic congress sessions, thereby providing the possibility of discussing hot issues, sharing concerns, and influencing the research agenda. Four different groups proposed thematic sessions, notably on the EPIC cohort, on the SMART cohort, about exchanging data and tissue throughout Europe, and about reporting bias in observational epidemiological studies. These are programmed as mini-symposia.

The congress organisers arranged satellite symposia about Epidemiological Research within the 7th EU research framework and about Communicating research to the peers and to the public, as well as educational workshops on Bayesian statistics, and on handling missing data in epidemiological research.

Abstract submission and peer review evaluation

The call for abstracts for the European Congress of Epidemiology 2006 resulted in the submission of 642 abstracts. To facilitate programming of abstracts, authors were asked to select a topic and one to three keywords for their submitted abstract. Web based submission and evaluation of abstracts was managed by FBU, the Utrecht University congress office.

All submitted abstracts were peer reviewed by an international panel of epidemiologists that volunteered. A call for reviewer trios (one senior and two junior epidemiologists) was made via the IEA-EEF board members and members of the Scientific Programme Committee and the Local Organising Committee. Allocation of abstracts for peer review evaluation was based on self-reported expertise of the reviewers.

Abstracts were reviewed blind to the authors' names and affiliations, according to six criteria: abstract structure and quality of writing; clarity of the specification of the objectives; adequacy of design

and methods to the objectives and quality of its description; presentation of results; importance of the topic; and originality. A final rating was given on a 0-10 point scale. The two junior epidemiologists independently evaluated each abstract. Based on ratings of the juniors, the senior epidemiologist gave a final abstract rating. The senior reviewer decided when juniors disagreed, and harnessed against untoward extreme judgements of the juniors. Based on the judgement by the seniors abstracts with a final rating of 6 or higher were accepted for presentation.

Next, in order to shape the scientific programme according to scientific and professional topics and issues of interest for epidemiologists, members of the Scientific Programme Committee grouped the accepted abstracts in major thematic clusters. For these, topics, keywords and title words were used. Within each cluster, abstracts with a final rating of 8 or higher, as well as abstracts featuring innovative epidemiological approaches were prioritised to be programmed as an oral presentation.

The 642 submitted abstracts had an average final rating of 6 (sd = 1). In total 148 abstracts (23%) with a final rating of 5 or lower were rejected. Because of the thematic programming some abstracts with a final rating of 8 or higher will be presented as posters, while few with a final rating of 7 are programmed as oral presentation. There were 345 abstracts (54%) accepted and programmed for poster presentation; each poster will be displayed for a full day.

In total 149 abstracts (23%) are accepted for oral presentation. These are programmed in 29 parallel sessions. Based on the topics of their abstracts the oral sessions were arranged into 7 themes, notably Epidemiology of Diseases, Methods Clinical & Population Research, Burden of Disease, High Risk Populations, Growth and Development, Public Health Strategies, Translational Epidemiology. Sessions from one theme never are programmed parallel.

In table 1 we present the submitted and accepted abstracts (oral or poster) according to the distribution of country of origin. In table 2 submitted abstracts are displayed according to their topic, as classified by the authors using the topic long list of the submission form.

The Scientific Programme Committee convened in a telephone meeting by the end of the summer of 2005 and decided on the above programming process. The Scientific Programme Committee was informed on the result of the programming process by the end of April 2006.

Awards

Fifteen abstracts were submitted for the EYE session Work in Progress. Of these 3 abstracts were selected for oral presentation and thereby nominated for the EYE Award. In total, 10 abstracts were submitted in relation

Table 1. Abstracts submitted and accepted by country of origin

Country of origin	Submitted		Accepted		Accepted as	Accepted as
	N;	%	N;	% of submitted	Poster	Oral
	N = 642		N = 494		n = 345	n = 149
Australia	3	0,48%	3	100%	1	2
Bangladesh	1	0,16%	0	0%	0	0
Belgium	5	0,80%	3	60%	2	1
Brazil	42	6,73%	27	64%	24	3
Canada	2	0,32%	2	100%	1	1
Chile	4	0,64%	3	75%	2	1
China	4	0,64%	3	75%	2	1
Croatia	2	0,32%	1	50%	1	0
Denmark	10	1,60%	10	100%	6	4
Egypt	1	0,16%	0	0%	0	0
Finland	13	2,08%	13	100%	9	4
France	14	2,24%	10	71%	5	5
Germany	66	10,58%	55	83%	35	20
Hungary	2	0,32%	1	50%	1	0
India	1	0,16%	0	0%	0	0
Iran	16	2,56%	5	31%	3	2
Ireland	3	0,48%	2	67%	0	2
Israel	5	0,80%	5	100%	2	3
Italy	47	7,53%	35	74%	27	8
Japan	2	0,32%	2	100%	1	1
Lithuania	5	0,80%	5	100%	4	1
Macedonia	2	0,32%	0	0%	0	0
Mexico	3	0,48%	0	0%	0	0
Netherlands	231	37,02%	207	90%	140	67
Norway	2	0,32%	2	100%	1	1
Pakistan	2	0,32%	2	100%	1	1
Panama	1	0,16%	1	100%	0	1
Philippines	1	0,16%	1	100%	1	0
Poland	18	2,88%	13	72%	12	1
Portugal	24	3,85%	16	67%	14	2
Romania	6	0,96%	5	83%	5	0
Serbia and Montenegro	3	0,48%	1	33%	1	0
Slovenia	2	0,32%	1	50%	1	0
South Africa	3	0,48%	1	33%	0	1
Spain	49	7,85%	35	71%	23	12
Sri Lanka	1	0,16%	1	100%	0	1
Sweden	4	0,64%	3	75%	3	0
Switzerland	3	0,48%	2	67%	2	0
Tunisia	1	0,16%	1	100%	1	0
United Kingdom	15	2,40%	12	80%	9	3
United States of America	5	0,80%	5	100%	5	0

to the Student Award, of which 6 were programmed for oral presentation and thus nominated. During the congress authors of poster presentations may name themselves as candidate for the Poster Award. During the closing ceremony the winners of the Student Award 2006 and the Poster Award 2006 will be announced. These awards are an initiative of The Netherlands Epidemiological Society that will fund them in 2006.

Financial support

According to the IEA rules expenses of congress participation for applicants from low-income countries will be covered. The board of the IEA-EEF will

select a maximum of 10 candidates; their travel and registration expenses will be (partly) covered from the congress budget. In order to stimulate participation from as many as possible junior researchers and young epidemiologists the congress budget covers registration fee reduction for undergraduate (MSc) participants and EYE members. This also holds for the registration fee reduction of IEA-EEF members and NES members.

Past, present and future meetings

It is 11 years ago (1995) that the IEA regional European meeting was held in The Hague, The

Table 2. Abstracts submitted (n = 654) by topic

Topic	N;	%
Cardiovascular	71	14,4%
Oncology	56	11,3%
Infections (incl. HIV/AIDS)	49	9,9%
Other	45	9,1%
Methodology	44	8,9%
Life style and health promotion	34	6,9%
Occupational and environmental health	28	5,7%
Reproduction	20	4,0%
Disability and chronic diseases	16	3,2%
Health policy	15	3,0%
Mental health	15	3,0%
Asthma / allergic diseases	14	2,8%
EYE	14	2,8%
Paediatrics	14	2,8%
Obesity	12	2,4%
EBM & clinical guidelines	11	2,2%
Musculoskeletal disorders	11	2,2%
Decision making	8	1,6%
Genetics	7	1,4%
Biomarkers	5	1,0%
Veterinary	3	0,6%
Theory	2	0,4%

Netherlands. Many of you will keep good memories of this meeting. It is our pleasure to welcome you again in The Netherlands for the IEA-EEF European Congress of Epidemiology 2006 and we trust that you will join us in this stimulating congress and that you will enjoy your stay in Utrecht. Thereafter let us prepare for the IEA-EEF European Congress of Epidemiology 2007 in Cork, Ireland, organised by the Society of Social Medicine (United Kingdom). In 2007 the annual meeting of The Netherlands Epidemiological Society (WEON) will be held in Maastricht. In 2008 the IEA world congress will be held in Porto Alegre, Brazil and soon we will have to choose our venue for 2009.

The organisers of the European Congress of Epidemiology 2006 are committed to presenting an unforgettable meeting. We hope the congress will be a fruitful and pleasant occasion for Epidemiologists from different nationalities, and we look forward to welcome you at a stimulating and educational professional meeting devoted to epidemiological research, and a reunion of European epidemiologists and old friends.

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The Scientific Programme Committee wishes to thank all reviewers for their contribution and assistance in the evaluation process of the abstracts submitted to this meeting:

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Programme at a glance

Wednesday June 28 2006

- 12.00 Registration desk open at University Hall
 14.00 Official welcome and opening of Congress
Prof. D.E. Grobbee, Chair of Organising Committee
 14.30 **Keynote Lecture**
 Epidemiology, Epidemiologists, and Financial Conflict of Interest
Prof J.P. Kassirer
 16.00 Welcome reception

Thursday June 29 2006

- 08.00 Registration desk open at Auditorium
 09.00 **Keynote Lecture**
 Proteomics and Genomics in Epidemiology Research
Prof. D. Ransohoff & Prof. R. Westendorp
 10.30 Coffee Break
 11.30 **Workshop** **Satellite Symposium** **Poster session 1**
 Statistical Topics I **Epidemiology and the** **Parallel sessions**
 Missing Data **seventh EU research**
Prof. T. Stijnen **framework** **Epic Symposium**
 13.00 Lunch **Annual meeting of** **Chair: Prof. E. Riboli**
 Netherlands Epidemiology **Poster session 1**
 Society
 14.30 **Workshop** **Satellite Symposium** **Parallel sessions**
 Communication Research to the public **Exchanging date and**
H. van Maanen, Prof. D. Kromhout **tissue throughout**
 & *A. Aarts* Chair: *E. Riboli* **Europe**
 16.00 Break *Chair: Prof. J. Vandenbroucke*
 17.00 **EYE session** "Work in progress" **Posters session 1**
Chairs: Prof. G.A. Zielhuis & Prof. H. Barros **Parallel sessions**
 18.00 Tourist tours / Social programme EYE
 20.00 Reception hosted by the Major of Utrecht

Friday June 30 2006

- 08.00 Registration desk open at Auditorium
 08.00 Annual IEA-EEF member meeting
 09.00 **Keynote lecture**
 Infectious diseases: beneficial or Disaster for Man?
Prof. R. Anderson & Prof. E. von Mutius
 10.30 **Coffee Break** **Posters session 2**
 11.30 **Workshop** **Symposium Reporting** **Parallel sessions**
 Statistical Topics II **Bias**
 Bayesian Statistics *Chair: I.M. Wouters*
Prof. B. van Hout
 13.00 Lunch **Posters session 2**
 14.30 **Workshop** **SMART symposium** **Parallel sessions**
 Communicating research to the peers *Chair: Prof Y. van der Graaf*
Prof. A. Hofman, Prof. J.A. Knottnerus
 & *Prof. S. Ebrahim*
 16.00 Break **Posters session 2**
 17.00 **Parallel sessions**
 19.00 Conference Dinner in University Hall

Saturday July 1 2006

- 08.00 Registration desk open at Auditorium
 09.00 **Keynote lecture**
 Evidence Based Medicine in Health Care Practice and Epidemiological Research
Prof. P. Glasziou & Prof. L. Bonneux
 10.30 Coffee Break **Posters session 3**
 11.30 **Parallel sessions**
 13.00 **Closing ceremony**
 - Winners announced for NES Awards: Poster Award; Student Award; Publication Award
 14.00 Final remarks and Congress closing
Prof. D.E. Grobbee, Chair of Organising Committee
-

Scientific programme from Thursday, Friday and Saturday

Thursday June 29

TIME	Foyer	Room Theatron	Room Megaron	Room D	Room Red	Room White	Room Blue
08.00	Registration desk open						
09.00	Keynote Lecture Proteomics and Genomics in Epidemiology Research Prof. D. Foutschhoff Prof. R. Westendorp						
10.30	Break During the break poster presentations						
11.30	Epidemiology of Diseases	Methods Clinical & Population Research Session Modeling 100 - Estiquio 17 - Van der Zaag-Loonen 20 - Elias-Smale 191 - Stralen, van 215 - Sjang 507 - Greiser	Burden of Disease Session Pediatrics 217 - Di Lallo 113 - Peres 613 - De la Cruz 218 - Di Lallo	Symposium Epidemiology and the seventh EU research framework K. McCarthy S. de Wit-Chardonens F. Deeghe B. Brunstreef	Workshop Statistical topics I Missing Data Prof. T. Sijnen	646 - EPIC Symposium Chair: Prof. E. Riboli	
13.00	Lunch						
14.30	Epidemiology of Diseases	High Risk Populations Session SES & Migrants 8 - Movahedi 179 - Stirbu 285 - Borgaerts 309 - Marise Bare 316 - Cardous-Ubbink 388 - Kuijsten	Growth and Development Session Birthweight 69 - Weyereman 145 - Vrijkotte 450 - Goedhart 597 - Mortensen	Annual meeting of Netherlands Epidemiology Society (VvE) Public Health Strategies	Workshop Communicating Research to the Public H. van Maanen Prof. D. Kromhout A. Aarts Chair: Prof. E. Riboli	647 - Symposium Exchanging Data and Tissue throughout Europe E.B. van Veen, J.W. Coubergh * Storm * Flanu * Denis * Buttarelli	
16.00	Break During the break poster presentations						
17.00	Epidemiology of Diseases	High Risk Populations Session Cardiovascular Risk Factors 60 - Lajous 228 - Keinan-Boker 267 - Fournier 269 - Bruin, de	Burden of Disease Session Trends & Impact 75 - David 118 - Cheng 435 - Verschuuren 471 - Kabir	Public Health Strategies Session Vaccination	Methods Clinical & Population Research Session Miscellaneous methods 120 - Donate-Lopez 247 - Briet 406 - Tromp 419 - Farchi	EYE session Work in Progress Chair: Prof. G.A. Zielhuis & Prof. H. Barros	
18.00	Touristic tours / Social programme EYE						
20.00	Reception hosted by the Major of Utrecht						

Friday June 30		Room Megaron	Room B	Room Red	Room White	Room Blue
TIME	Foyer Room Theatron	Room Megaron	Room B	Room Red	Room White	Room Blue
08:30	Registration desk open	Annual member meeting IEA-EEF				
09:00	Keynote Lecture Infection diseases: Beneficial or Disaster for man? Prof. R. Anderson Prof. E. von Mulius					
10:30	Break During the break poster presentations					
11:30		High Risk Populations	Burden of Disease	Translational Epidemiology	Workshop Statistical Topics II: Bayesian Statistics Prof. B. van Hout	645 - Symposium Reporting bias Failure to publish study results in epidemiological studies J.M. Wouters * Anderson * von Elm * Knottnerus
		Session Diabetes 32 - Gards, van de 164 - Müller 327 - Bruggen, van 339 - Dehghan 594 - Moebus	Session Smoking 49 - Rozi 121 - Polanska 229 - Pomp 286 - Schaap 177 - Bammann 315 - Loebbroks 636 - Heidrich	Session Genetic & Genomic Epidemiology 111 - Watro 144 - Lakeman 177 - Bammann 599 - Gluxens		
13:00	Lunch					
14:30	Epidemiology of Diseases	High Risk Populations	Growth and Development	Public Health Strategies	Workshop Communicating Research to the Peers Y. van der Graaf * Dijk * Algra * Grobbee * Bots * Bax * Mall and more	644 - Smart Symposium Y. van der Graaf * Dijk * Algra * Grobbee * Bots * Bax * Mall and more
	Session Tuberculosis 162 - Vree 200 - Khosravi Boroujeni 226 - Bausano 240 - Rius Gilbert	Session Metabolic Syndrome 18 - Seabra 136 - Valkengoed, van 290 - Gast 346 - Wagemakers 564 - Garmedia 585 - Neuhauser	Session Children's Health 70 - Weyemmann 88 - Brenner 89 - Seppanen 195 - Bottenweck 390 - Boon, Den 449 - Zuidgeest 511 - Berg, van der	Session Screening 1 88 - Brenner 89 - Seppanen 195 - Bottenweck 227 - Keinan-Boker 334 - Peters 340 - Sarkeale		
16:00	Break During the break poster presentations					
17:00	Epidemiology of Diseases	Methods Clinical & Population Research	Growth and Development	Public Health Strategies	Translational Epidemiology	Session Veterinary Medicine Mathematical modeling of infectious diseases 649 - Klinkenberg 650 - Boven van 651 - Trapman 652 - Broek, van den 183 - Gorissen
	Session Tropical Diseases 155 - Bayard 192 - Teixeira 274 - Oesterholt	Session Prediction 167 - Lie 298 - Janssen 402 - Comas 429 - Gomez de la Camara	Session Reproduction 9 - Famiiau-Hansen 535 - Calderon-Margalit 567 - Nybo Andersen 581 - Fonseca Cardoso	Session Screening 2 99 - Kotaminti Alonien 224 - Broeders 381 - Ronco 447 - Irsel, van	Session Molecular Epidemiology 37 - Schaap 98 - Cuiet 417 - Perez-Gomez 473 - Vloque	
19:00	Conference dinner in University Hall					

Saturday July 1							
TIME	Foyer	Room Theatron	Room Megaron	Room A	Room Red	Room White	Room Blue
08.30		Registration desk open					
09.00		Keynote Lecture Evidence Based Medicine in Health Care Practice and Epidemiological Research Prof. P. Glasziou Prof. L. Bonneux					
10.30	Break	During the break, poster presentations					
11.30		Methods Clinical & Population Research Session Meta-analysis 52 - Koopman 137 - Flores Mateo 184 - Flovers 256 - West 496 - Bax 530 - Klug	High Risk Populations 83 - Arndt 422 - Roskam 548 - Pikhart 550 - Dekkers 569 - Mutsaers, de 590 - Vioque	Burden of Disease Session Effects & Costs 237 - Jacobs - van der Biuggen 461 - Heymans 470 - Kabir 579 - Ferrando 222 - Noordzij	Translational Epidemiology Session Pharmaco-epidemiology 110 - Otten 133 - Schelleman 220 - Grigoryan 257 - Kropp 445 - Smeets 640 - Verloop	Epidemiology of Diseases Session Respiratory 56 - Suarfhana 235 - Bochmann 272 - Maule 371 - Zock	
13.00		Closing ceremony					
14.00		End					

Posters session 1: Thursday June 29, 2006**Posters ordered by abstract number**

16	Freitas	331	Zafarmand
23	Franko	337	Marcon
25	Völzke	348	Wei
50	McBride	352	Leray
54	Toll	353	Gehring
55	Van Diemen	354	Leray
61	Pekmezovic	356	Spallek
63	Ohlsson	362	Greving
64	Ohlsson	367	Laan
67	Orts	372	Brussee
68	Weyermann	379	Brussee
73	Ellert	383	May-de Groot
78	Van Baar	385	Hoefman
84	Rebolj	386	Goettsch
91	Peres	387	Szurkowska
92	Peres	389	Roebbers
93	Antunes	397	De Groot
114	Peres	401	Bozkurt
115	Peres	403	Milder
130	Bardehle	407	Hoffmeister
132	Twardella	409	Hoffmeister
142	Ghannem	416	García-Mendizábal
151	Orts	423	Cesaroni
156	Knol	437	Hoefman
160	Penders	442	Van Gils
163	Périssé	443	Carrasco
170	Renzi	451	Aizpuru
176	Krajewski-Siuda	455	Rückerl
189	Kiemeney	459	Rutten
190	Kiemeney	466	Saugo
204	Thijs	478	Nieto
207	Odink	480	Schreijer
223	Noordzij	491	Azevedo
231	Di Napoli	498	Molenaar
232	Bezemer	501	Van Dijk
233	De Jong	502	Van Dijk
251	Gielkens-Sijstermans	505	Di Ciommo
254	West	506	Moebus
260	Grau	510	Greiser
261	Rosano	512	Schumann
264	Kluytmans	522	Schellevis
273	Grau	523	Azevedo
275	Costa	524	Azevedo
279	Kopec	526	Van den Belt-Dusebout
280	Roest	549	Véras
282	Dauphinot	556	Sihvonen
283	Wijga	570	Lopes
288	De Marco	601	Keil
289	Lope	605	Sucupira
297	Hoekstra	611	Drachler
299	Krumkamp	614	Goldbohm
300	Martínez Sánchez	619	Pina
301	Bont	624	Jacobs
306	Ni	626	Van der Linden
321	Verschuren	627	Kik
323	Palmieri	637	Heidrich

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19	De Vries	307	De Kraker
21	Uotinen	313	Bogers
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26	Gimeno	325	Behrens
28	Houben	329	Borders
29	De Vries	332	Melis
30	De Vries	347	Pac
31	Ten Berg	364	Muller
34	Diaconu	365	Van den Hooven
36	Diaconu	369	Van der Sande
46	Streppel	373	Van den Berg
47	Belo	395	Novoa
48	Sauvaget	410	Van den Boogaard
51	Koopman	411	Vannoord
71	Kilsztajn	412	Koedijk
76	Pembrey	414	Kuczerowska
81	Schmidt	420	Giorgi Rossi
85	Kretzschmar	432	VanNoord
102	Scholtens	433	Baussano
109	Defraye	434	Agabiti
116	Medronho	457	Bierma-Zeinstra
117	Eljedi	460	Van Wier
124	Van de Garde	464	Faustini
127	Mello	465	Jarrin
128	Hosper	477	Juhl
129	Feleus	484	MIGUEL
134	Bayingana	485	Maira
135	De Wit	497	Lindert
139	Stolk	508	Van den Berg
169	Teixeira	509	Mierzejewska
171	Teixeira	520	Fonseca Cardoso
175	Verhoef	525	Martens
180	Capon	536	Cotton
185	De Boer	539	Corte
186	Lazarevska	542	Ursoniu
198	Terschüren	544	Vernic
201	Khosravi Boroujeni	545	Boer
202	Molag	563	Ruskamp
208	Mikolajczyk	568	Szurkowska
209	Luijsterburg	572	Bijkerk
216	Stolk	574	Fonseca Cardoso
219	Mirabelli	576	Mazur
236	Barreto	595	Ahrens
242	Curzio	598	Dijkstra
262	Pereira	600	Ajdacic-Gross
268	Van Gageldonk-Lafeber	603	Ajdacic-Gross
284	Van Nispen	604	Lucas
287	Roobol	607	Santos
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295	Rava	639	Tobi
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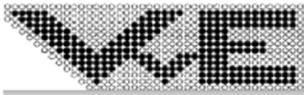
12	Shahzad	363	Kadam
13	Mahouri	375	Monninkhof
39	Weck	376	Lilla
40	Andrade	380	Slottje
45	Rod Nielsen	382	Kulmala
59	Siesling	391	Artama
65	Vonk	400	Berraondo
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107	Grijbovski	448	Barone
122	Polanska	456	Weihkopf
123	Quak	467	Santibañez
125	Jansen	468	Marino
146	Paulik	472	Porta
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157	Siesling	494	Müller-Nordhorn
158	Lu	499	Abelha
159	Viragh	503	Veldhuijzen
165	De Bock	517	Ravelli
174	Stirbu	518	Roeleveld
181	Castronuovo	521	Farchi
193	Visser	527	Azizi
203	Rohrmann	528	Silva
213	Stang	533	Osoba
221	Luostarinen	538	Nakhai Pour
230	Peretz	554	Garmendia
234	Sun	561	Garmendia
244	Kaatsch	562	Rahelic
248	Mäki	571	Juszko-Piekut
252	Grazuleviciene	573	Koelewijn
270	Suarthana	575	Koelewijn
271	Suarthana	578	Freitas
277	Thelen	580	Zagozdzon
291	Voskuil	582	Herdeiro
292	Bastiaannet	586	Freitas
293	Strumylaite	588	Freitas
308	Morales-Suárez-Varela	596	Freitas
312	Cardous-Ubbink	609	Santos
314	Schmidt	612	Lynch
317	Keil	615	Peleteiro
318	Vrieling	622	Carter
328	Maleki	628	Farchi
330	Hoffmann	629	Louwman
341	Sarkeala	630	Devillé
342	Galas	641	Cuttini
355	Van Duijnhoven	642	Bianchi
357	De Vogel		

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Keynote Lectures

Epidemiology, Epidemiologists, and Financial Conflict of Interest

J.P. Kassirer

Independent science is increasingly exposed to tough questions related to conflict of interest (COI) fuelled by a myriad of unwanted personal, institutional or financial ties between the research community, sponsors and the audience of the scientific results. For epidemiologists, managing COI is a struggle of daily life as there always stakeholders involved (e.g. sponsors, study subjects, users of the study outcomes) with possibly different and incompatible interests. COI may encourage bias in research and may breed distrust in society regarding science as an independent source of evidence. In this keynote session Dr Jerome P. Kassirer, former Editor-in-Chief of New England Journal of Medicine for more than 8 years, distinguished professor at Tufts University School of Medicine and author of the best-seller book 'On the Take', coined as an brilliant diagnosis of an epidemic of greed in biomedical research, will offer an unsettling look at how financial interests may compromise, and even corrupt, epidemiological research. Dr Kassirer will share with us his thought provoking analyses of the checks and balances of financial enticements in epidemiological research. You can't miss this event!

Proteomics and Genomics and Epidemiological Research

D. Ransohoff & R. Westendorp

Proteomics and genomics are supposed to be related to epidemiology and clinical medicine, among other because of the putative diagnostic usefulness of proteomics and genomics tests. Hence, clinical and sometimes even public health applications are promised by basic sciences. It is debated whether such promises and subsequent expectation are fulfilled. What are at meaningful and consequential examples of current findings in proteomics, genomics and similar approaches in biomedical research? Are they different from the "classic" tools and frameworks of clinical epidemiology?

In the context of proteomics and genomics, etiologic studies, primary prevention, epidemiological surveillance and public health are concerned with the influence of environmental exposures on gene expression and on the accumulation of genetic alterations. Proponents and advocates of proteomics and genomics have suggested that their products can yield clinically useful findings, e.g., for early diagnosis, for prognosis, for therapeutic monitoring, without always needing to identify the proteins, peptides or other 'biomarkers' at stake. Do we feel comfortable with this "black-box" reasoning, i.e. do we question

the role of pathophysiological and mechanistic reasoning in clinical medicine?

How much sense does it make for epidemiology to play with and scrutinize proteomics and genomics approaches in epidemiology and clinical medicine? What are at present (and in the near future) the main biological, clinical and public health implications of current findings in these research fields?

In this plenary session these and other questions regarding the place and role of proteomics and genomics in clinical epidemiological research are discussed from different perspectives.

Infection diseases: Beneficial or Disaster for man?

R. Anderson & E. von Mutius

Infectious diseases pose an increasing risk to human and animal health. They lead to increasing mortality, in contrast to the situation fifty years ago when new control measures still provided hope of overcoming many problems in the future. Improved hygiene, better socio-economic circumstances, vaccination and use of antibiotics has led to a gradual decline of tuberculosis, rheumatic fever, measles and mumps in Western societies over the last five decades. Paradoxically, absence of exposure to infectious agents has a major impact as well. The decline in infectious disease risk is accompanied by a gradual increase of allergic and autoimmune diseases and this association is believed to be causal. Exposure to infectious agents from early on in life can markedly boost an individual's natural resistance and hence influence the individual's reaction to future exposure to both biological and non-biological antigens. In this plenary session we want to emphasise both aspects of the effect of infectious agents on human and animal health.

Evidence Based Medicine in Health Care Practice and Epidemiological Research

P. Glasziou & L. Bonneux

Evidence-based medicine is defined as the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. Proponents of evidence-based medicine maintain that coming from a tradition of pathophysiological rationale and rather unsystematic clinical experience, clinical disciplines should summarize and use evidence concerning their practices, by using principles of critical appraisal and quantitative clinical reasoning. For this they should convert clinical information needs into answerable questions, locate the available evidence, critically appraise that evidence for its validity and usefulness, and apply the results of the best available evidence in practice. Applying the principles of evidence-based medicine implies improvement of the effectiveness and efficiency of health care. Therefore, evidence-based

medicine has commonalities with clinical medical and epidemiological research.

For integration of evidence-based medicine into health care practice the challenge is to translate knowledge from clinical medical and epidemiological research, for example in up to date practice guidelines. The limitations of using evidence alone to make decisions are evident. The importance of the values and preference judgments that are implicit in every clinical management decision are also evident. Critics of evidence based medicine argue that applying best available research evidence in practice in order to improve the effectiveness and efficiency of health care contradicts with the importance of the values and preference judgments in clinical management decisions. In this plenary session we want to contrast these and other viewpoints on evidence based medicine in health care practice.

Workshop

Statistical topics I: Missing data

Prof. dr. T. Stijnen

This workshop will be an educational lecture on missing data by professor Stijnen from the Department of Epidemiology and Biostatistics of the Erasmus MC Rotterdam, The Netherlands.

Every clinical or epidemiological study suffers from the problem of missing data. In practice mostly simple solutions are chosen, such as restricting the analysis to individuals without missing data or imputing missing values by the mean value of the individuals with observed data. It is not always realised that these simple approaches can lead to considerable bias in the estimates and standard errors of the parameters of interest. In the last 10 to 15 years much research has been done to better methods for dealing with missing values. In this workshop first an overview will be given of the methods that are available and their advantages and disadvantages will be discussed. Most attention will be given to multiple imputation, to date generally considered as the best method for dealing with missing values. Also the available software in important statistical packages such as SPSS and SAS will be shortly discussed.

Statistical topics II: Bayesian statistics

Prof. dr. B. van Hout

Suppose that one wants to know how often individuals have a certain characteristic, and suppose that one doesn't have any knowledge – any knowledge at all – how often this is the case. Now, suppose that one starts by checking 10 individuals and only finds 1 individual with this characteristic. Then the probability that the 11th individual has the characteristic is $1/6$. The fact that this is not $1/10$ (although it will be

close to that if the numbers of observations increase) may be counter-intuitive. It will become less so, when realising how it is obtained from the formal integration of the new information with the complete uncertainty beforehand. This formal integration, with a prior indicating that it is as likely to be $1/100$ as it is to be $50/100$ as it is $99/100$, and with 9 negative and 1 positive observation - is by way of Bayes rule.

The Italian mathematician, actuary, and Bayesian, Bruno de Finetti (1906–1985), estimated that it would take until the year 2020 for the Bayesian view of statistics to completely prevail. The purpose of this workshop is to not only convince the attendants that this is appealing outlook but also to aid the workshop participants in realising this prediction.

After a first introduction of the work of reverend Bayes, a number of practical examples are presented and the attendant is introduced in the use of WinBugs.

A first example – introducing the notion of non-informative priors – concerns a random effects logistic regression analysis.

Second, the use of informative priors, is illustrated (in contrast with non-informative priors) using an analysis of differences in quality of life as observed in a randomised clinical trial. It will be shown how taking account of such prior information changes the results as well as showing how such information may increase the power of the study.

In a third example, it will be shown how WinBugs offers a powerful and flexible tool to estimate rather complex multi-level models in a relatively easy way and how to discriminate between various models. Within this presentation some survival techniques (or stress control techniques) will be presented for when WinBugs starts to spit out obscure error-codes without giving the researcher any clue where to search for the reason behind these errors.

Communicating research to the public

H. van Maanen, Prof. dr. ir. D. Kromhout, A. Aarts

Most researchers will at some point in their career face difficulties in communicating research results to the public. Whereas most scientific publications will pass by the larger public in silence, now and then a publication provokes profound interest of popular press. Interest from the general public should be regarded as positive. After all, public money is put into research and a researcher has a societal responsibility of spreading new knowledge. However, often, general press interest is regarded upon as negative by the researcher. The messages get shortened, distorted or ridiculed.

Whose responsibility is this misunderstanding between press and researchers? Should a researcher foresee press reaction and what can be done to prevent negative consequences? Is the press responsible

for accurate translation of research results and for prevention of negative societal reactions?

Speakers from both the scientific community and the press will shortly elucidate their experiences and point of view. Hans van Maanen is a scientific journalist who writes about research in a Dutch newspaper, the Volkskrant. Professor Kromhout works at the Division of Human Nutrition at the Wageningen University and is vice-president of the Netherlands Health Council for the areas Nutrition, Environment and Public Health.

After a short introduction of the panel members, a debate will be started with the audience.

Communicating research to the peers

Prof. dr. A. Hofman, Prof. dr. J.A. Knottnerus, Prof. dr. S. Ebrahim

The ultimate goal of research is successful publishing of the results, preferably in a high impact journal.

Primary focus of the researcher is on quality of the study. However, the editor of a journal makes the decision of publication.

What happens with your article after you have submitted it? Is quality of the research all that counts? Which items are important and lie within the researchers influence.

Speakers with experience both from research and editorship will elucidate what is important during the review and selection process. All speakers are (co)editors of peer-reviewed journals in the field of epidemiology: professor Hofman (European Journal of Epidemiology), professor Knottnerus (Journal of Clinical Epidemiology), and professor Ebrahim (International Journal of Epidemiology).

After a short introduction of the panel members, a debate will be started with the audience.

SYMPOSIA

644 SMART SYMPOSIUM

Y. Van der Graaf

University Medical Center Utrecht, UTRECHT, The Netherlands

Session: Smart Symposium

Presentation: Symposium.

ABSTRACTS ORAL PRESENTATIONS

ABSTRACT 1

CAROTID STIFFNESS AND THE RISK OF NEW VASCULAR EVENTS IN PATIENTS WITH MANIFEST CARDIOVASCULAR DISEASE. THE SMART STUDY

J.M. Dijk, A. Algra, Y. van der Graaf, D.E. Grobbee, M.L. Bots SMART study group.

Background and relevance: Patients with a carotid artery stenosis, including those with an asymptomatic or moderate stenosis, have a considerable risk of ischemic stroke. Identification of risk factors for cerebrovascular disease in these patients may improve risk profiling and guide new treatment strategies. *Objectives and question:* We cross-sectionally investigated whether carotid stiffness is associated with previous ischemic stroke or TIA in patients with a carotid artery stenosis of at least 50%. *Design and Methods:* Patients were selected from the Second Manifestations of ARterial disease (SMART) study, a cohort study among patients with manifest vascular disease or vascular risk factors. Arterial stiffness, measured as change in lumen diameter of the common carotid arteries during the cardiac cycle, forms part of the vascular screening performed at baseline. The first 420 participants with a stenosis of minimally 50% in at least one of the internal carotid arteries measured by duplex scanning were included in this study. Logistic regression analysis was used to determine the relation between arterial stiffness and previous ischemic stroke or TIA. *Results:* The risk of ischemic stroke or TIA in the highest quartile (stiffest arteries) relative to the lowest quartile was 2.1 (95% CI 1.1–4.1). These findings were adjusted for age, sex, systolic blood pressure, minimal diameter of the carotid artery and degree of carotid artery stenosis. *Conclusion and discussion:* In-patients with a $\geq 50\%$ carotid artery stenosis, increased common carotid stiffness is associated with previous ischemic stroke and TIA. Measurement of carotid stiffness may improve selection of high-risk patients eligible for carotid endarterectomy and may guide new treatment strategies.

ABSTRACT 2

RENAL FUNCTION AS A RISK INDICATOR FOR CARDIOVASCULAR EVENTS

L. Bax, A. Algra, W.P.Th.M. Mali, J.J. Beutler, Y. van der Graaf

Background (and relevance): Patients with advanced renal insufficiency are at increased risk for adverse cardiovascular disease (CVD) outcomes. *Objectives and question:* The aim was to establish whether impaired renal function is an independent predictor of CVD and death in an unselected high-risk population with CVD. *Design and Methods:* The study was performed in 2784 patients with CVD. Primary outcomes were all vascular events and all cause death. During a median follow-up of 39 months, 291 patients had a vascular event (10%) and 266 patients died (9.5%). *Results:* The adjusted Hazard Ratio (HR) of an estimated glomerular filtration rate < 60 vs > 90 ml/min per 1.73 m² was 1.8 (95% CI 1.2–2.7) for vascular events and 1.4 (95% CI 0.9–2.2) for all cause death. For stroke as a separate outcome it was 2.7 (95% CI 1.2–5.8). Subgroup analysis according to vascular disease at presentation or the risk factors hypertension, diabetes and albuminuria had no influence on the HR's. *Conclusion and discussion:* Renal insufficiency is an independent risk factor for adverse CVD events in patients with a history of vascular disease. Renal function was a

particularly important factor in predicting stroke. The presence of other risk factors hypertension, diabetes or albuminuria had no influence on the impact of renal function alone.

ABSTRACT 3

HIGH BLOOD PRESSURE IS INVERSELY RELATED WITH PRESENCE AND EXTENT OF CORONARY COLLATERALS

J. Koerselman¹, P.P.T.h de Jaegere^{2,3}, M.C Verhaar⁴, Y. van der Graaf¹, D.E. Grobbee¹ ¹Julius Center for Health Sciences and Primary Care, Utrecht, The Netherlands ²Department of Cardiology, Heart Lung Center Utrecht, The Netherlands ³Department of Cardiology, Erasmus Medical Center, Rotterdam, The Netherlands. ⁴University Medical Center Utrecht, The Netherlands

Background and relevance: Patients with hypertension have an increased case-fatality during acute MI. Coronary collateral (CC) circulation has been proposed to reduce the risk of death during acute ischemia. *Objectives and question:* We determined whether and to which degree high blood pressure (BP) affects the presence and extent of CC-circulation. *Design and Methods:* Cross-sectional study in 237 patients (84% males), admitted for elective coronary angioplasty between January 1998 and July 2002. Collaterals were graded with Rentrop's classification (grade 0 - 3). CC-presence was defined as Rentrop-grade ≥ 1 . BP was measured twice with an inflatable cuff-manometer in seated position. Pulse pressure was calculated by systolic blood pressure (SBP) – diastolic blood pressure (DBP). Mean arterial pressure was calculated by $DBP + 1/3*(SBP-DBP)$. Systolic hypertension was defined by a reading ≥ 140 mmHg. We used logistic regression with adjustment for putative confounders. *Results:* SBP (odds ratio (OR) 0.86 per 10 mmHg; 95% confidence-interval (CI) 0.73–1.00), DBP (OR 0.67 per 10 mmHg; 95% CI 0.49–0.93), mean arterial pressure (OR 0.73 per 10 mmHg; 95% CI 0.56–0.94), systolic hypertension (OR 0.49; 95% CI 0.26–0.94), and antihypertensive treatment (OR 0.53; 95% CI 0.27–1.02), each were inversely associated with the presence of CC's. Also, among patients with CC's, there was a graded, significant inverse relation between levels of SBP, levels of pulse pressure, and collateral extent. *Conclusion and discussion:* There is an inverse relationship between BP and the presence and extent of CC-circulation in patients with ischemic heart disease.

ABSTRACT 4

THE SILENCE OF A BRAIN INFARCT, DOES IT MATTER FOR COGNITIVE FUNCTION? THE SMART STUDY

A.F. van Raamt, W. Mali, S. Kalmijn, J.L.P. Giele, T.D. Witkamp, Y. van der Graaf

Background and relevance: Silent brain infarcts are associated with decreased cognitive function in the general population. *Objectives and question:* We examined whether this relation also exists in patients with symptomatic arterial disease. Furthermore, we compared cognitive function of patients with stroke or TIA, with cognitive function of patients with symptomatic arterial disease at other sites in the arterial tree. *Design and Methods:* An extensive screening was done in 336 consecutive patients participating in the Second Manifestations of ARterial disease (SMART) study, including a neuropsychological test. Inclusion diagnoses were cerebrovascular disease, symptomatic coronary artery disease, peripheral arterial disease, or abdominal aortic aneurysm. MRI examination was performed to assess the presence of silent infarcts in patients without symptomatic cerebrovascular disease. The patients were assigned to one of three categories according to their patient history and inclusion diagnosis: no stroke or TIA, no silent infarcts (n = 220; mean age 57 years); no stroke or TIA, but silent infarcts present (n = 33; mean age 65 years); stroke or TIA at

inclusion (n = 83; mean age 60 years). Cognitive test scores were transformed in standardized z-scores. *Results:* After adjustment for age, sex, educational level and intelligence, patients with silent infarcts appeared to have slightly higher cognitive scores than patients without silent infarcts (difference in global cognitive function (95% CI): 0.11 (-0.08; 0.31)), while patients with stroke or TIA had lower scores on all cognitive domains except memory (difference in global cognitive function (95% CI): -0.23 (-0.35; -0.10)). *Conclusion and discussion:* Silent infarcts do not influence cognitive function in patients with symptomatic coronary or peripheral artery disease, or abdominal aortic aneurysm. Patients with stroke or TIA, however, had lower scores on most tests than patients with symptoms elsewhere in the arterial tree.

ABSTRACT 5

A RANDOMISED CONTROLLED TRIAL FOR RISK FACTOR REDUCTION IN PATIENTS WITH SYMPTOMATIC VASCULAR DISEASE: THE MULTIDISCIPLINARY VASCULAR PREVENTION BY NURSES STUDY

B.M.B. Goessens¹, F.L.J. Visseren², B.G.M. Sol², J.M. de Man - van Ginkel², Y. van der Graaf¹ ¹ Julius Center for Health Sciences and Primary Care, UMC Utrecht, the Netherlands ² Internal Medicine, Section of Vascular Medicine, UMC Utrecht, the Netherlands

Background and relevance: Patients with manifest vascular disease are at high risk of a new vascular event or death. Modification of classical risk factors is often not successful. *Objectives and question:* We determined whether the extra care of a nurse practitioner (NP) could be beneficial to the cardiovascular risk profile of high-risk patients. *Design and Methods:* Randomised controlled trial based on the Zelen design. 236 patients with manifestations of a vascular disease and who had ≥ 2 modifiable vascular risk factors were pre-randomised to receive treatment by a NP plus usual care or usual care alone. After 1 year, risk factors were re-measured. Primary endpoint was achievement of treatment goals for risk factors. *Results:* Of the pre-randomised patients, 95 of 119 (80%) in the intervention group and 80 of 117 (68%) in the control group participated in the study. After a mean follow-up of 14 months, the patients in the intervention group achieved significantly more treatment goals than did the patients in the control group (systolic blood pressure 63% versus 37%, total cholesterol 79% vs 61%, LDL-cholesterol 88% vs 67%, and BMI 38% vs 24%). Medication use was increased in both groups and no differences were found in patients' quality of life (SF-36) at follow-up. *Conclusion and discussion:* Treatment delivered by NPs, in addition to a vascular risk factor screening and prevention program, resulted in a better management of vascular risk factors compared to usual care alone in vascular patients after 1 year follow-up.

ABSTRACT 6

THE METABOLIC SYNDROME IS ASSOCIATED WITH ADVANCED VASCULAR DAMAGE IN PATIENTS WITH CORONARY HEART DISEASE, STROKE, PERIPHERAL ARTERIAL DISEASE OR ABDOMINAL AORTIC ANEURYSM

J.K. Olijhoek, Y. van der Graaf, J.D. Banga, A. Algra, T.J. Rabelink, F.L. Visseren

Background and relevance: The metabolic syndrome is associated with an increased risk of cardiovascular disease in patients without a cardiovascular history. *Objectives and question:* We investigated whether the metabolic syndrome is related to the extent of vascular damage in patients with various manifestations of vascular disease. *Design and Methods:* The study population of this cross-sectional survey consisted of 502 patients recently diagnosed with coronary heart disease (CHD), 236 with stroke, 218 with peripheral arterial disease (PAD) and 89 with abdominal aortic aneurysm (AAA). Metabolic syndrome was diagnosed according to Adult Treatment Panel III criteria. Carotid Intima Media Thickness (IMT), Ankle Brachial Pressure Index (ABPI) and albuminuria

were used as non-invasive markers of vascular damage and adjusted for age and sex if appropriate. *Results:* The prevalence of the metabolic syndrome in the study population was 45%. In PAD patients this was 57%; in CHD patients 40%, in stroke patients 43% and in AAA patients 45%. Patients with the metabolic syndrome had an increased mean IMT (0.98 vs. 0.92 mm, p-value < 0.01), more often a decreased ABPI (14% vs. 10%, p-value 0.06) and increased prevalence of albuminuria (20% vs. 15%, p-value 0.03) compared to patients without this syndrome. An increase in the number of components of the metabolic syndrome was associated with an increase in mean IMT (p-value for trend < 0.001), lower ABPI (p-value for trend < 0.01) and higher prevalence albuminuria (p-value for trend < 0.01). *Conclusion and discussion:* In patients with manifest vascular disease the presence of the metabolic syndrome is associated with advanced vascular damage.

ABSTRACT 7

INFLUENCE OF THE LOCATION AND THE EXTENT OF VASCULAR DISEASE ON NEW CARDIOVASCULAR EVENTS IN PATIENTS WITH TYPE 2 DIABETES

P.M. Gorter, F.L.J. Visseren, A. Algra, Y. van der Graaf

Background (and relevance): In patients with type 2 diabetes the progression of atherosclerosis is accelerated, as observed by the high incidence of cardiovascular events. *Objectives (and question):* To estimate the influence of location and extent of vascular disease on new cardiovascular events in type 2 diabetes patients. *Design and Methods:* Diabetes patients (n = 669), mean age 59 years, with and without prior vascular disease were followed through 1996–2004 (mean follow-up 3 years). Patients with vascular disease (n = 399) were classified according to symptomatic vascular location, and number (extent) of locations. We analyzed occurrence of new (non)-fatal cardiovascular events using Cox proportional hazards models and Kaplan-Meier analysis. *Results:* Multivariate-adjusted hazard ratios (HRs) were comparable in diabetes patients with cerebrovascular disease (HR 3.2; 95% CI 1.3–7.4), coronary heart disease (HR 3.3; 1.5–7.1) and peripheral arterial disease (HR 2.6; 1.1–6.3), compared to those without vascular disease. Multivariate-adjusted HR was 2.7; (1.3–5.9) in patients with one vascular location and 4.8; (2.1–10.9) in those with ≥ 2 locations. The 3-year risks were respectively 11.6% (7.4–15.7) and 26.7% (16.8–36.7). *Conclusion and discussion:* Diabetes patients with prior vascular disease have an increased risk of cardiovascular events, irrespective of symptomatic vascular location. Cardiovascular risk increased with the number of locations. Data emphasize the necessity of early and aggressive treatment of cardiovascular risk factors in diabetes patients.

ABSTRACTS POSTER PRESENTATIONS

ABSTRACT 8

SECOND MANIFESTATIONS OF ARTERIAL DISEASE (SMART) STUDY: RATIONALE AND DESIGN

A. Algra, Y. van der Graaf

Background (and relevance): The Second Manifestations of ARterial disease (SMART) study is a single-centre prospective cohort study among patients newly referred to the hospital with (1) clinically manifest atherosclerotic vessel disease, or (2) marked risk factors for atherosclerosis. *Objectives (and question):* The first objectives of SMART are to determine the prevalence of concomitant arterial disease at other sites, and risk factors in patients presenting with a manifestation of arterial disease or vascular risk factor and to study the incidence of future cardiovascular events and its predictors. *Design and methods:* The patients undergo baseline examinations, including a questionnaire on vascular disease, height, weight and blood pressure measurements, blood tests on glucose, lipids, creatinine and homocysteine, urinary tests for microproteinuria, resting 12-lead electrocardiogram, ankle brachial

pressure index, ultrasound scanning of the abdominal aorta, kidneys and the carotid arteries and measurements of common carotid intima-media thickness. In a subset of patients MR scanning of the brain is done. Abnormal findings are reported to the treating physician and general practitioner with a treatment suggestion according to current practice guidelines. The study enrolled its first patient in 1996 and in November 2005 the total number of patients included is over 5500. So far 29 papers on pathophysiological and prognostic aspects have been published.

ABSTRACT 9

POLARIS STUDY DESIGN

D.M.O. Pruijsen, L.J. Kappelle, A. Algra

Background (and relevance): Participants of the SMART study referred from the neurology department will also be subject to a genetic study. Patients who have had a TIA or ischemic stroke (IS) of presumed arterial origin are included in the "POLymorphisms And Risk of Ischemic Stroke" (POLARIS) study. Twin and family-based studies indicate that genetics factors might be involved in the risk of TIA and IS. Identification of genetic risk factors for new vascular events after cerebral ischemia may target secondary prevention. *Objectives (and question):* The overall aim of POLARIS is to study which polymorphisms predispose to new vascular events after TIA/IS and to assess their predictive value. *Design and methods:* The study design is twofold. In part one the prevalences of polymorphisms will be compared between 300 long-term survivors of the Dutch TIA Trial (average follow-up 10 years) and 820 patients with recent TIA/IS (mainly from the SMART study). In part two a cohort of 820 patients with recent TIA/IS will be followed for the occurrence of vascular events for an average of 3.5 years. Several polymorphisms of interest will be genotyped, including factor V Leiden, prothrombin 20210A, methylenetetrahydrofolate reductase C677T, HR2 haplotype factor V and factor XIII Val34Leu.

ABSTRACT 10

THE RATIONALE AND DESIGN OF THE SPAIN-STUDY: MULTIFACTORIAL APPROACH AND TREATMENT BY A NURSE PRACTITIONER THROUGH INTERNET IN PATIENTS WITH CLINICAL MANIFESTATIONS OF CARDIOVASCULAR DISEASE

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Background (and relevance): Despite recent advances in medical treatment, cardiovascular disease (CVD) is still health problem number one in western societies. A multifactorial approach with the aid of nurse practitioners (NPs) is beneficial for achieving treatment goals and reducing events in patients with manifest CVD. *Objectives (and question):* In the Self-management of vascular Patients Activated by Internet and Nurses (SPAIN) pilot study, we want to implement and test a secure personalized website with additional treatment and coaching of a NP for hypertension, hyperlipidemia, diabetes mellitus, smoking and obesity in patients with clinical manifestations of CVD. *Design and Methods:* 50

interesting patients are going to use the secure patient-specific website. Before the use of the web-application, risk factors are measured. Realistic treatment goal(s) for elevated risk factors based on current guidelines are made and appointments how to achieve the treatment goal(s) are determined between the patients and the NP in a face to face contact. Patients can enter his/ her own weight or a new blood pressure measurement for instance, besides the regular exchange information with the responding NP through e-mail messages. The NP personally replies as quick as possible and gives regular but protocol driven feedback and support to the patient. The risk factors are remeasured after six months. *Conclusion and discussion:* The SPAIN study is aimed to implement and test a patient specific website. Secondary outcome is the change in cardiovascular risk profile. The pre-post measurements of risk factors and the amount of corresponding e-mail messages between the patient and the NP enhances the feasibility of this innovative way of risk factor management.

ABSTRACT 11

THE RATIONALE AND DESIGN OF THE RULE-STUDY: EFFECTIVENESS OF VASCULAR SCREENING PROGRAM ON RISK FACTOR REDUCTION IN PATIENTS AT HIGH RISK FOR ATHEROSCLEROSIS

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Background (and relevance): Modification of vascular risk factors has been shown to be effective in reducing mortality and morbidity in patients with symptomatic atherosclerosis. Nevertheless, reduction of risk factors in clinical practice is difficult to achieve and maintain. *Objectives (and question):* In the Risk management in Utrecht and Leiden Evaluation (RULE) study, a prospective, comparative study, we assess the effects of a multidisciplinary vascular screening program on improvement of the cardiovascular risk profile and to compare this to a setting without such a program that provides current standard practice in patients referred for cardiovascular disorders. *Design and Methods:* Patients with diabetes mellitus, coronary artery disease, cerebrovascular disease, or peripheral arterial disease (150 per disease category in each hospital) referred by the general practitioner will be enrolled, started January 2005. At the UMCU, patients need to be enrolled in the vascular screening program or will be identified through the hospital registration system. At the LUMC patients will be identified through the hospital registration system. Risk factors will be measured in the two hospitals at baseline and one year after their initial visit. A risk function will be developed for this population based on data of the whole cohort. Analysis will be performed on the two comparison groups as a whole, and on subgroups per disease category. Changes in risk factors will be assessed with linear or logistic regression procedures, adjusting for differences in baseline characteristics between groups. *Conclusion and discussion:* The RULE study is aimed to evaluate the added value of a systematic hospital based vascular screening program on risk factor management in patients at high risk for vascular diseases.

ABSTRACT 12**EARLY CEREBRAL DAMAGE IN PATIENTS WITH MANIFEST VASCULAR DISEASE: THE SECOND MR FOR SMART (SMS) STUDY: RATIONALE AND DESIGN**A.P.A. Appelman¹, Y. van der Graaf², W.P.T.h.M. Mali¹¹ Department of Radiology ²Julius Center for Health Sciences and Primary Care, Utrecht, the Netherlands

Background: Signs of early cerebral damage are frequently seen on MRI scans in elderly people. They are related to future manifest cerebrovascular disease and cognitive deterioration. Cardiovascular risk factors can only partially explain their presence and progression. Evidence that inflammation is involved in atherogenesis continues to accumulate. Chronic infections can act as an inflammatory stimulus. It is possible that subclinical inflammation and chronic infections play a role in the pathogenesis of early cerebral damage. **Objectives (and question):** To unravel the role of inflammation and chronic infection in the occurrence and progression of early cerebral damage in patients with manifest vascular disease. **Design and Methods:** 1200 participants of the SMART study with manifest vascular disease underwent an MR investigation of the brain between May 2001 and December 2005. Starting in January of 2006 all patients are invited for a second MR of the brain after an average follow-up period of four years. Both at baseline and after follow-up all cardiovascular risk factors are measured and blood samples are stored to assess levels of inflammatory biomarkers and antibodies against several pathogens. Occurrence and progression of early cerebral damage is assessed by measuring the volume of white matter lesions, the number of silent brain infarctions, cerebral atrophy, aberrant metabolic ratios measured with MR spectroscopy and cognitive function at baseline and after follow-up. The relation between inflammation, chronic infection and the occurrence and progression of early cerebral damage will be investigated using both cross-sectional and longitudinal analysis.

ABSTRACT 13**MONOCYTE CHEMOATTRACTANT PROTEIN 1 (MCP-1) POLYMORPHISM AND SUSCEPTIBILITY FOR CORONARY COLLATERALS**J.J. Regieli^{1,2}, J. Koerselman², Ng Sunanto^{1,2}, M. Entius¹, P.P. de Jaegere¹, Y. van der Graaf², D.E. Grobbee², P.A. Doevendans¹¹Heart Lung Institute, Dept of Cardiology ²Clinical Epidemiology, Julius Center for Health Sciences and Primary Care, Utrecht, Netherlands

Background (and relevance): Collateral formation is an important beneficial condition during an acute ischemic event. A marked interindividual variability in high risk patients is seen, but at present the basis for this variability is unclear and can not be explained solely by environmental factors. A genetic factor might be present that could influence coronary collateral formation. **Objectives (and question):** We have analyzed the association between a single nucleotide polymorphism in MCP-1 and the formation of coronary collaterals in patients admitted for angioplasty. MCP-1 has been suggested to play an important role in collateral development. **Design and Methods:** This study involved 226 Caucasian patients who were admitted for coronary angioplasty. Coronary collateral development was defined angiographically as Rentrop-grade ≥ 1 . Polymorphisms in the promoter region of MCP-1 (-2518) were identified by PCR and allele specific restriction digestion. This method allows identification of individuals with either AA, AG or GG at MCP-1 position -2518. Statistical analysis was performed using a X2-test, unconditional logistic regression, likelihood ratio and a Wald's test. **Results:** We could genotype 224 of the 226 patients. Coronary collaterals (Rentrop-grade > 1) were found in 84 patients. The allele frequency for AA, AG and GG was 53.1%, 40.2% and 6.7%, respectively. The dis-

tribution of MCP-1 genotypes in subjects without collaterals was in Hardy Weinberg equilibrium. We found that individuals with G allele (24%) were more likely to have collaterals than those with homozygous AA (OR 1.66, 95% CI 0.96 to 2.87) adjusted for potential confounders. Linear regression shows that the allele G increased the likelihood for collateral presence with a factor 1.41. **Conclusion and discussion:** This study provides evidence for a role for genetic variation of MCP-1 gene in the occurrence of coronary collaterals in high risk patients.

ABSTRACT 14**SELF-EFFICACY IN PATIENTS WITH CLINICAL MANIFESTATIONS OF VASCULAR DISEASES**

B.G.M. Sol, Y. van der Graaf, J.J. van der Bijl, B.M.B. Goessens, F.L.J. Visseren

Background (and relevance): Patients with established cardiovascular disease are at high risk of developing new vascular events or death. This risk can be reduced by lifelong treatment of risk factors and by permanent changes in lifestyle. Self-efficacy is important for achieving behavior change by self-management. **Objectives (and question):** The self-efficacy of different vascular risk factors subgroups in patients with clinical manifestations of atherosclerotic vascular diseases was investigated. **Design and Methods:** From January 2001 until September 2003, 192 patients with recently established clinically manifest atherosclerotic disease with > 2 modifiable vascular risk factors were selected for the study. The mean self-efficacy scores were calculated for vascular risk factors (age, sex, vascular disease, weight, diabetes mellitus, smoking behavior, hypercholesterolemia, hypertension, and hyperhomocysteinemia). **Results:** Diabetes, overweight, and smoking, but none of the other risk factors, were significantly associated with the level of self-efficacy in these patients. Patients with Diabetes had lower self-efficacy scores (3.0) for exercise and controlling weight (3.7) than patients without diabetes (4.2 $p = 0.05$) and (4.1 $p = 0.01$) respectively. Overweight patients scored low on controlling weight (3.8 and 3.5 $p < 0.001$) and choosing healthy food (3.7 and 3.3 $p = 0.01$) than patients who were on a healthy weight (4.3 and 4.0). **Conclusion and discussion:** Patients with vascular diseases appear to have high levels of self-efficacy regarding medication use (4.8), exercise (4.1), and controlling weight (4.0). In patients with diabetes, overweight and in smokers, self efficacy levels were lower. **Practice implications:** In nursing care and research on developing self-efficacy based interventions, lower self-efficacy levels can be taken into account for specific vascular patient groups.

ABSTRACT 15**SERUM URIC ACID LEVELS AND RISK FOR CARDIOVASCULAR DISEASES IN PATIENTS WITH AND WITHOUT THE METABOLIC SYNDROME**

J. Hjortnaes, A. Algra, J. Olijhoek, M. Huysman, H. Jacobs, Y. van der Graaf, F. Visseren

Introduction

Background (and relevance): Little is known about the role of serum uric acid in the metabolic syndrome and increased risk of cardiovascular disease. We investigated the association between uric acid levels and the metabolic syndrome in a population of patients with manifest vascular diseases and whether serum uric acid levels conveyed an increased risk for cardiovascular disease in patients with the metabolic syndrome. **Design and methods:** This is a nested case-cohort study of 431 patients originating from the Second Manifestations of Arterial Disease (SMART) study. All patients had manifest vascular diseases, constituting peripheral artery disease, cerebral ischemia, coronary artery disease and abdominal aortic aneurysm. Analyzing the relationship of serum uric acid with the metabolic syndrome, age, sex, creatinine clearance, alcohol and diuretics were considered as confounders. Investigating the relationship of serum uric acid levels with the risk

for cardiovascular disease, values were adjusted for age and sex. **Results:** The metabolic syndrome was present in 50% of the patients. Serum uric acid levels in 214 patients with metabolic syndrome were higher compared to 217 patients without (0.36 ± 0.08 mmol/l vs. 0.32 ± 0.09 mmol/l). Serum uric acid concentrations increased with the number of components of the metabolic syndrome (0.30 mmol/l to 0.38 mmol/l) adjusted for age, sex, creatinine clearance, alcohol and use of diuretics. Increased serum uric acid concentrations showed to be independently associated with the occurrence of cardiovascular events in patients without the metabolic syndrome (age and sex adjusted HR: 1.9, 95% CI 0.9–3.9), contrary to patients with the metabolic syndrome (adjusted HR: 1.3, 95% CI 0.6–2.7). **Conclusion:** Elevated serum uric acid levels are strongly associated with the metabolic syndrome, yet are not linked to an increased risk for cardiovascular disease in patients with the metabolic syndrome. However, in patients without the metabolic syndrome elevated serum uric acid levels are associated with increased risk for cardiovascular disease.

ABSTRACT 16

LATE-LIFE DEPRESSION AND CHRONIC STRESS AS RISK FACTORS FOR HIPPOCAMPAL ATROPHY AND COGNITIVE DECLINE

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Background (and relevance): Hippocampal atrophy and cognitive decline are early characteristics of Alzheimer's disease. Many risk factors for hippocampal atrophy and cognitive decline are still unknown. Interest has increased in the possible role of depression and stress hormones in the etiology of hippocampal atrophy and cognitive decline. **Objectives (and question):** The objective of this study is to investigate the overall and combined role of late-life depression, prolonged psychosocial stress exposure, and stress hormones in the etiology of hippocampal atrophy and cognitive decline. **Design and methods:** As part of the SMART study, 1200 participants with manifest vascular disease underwent an MRI of the brain between May 2001 and December 2005. In a subsample of 800 subjects, cognitive function and depressed mood were assessed. Starting in January 2006, all patients are invited for a follow-up MRI of the brain. At this follow-up measurement, minor and major depression, hypothalamic-pituitary-adrenal (HPA) axis function indicated by salivary cortisol, psychosocial stress exposure indicated by stressful life events early and later in life, and cognitive functioning will also be assessed. The independent and combined effects of late-life depression, (change in) HPA-axis activity, and psychosocial stress exposure on risk of hippocampal atrophy and cognitive decline will be estimated with regression analysis techniques adjusting for potential confounders.

645 FAILURE TO PUBLISH STUDY RESULTS IN EPIDEMIOLOGICAL STUDIES: OCCURRENCE AND AVOIDANCE

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Session: Symposium Reporting Bias

Presentation: Symposium.

Introduction The Netherlands Epidemiological Society advocates according to good epidemiological practice, that research with

sound research questions and good methodology should be adequately published independent of the research outcomes. Although reporting bias in clinical trials is fully acknowledged, failure to report outcomes or selective reporting of outcomes in non-clinical trial epidemiological studies is less well known, but most likely occurs as well. In this mini-symposium the Netherlands epidemiological society wants to give attention to this phenomenon of not publishing research outcomes, to encourage publication of all outcomes of adequate research. Different scopes to this subject will be addressed: the background, an example of occurrence, initiatives to possibly avoid it and an editor's point of view.

Program:

- 0:00 – 0:15 Introduction
Inge Wouters
- 0:15 – 0:30 Effects of publication bias in environmental epidemiology: an example
Ross Anderson
- 0:30 – 0:45 Failure to publish study outcomes: Can the STROBE statement help avoid non-publication of outcomes?
Erik von Elm
- 0:45 – 1:00 Not publishing of negative or adverse associations: an editor's point of view.
prof. A. Knottnerus
- 1:00 – 1:30 Panel discussion and concluding remarks

Target audience: This mini-symposium is primarily meant for epidemiologists regardless of their research setting. We would like to have an open discussion with all participants at the end, therefore the programs allows extra time for discussion.

ABSTRACT 1

FAILURE TO PUBLISH STUDY RESULTS OF EPIDEMIOLOGICAL STUDIES: INTRODUCTION TO THE TOPIC

Inge M. Wouters, on behalf of the Netherlands Epidemiological Society, Institute for Risk Assessment Sciences (IRAS), The Netherlands

Selective reporting of outcomes in clinical studies (reporting bias) has been described to occur frequently. Therefore a registration of clinical trials is started which enables to address this problem in the future since occurrence of not publishing negative or adverse outcomes can be investigated with this registration. In non-clinical epidemiological studies the failure to report outcomes or selective reporting of outcomes most likely occurs as well, but is less studied and reported. Again studies with negative outcomes or no associations are the ones most likely not to be reported. The most important obstacles for not publishing no or negative associations are tradition and priorities of researchers and journals. The reviewers might play a role in this as well. The Netherlands Epidemiological Society advocates according to good epidemiological practice, that research with sound research questions and good methodology should be adequately published independent of the research outcomes. However, reality occurs not to be accordingly. Therefore we would like to give attention to this phenomenon of not publishing research outcomes in non-trial-based epidemiological studies, to encourage publication of all outcomes of adequate research. In this mini-symposium, firstly the effects of failure or selective publishing of outcomes on subsequent meta-analysis in a non-clinical research setting will be demonstrated. Afterwards, initiatives to promote and improve publication of observational epidemiological research will be addressed, the editor's point of view on this phenomenon will be given and finally concluding remarks will be given.

ABSTRACT 2**AN EXAMPLE OF PUBLICATION BIAS IN ENVIRONMENTAL EPIDEMIOLOGY: PUBLICATION AND LAG SELECTION BIAS IN TIME-SERIES STUDIES OF THE HEALTH EFFECTS OF AMBIENT AIR POLLUTION**

H.Ross Anderson

Background: There are several reasons for suspecting reporting bias in time-series studies of air pollution. Such bias could lead to false conclusions concerning causal associations or inflate estimates of health impact. **Objectives:** To examine time-series results for evidence of publication and lag selection bias. **Design and methods:** All published time-series studies were identified and relevant data extracted into a relational database. Effect estimates were adjusted to an increment of $10\mu\text{g}/\text{m}^3$. Publication bias was investigated using funnel plots and two statistical methods (Begg, Egger). Adjusted summary estimates were calculated using the “trim and fill” method. The effect of lag selection was investigated using data on mortality from 90 US cities and from a European multi-centre panel study of children. **Results:** There was evidence of publication bias in a number of pollutant-outcome analyses. Adjustment reduced the summary estimates by up to 20%. Selection of the most significant lag increased estimates by over 100% compared with a fixed lag. **Conclusion and discussion:** Publication and lag selection bias occurs in these studies but significant associations remain. Presentation and publication of time-series results should be standardised.

ABSTRACT 3**FAILURE TO PUBLISH STUDY OUTCOMES: CAN THE STROBE STATEMENT HELP AVOID NON-PUBLICATION OF OUTCOMES?**

Erik von Elm for the STROBE group

Background: Selective non-publication of study outcomes hampers the critical appraisal and appropriate interpretation of available evidence. Its existence could be shown empirically in clinical trials. Observational research often uses an exploratory approach rather than testing specific hypotheses. Results of multiple data analyses may be selected based on their direction and significance. **Objectives:** To improve the quality of reporting of observational studies. To help avoid selective non-publication of study outcomes. **Methods:** “Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)” is an international multidisciplinary initiative that currently develops a checklist of items recommended for the reporting of observational studies (<http://www.strobe-statement.org>). **Results:** STROBE recommends to avoid selective reporting of ‘positive’ or ‘significant’ study results and to base the interpretation on main results rather than on results of secondary analyses. **Discussion:** STROBE cannot prevent data dredging, but it promotes transparency at the publication stage. For instance, if multiple statistical analyses were performed in a large dataset to identify new exposure-outcome associations, authors should give details and not only report significant associations. STROBE could have a “feedback effect” on study quality since, ideally, researchers think ahead when a study is planned and consider points that are essential for later publication.

ABSTRACT 4**NOT PUBLISHING OF NEGATIVE OR ADVERSE ASSOCIATIONS: THE EDITOR’S POINT OF VIEW.**

Dr. J.A. Knottnerus, University of Maastricht, Maastricht, The Netherlands

Good publishing practice begins with *researchers* considering (1) whether an intended study can bring added value, irrespective its result, (2) and whether its methodology is valid to pick up positive

and negative outcomes equally well. When reporting (3) they should adequately discuss the significance of a negative result (4) and be as eager to publish negative results as positive ones. As to *editors*, intentional bias in relation to study results is considered editorial malpractice, whatever its motivation. Unintentional bias may be more frequent but will not easily be noticed, also by editors. Editorial *responsibility* implies several levels (accepting for review, choice of reviewers, assess their reviews, decision making, and a repeated process in case of resubmission). Various designs for process evaluation can be considered. Evaluation will be more difficult for journals with few professional support. Collaboration between journals can help, and may also avoid ‘self evaluation bias’. In line with registering of randomized trials, *registers* for observational study protocols could facilitate monitoring for bias and searching unpublished results. But practicalities, methodological requirements, and bureaucratic burden should not be underestimated. In principle, in an era of *electronic publishing* every study can be made widely accessible widely also if not ‘accepted’, by editors or authors themselves. However, this would need huge changes in culture of authoring and reading, editorial practice, publishing business, and scientific openness. The audience may mention some concrete examples of biased not publishing for discussion.

646 EPIC MINISYMPOSIUM IEA

P.H.M. Peeters University Medical Center Utrecht, UTRECHT, The Netherlands

Session: Epic Symposium**Presentation:** Symposium.

338 HIGH SERUM INSULIN-LIKE GROWTH FACTOR-I LEVELS INCREASE RISK OF PREMENOPAUSAL OVARIAN CANCER IN THE EPIC COHORT

C.H. Gils¹, P.H.M. Peeters¹, A. Lukanova², N. Allen³, F. Berrino⁴, T. Key³, L. Dossus⁵, S. Rinaldi⁵, E. Riboli⁶, R. Kaaks⁵¹University Medical Center Utrecht, UTRECHT, The Netherlands²New York University School of Medicine, NEW YORK, United States of America ³Cancer Research UK, University of Oxford, OXFORD, United Kingdom ⁴National Cancer Institute, MILAN, Italy ⁵IARC Int. Agency for Research on Cancer, LYON, France⁶Imperial College London, LONDON, United Kingdom

Background: High circulating levels of Insulin-like Growth Factor-I (IGF-I), a mitogenic and anti-apoptotic peptide, have been associated with increased risk of several cancer types. **Objective:** To study circulating levels of IGF-I and IGF Binding Protein-3 (IGFBP-3) in relation to ovarian cancer risk. **Design and methods:** Within the European Prospective Investigation into Cancer and Nutrition (EPIC), we compared levels of IGF-I and IGFBP-3 measured in blood samples collected at baseline in 214 women who subsequently developed ovarian cancer (37 women diagnosed before age 50) and 388 controls. **Results:** The risk of developing ovarian cancer before age 50 (‘premenopausal’ was increased among women in the middle or top tertiles of IGF-I, compared to the lowest tertile: OR = 2.69 [95% CI: 0.87 – 8.35], and OR = 3.20 [95% CI: 1.01 – 10.2], respectively (p trend = 0.06). Results were adjusted for BMI, previous hormone use, fertility problems and parity. Adjustment for IGFBP-3 levels slightly attenuated relative risks. In older women we observed no association between IGF-I, IGFBP-3 and ovarian cancer risk. **Discussion and conclusion:** In agreement with the only other prospective study in this field (Lukanova et al, Int J Cancer, 2002), our results indicate that high circulating IGF-I levels may increase the risk of premenopausal ovarian cancer.

495 PREMENOPAUSAL IGF-1 SERUM LEVELS AND CHANGES IN BREAST DENSITY OVER MENOPAUSE

M. Verheus¹, R. Kaaks², P.H.M. Peeters¹, C.H. Van Gils¹
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Background: The proportion of glandular and stromal tissue in the breast (percent breast density) is a strong breast cancer risk factor. Insulin-like Growth Factor 1 (IGF-1) is hypothesized to influence breast cancer risk by increasing breast density. **Objectives:** We studied the relation between premenopausal circulating IGF-1 levels and changes in breast density over menopause. **Design and Methods:** Mammograms and blood samples of 684 premenopausal participants of the Prospect-EPIC cohort were collected at baseline. A second mammogram was collected after these women became postmenopausal. We determined serum IGF-1 levels. Mammographic density was assessed using a computer-assisted method. Changes in percent density over menopause were calculated for quartiles of IGF-1, using linear regression, adjusted for age and BMI. **Results:** Premenopausal percent density was not associated with IGF-1 levels (mean percent density 0.43 in all quartiles). However, women in the highest IGF-1 quartile showed less decrease in percent density over menopause (1st quartile: -0.094 vs 4th quartile: -0.059, p-trend = 0.02). This was mostly explained by a stronger decrease of total breast size in women with high IGF-1 levels. **Conclusion and discussion:** Women with high IGF-1 levels show a lower decrease of percent density over menopause than those with low IGF-1 levels.

119 BODY SIZE AND RISK OF COLON CANCER IN THE EUROPEAN PROSPECTIVE INVESTIGATION INTO CANCER AND NUTRITION (EPIC)

T. Pischon¹, P.H. Lahmann¹, H. Boeing¹, C. Friedenreich², T. Norat³, E.P.I.C. Group¹ ¹German Institute of Human Nutrition, POTSDAM-REHBRUECKE, Germany ²Alberta Cancer Board, ALBERTA, Canada ³WHO-IARC, LYON, France

Background: Body mass index (BMI) has been found to be associated with risk of colon cancer in men, whereas weaker associations have been reported for women. Reasons for this discrepancy are unclear but may be related to fat distribution or use of hormone replacement therapy (HRT) in women. **Objective:** To examine the association between anthropometry and risk of colon cancer in men and women. **Design and Methods:** During 6.1 years of follow-up, we identified 984 cases of colon cancer among 368,277 subjects free of cancer at baseline from 9 European countries. **Results:** BMI was significantly related to colon cancer risk in men (RR per kg/m², 1.05; 95%-CI 1.02–1.08) but not in women (RR 1.02; 1.00–1.04; p interaction = 0.04), whereas waist-hip-ratio (WHR) was equally strong related to risk in both genders (RR per 0.1, men, 1.24; 95%-CI 1.05–1.46; women, 1.24; 1.10–1.39; p interaction = 0.92). The positive association for WHR was not apparent among postmenopausal women who used HRT. **Conclusions:** Abdominal obesity is an equally strong risk factor for colon cancer in both sexes and WHR is a disease predictor superior to BMI in women. The association may vary depending on HRT use in postmenopausal women; however, these findings require confirmation in future studies.

632 FRUITS AND VEGETABLES AND THE RISK OF COLORECTAL CANCER IN EPIC

H.B. Bueno-de-Mesquita¹, P. Ferrari², M. Jenab², H.C. Boshuizen¹, M.M. Ros¹, C. Casagrande², M. Mazuir², T. Norat² ¹RIVM, BILTHOVEN, The Netherlands ²IARC, LYON, France

Background: Fruits and vegetables are thought to protect against colorectal cancer. Recent cohort studies, however, have not been able to show a protective effect. **Patients & Methods:** The relationship between consumption of vegetables and fruit and the

incidence of colorectal cancer within EPIC was examined among 453,158 subjects of whom 1808 developed colorectal cancer. A multivariate Cox proportional hazard model was used to determine adjusted cancer risk estimates. A calibration method based on standardized 24-hour dietary recalls was used to correct for measurement errors. **Results:** After adjustment for potential confounding and exclusion of the first two years of follow-up, the results suggest that consumption of vegetables and fruits is weakly, inversely associated with risk of colorectal cancer (HR 1.00, 0.85, 0.85, 0.86, 0.79, for quintiles of intake, 95% CI upper quintile 0.65–0.97, p-trend 0.06), with each 100 gram daily increase in vegetables and fruit associated with a statistically borderline significant 3% reduction in colorectal cancer risk (HR 0.97; 0.94–1.00). Linear calibration strengthened this effect. Further subgroup analyses will be presented. **Conclusion:** Findings within EPIC support the hypothesis that increased consumption of fruits and vegetables may protect against colorectal cancer risk.

214 DIVERSITY IN INTAKE OF VEGETABLES AND FRUIT AND THE RISK OF GASTRIC AND OESOPHAGUS CANCER IN EPIC

F.L. Büchner¹, H.C. Boshuizen¹, C. Casagrande², A.O. Quartero³, M.E. Numans³, H.B. Bueno-de-Mesquita¹ ¹Inst. for Public Health & Environment, BILTHOVEN, The Netherlands ²IARC, LYON, France ³Julius Center UMC, UTRECHT, The Netherlands

A diverse consumption of vegetables and fruit may influence the risk of gastric and oesophageal cancer. Diet Diversity Scores (DDS) were calculated within the EPIC cohort data from > 520,000 subjects in 10 European countries. Four scores, counting the number of FFQ-based food-items usually eaten at least once in two weeks, were calculated to represent the diversity in the overall vegetable and/or fruit consumption. After an average follow-up of 6.1 years, 400 incident cases of gastric and oesophageal cancer were observed. Cox proportional hazard models were used to compute tertile specific risks, stratified by follow-up duration, gender and centre and adjusted for total consumption of vegetables and fruit and potential confounders. Preliminary findings suggest that, compared to individuals who eat from only 5 or less vegetable sub-groups, individuals who usually eat from eight different sub-groups, have a reduced gastric cancer risk (HR 0.68; 95% CI 0.45–1.05). In comparison to all others, individuals who usually eat only the same fruit may experience an elevated risk (HR 1.34; 95% CI 0.95–1.89). These findings from the EPIC study suggest that a diverse consumption of vegetables may reduce gastric and oesophageal cancer risk. Subjects with a very low diversity in fruit consumption may experience higher risk.

44 PHYSICAL ACTIVITY AND LUNG CANCER RISK IN THE EPIC COHORT

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Background: Previous research on physical activity and lung cancer risk, conducted predominantly in males, has yielded inconsistent results. **Objectives:** We examined this relationship among 416,277 men and women from the EPIC-cohort. **Design and Methods:** During 6.3 years of follow-up we identified 607 men and 476 women with incident primary lung cancer. Detailed information on recreational, household and occupational physical activity, smoking habits, and diet was assessed. Relative risks (RR) were estimated using Cox regression. **Results:** We did not observe an inverse association between occupational, recreational or household physical activity and lung cancer risk either in males or in females. We found a modest reduction in lung cancer risk associated with sports in males and cycling in females. For occupational physical activity, lung cancer risk was increased for unemployed men (RR = 1.55; 95% confidence interval 1.18–2.03) and men with standing occupations (RR = 1.34; 1.01–1.78) compared with

sitting professions. *Conclusion:* Our study shows no convincing protective associations of physical activity with lung cancer risk. *Discussion:* It may be speculated that the elevated risks for occupational physical activity could reflect the higher probability that manual workers are exposed to industrial carcinogens compared to workers having sitting/office jobs.

647 MINI SYMPOSIUM ON REGULATORY ASPECTS OF EUROPEAN EPIDEMIOLOGICAL STUDIES WITH DATA AND TISSUE AT THE EUROEPI2006

E.B. van Veen¹, J.W. Coebergh² ¹ L.I.M. Medlawconsult, the Netherlands ² Rotterdam, The Netherlands Committee on Regulation of Research (COREON) of Netherlands Epidemiological Society (VvE) and Dutch Federation of Biomedical Societies (FMWV)

From trust to rules and back in epidemiological research in Europe

Purposes: Epidemiological research almost always means using data and, increasingly, human tissue as well. The use of these resources is not free but is subject to various regulations, which

differ in the European countries on several important aspects. Usually these regulations have been determined without involvement of active epidemiological researchers or patient organisations. This workshop will address the issues involved in these regulations in the European context. It will serve the following purposes:

- to provide arguments and tools and to exchange best practices for a way out of the regulatory labyrinths especially in cross European research projects;
- to provide a platform for epidemiologists and patient groups to discuss their concerns about impediments for epidemiological research with other parties, like data protection authorities.

Targeted audience: The mini symposium is primarily meant for epidemiologists, but provides an excellent opportunity to meet and discuss with other stakeholders, like from patient groups, data protection authorities, the European Commission etc. as well. Therefore program allows for extra time for discussion. The other stakeholders will be explicitly invited. A special 'day ticket' is available to

Satellite Symposium

Epidemiology and the seventh EU research framework

Over the last few years the seventh EU research framework has been drafted. It is now rapidly moving towards the first calls for proposals. Previous EU research programmes and frameworks have been criticised because they are considered to include too few possibilities for epidemiological research and public health research. This Satellite-Symposium will provide an outline of the research framework and inform researchers about the current state of affairs of the seventh EU research framework. Special focus will be on the possibilities for epidemiology and public health research.

11.30–12.00	Outline of and Epidemiology in the seventh EU research framework	K. McCarthy Head of Sector Public Health research European Commission, DG Research, Brussels, Belgium
12.00–12.15	EU framework research funding applications: The role and place of the national Contact Points	S. De Wild-Charonnens, SenterNovem/EG-Liaison, National Contact Point FP6 LifeSciHealth, The Hague, The Netherlands
12.15–12.30	EU framework research funding applications: Improving fundability and overcoming barriers	F. Deege, Senior Consultant, Price Waterhouse Coopers Advisory, The Hague, The Netherlands
12.30–12.45	EU research framework: Experiences from Epidemiology	Prof. B. Brunekreef, PhD, Institute for Risk Assessment Sciences, Utrecht University, The Netherlands
12.45–13.00	Discussion	
14.30	Opening	Chair: Prof. J. Vandenbroucke, Leiden, The Netherlands
14.30–14.35	Welcome by our host	Prof. Jan Willem Coebergh, Rotterdam, The Netherlands
14.35–14.50	Introduction, international and national regulations on the use of data and tissue or research in Europe , different approaches to: – ‘identifiability’ of data – consent for using data and tissue for research the TubaFrost Code of Conduct to exchange data and tissue across Europe.	Evert-Ben van Veen L.I.M. (Medlawconsult, the Netherlands)
14.50–15.05	Data and tissuebanking for research in Denmark: a liberal approach The Danish approach to use patient data for epidemiological research, cooperation of the Danish Data Protection Authority, the Danish Act of 2004 to use anonymous but coded tissue for research based on an opt-out system, first experiences	Hans Storm Ph.D. (Copenhagen, Denmark)
15.05–15.20	Estonian Data Protection Act: a disaster for epidemiology The story of the birth of the Act, implementing the European data protection Directive and of its consequences reveal political and administrative incapability resulting in gradual vanishing of register-based epidemiological research.	Prof. Mati Rahu Ph.D. (Tallinn, Estonia)
15.20–15.35	Are patients afraid of epidemiological research? Patient communication, privacy, decision making, holistic approach	Prof. Louis Denis, MD, FACS, Antwerp Belgium
16.35–15.50	Views from a Data Protection Authority The Italian approach to using data and tissue for epidemiological research, individual vs. societal interests, a special regime for genetic data	G. Buttarelli, L.I.M., Garante Privacy (Rome, Italy)
15.50–16.20	Questions and forum discussion: how to proceed?	

ORALS

6 INTER-SCAN REPRODUCIBILITY OF CORONARY CALCIUM MEASUREMENT USING MULTI SLICE COMPUTER TOMOGRAPHY

S. Sabour, A. Rutten, Y. Van der Schouw, D.E. Grobbee, W. Mali, M. Prokop, M.L. Bots University Medical Center Utrecht, ROTTERDAM, The Netherlands

Session: Cardiovascular

Presentation: Oral.

Background: Non-invasive assessment of atherosclerosis is important. Most of the evidence of coronary calcium has been based on images obtained by electron beam CT (EBCT). Current data suggest that EBCT and Multi-Slice CT (MSCT) give comparable results. Since MSCT is more widely available than EBCT, information on its reproducibility is relevant. *Objective:* To assess inter-scan reproducibility of MSCT and to evaluate whether reproducibility is affected by different measurement protocols, slice thickness, cardiovascular risk factors and technical variables. *Design:* Cross-sectional study. *Materials and methods:* The study population comprised 76 healthy postmenopausal women. Coronary calcium was assessed in these women twice at two separate visits using MSCT (Philips Mx 8000 IDT 16). Images were made using 1.5 and 3.0 mm slice thickness. The Agatston, volume and mass scores were assessed. Reproducibility was determined by mean differences, absolute mean differences and Intra-class correlation coefficients (ICCC). *Results:* The reproducibility of coronary calcium measurements between scans was excellent with ICC of > 0.98, and small mean and absolute mean differences. Reproducibility was similar for 1.5 as for 3.0 mm slices, and equal for Agatston, volume and mass measurements. *Conclusion:* Inter-scan reproducibility of MSCT is excellent, irrespective of slice thickness and type of calcium parameter.

8 SOCIOECONOMIC STATUS AS PROXY FOR LIFE STYLE FACTORS

M.M. Movahedi¹, T.B. Bishop², J.B. Barrett² ¹ Lorestan University, KHORAMABAD, Iran ² Cancer Research UK, LEEDS, United Kingdom

Session: Socio-economic status and migrants

Presentation: Oral.

Background: It has been suggested that the incidence of colorectal cancer is associated with socioeconomic status (SES). The major part of this association may be explained by known lifestyle risk factors such as dietary habits. *Objective:* To explore the association between diet and SES measured at area-based level. *Methods:* The data for this analysis were taken from a multi-centre case-control study conducted to investigate the association between some environmental, genetic factors and colorectal cancer incidence. The Townsend scores (as deprivation index) were categorized into fifths. A linear regression analysis was used to estimate difference in mean of each continuous variable of diet by deprivation fifth. *Results:* The mean of processed meat consumption in the most deprived area was higher compared to the mean of that in the most affluent areas (mean difference = 5.5, 95% CI: 3.94, 7.05). By contrast, the mean of vegetables and fruits consumption in the most deprived areas was lower than that in the affluent areas. *Conclusion:* Our findings suggest that lifestyle factors are likely to be related to SES. Thus any relation between SES and colorectal cancer may direct us to seek for the role of different life style factors in aetiology of this cancer.

9 SMOKING DURING PREGNANCY AND RISK OF LOW SEMEN QUALITY IN MALE OFFSPRING

C.R. Ramlau-Hansen¹, A.M. Thulstrup¹, G. Toft¹, J. Olsen², J.P. Bonde¹ ¹Aarhus University Hospital, ÅRHUS C, Denmark ²Institute of Epidemiology, UCLA, LOS ANGELES, United States of America

Session: Reproduction

Presentation: Oral.

Background: The reason for the apparent decline in semen quality during the past 50 years is still unexplained. *Objective:* To investigate the effect of exposure to cigarette smoke in utero on the semen quality in the male offspring. *Design and Methods:* In this prospective follow-up study, 350 adult sons of mothers, who during pregnancy provided information about smoking and other lifestyle factors, are sampled in six strata according to prenatal tobacco smoke exposure. Each man provides a semen sample, a blood sample, and answers a questionnaire, which is collected in a mobile laboratory. External quality assessment of semen analysis is performed twice a year. *Results:* Until now, a total of 265 men have been included. The participation rate is 52%. The percentage of men with decreased sperm concentration (<20 mill/ml) is 23%. The unadjusted median (25–75% percentile) sperm concentration in the non-exposed group (n = 90) is 49 (23–86) mill/ml compared to 33 (12–63) mill/ml among men exposed to >19 cigarettes per day in fetal life (n = 26). *Conclusion and discussion:* Preliminary results suggest that smoking during pregnancy decreases the sons' sperm concentration. If corroborated by adequate analyses of the complete dataset, it may provide clues to understand the decrease in semen quality.

17 THE CLINICAL VALUE OF A NEGATIVE MDCT-SCAN IN PATIENTS SUSPECTED OF CORONARY ARTERY DISEASE: A META-ANALYSIS

H.J. Van der Zaag-Loonen, R. Dijkers, G.H. De Bock, M. Oudkerk University Medical Center Groningen, GRONINGEN, The Netherlands

Session: Cardiovascular

Presentation: Oral.

Aim: To calculate the sensitivity of contrast-enhanced multi-detector computed tomography (MDCT) compared with coronary angiography (CAG) in incident patients suspected of coronary artery disease (CAD). We searched Pubmed, Embase, bibliographies of original papers and reviews to identify original papers comparing MDCT with CAG in > 20 patients suspected of CAD. Two independent reviewers selected papers and judged eligible papers on quality using the QUADAS tool. Heterogeneity was assessed by the Higgins and Thompson's test. Post-test probability of disease was calculated by using the pooled negative likelihood ratio. Of the 17 eligible studies 11 provided moderately homogeneous (I squared = 47%) patient based analyses (n = 641 patients). Pooled sensitivity was 89% (95% confidence interval: 85% to 92%). Scanners with 16- detectors or more had higher sensitivities (n = 4; pooled sensitivity: 91%) than four-detector scanners (pooling not possible). One study reported the sensitivity for clinically relevant stenoses: 94% versus 88% for overall stenosis detection. With a pre-test probability of 40% the post-test probability of disease with a negative MDCT scan was 9.4%. *Conclusions:* The sensitivity of MDCT is not sufficient to rule out any stenosis in patients suspected of CAD. No conclusions can be drawn with respect to the sensitivity for clinically relevant stenoses.

18 PREVALENCE OF OVERWEIGHT, OBESITY AND PHYSICAL ACTIVITY LEVELS. A STUDY IN PORTUGUESE CHILDREN AND ADOLESCENTS.

A. Seabra¹, R. Garganta¹, D. De Melo Vasques de Mendonça², M. Thomis³, J. Maia¹ ¹Faculdade Ciências Desporto, PORTO, Portugal ²Instituto Ciências Biomédicas, PORTO, Portugal ³Katholieke Universiteit Leuven, LEUVEN, Belgium

Session: Metabolic Syndrome

Presentation: Oral.

Aim: To estimate the prevalence of overweight and obesity, and their effects in physical activity (PA) levels of Portuguese children and adolescents aged 10–18 years. *Methods:* The sample comprises 12669 subjects (6489 females-6180 males) attending basic/secondary schools. The prevalence of overweight and obesity was calculated using body mass index (BMI), and the cut-off points suggested by Cole et al. (2000). PA was assessed with the Baecke et al. (1982) questionnaire. Proportions were compared using chi-square tests and means by ANOVA. *Results and conclusions:* Overall, 17.1% were overweight (females = 16.4%; males = 17.8%) and 3.3% were obese (females = 3.0%; males = 3.6%). Prevalence was similar across age and gender. BMI changed with age ($p < 0.001$), and a significant interaction between age and gender was found ($p = 0.001$): whereas BMI in males increased with aging, in females increased up to 16 years and stabilized onwards. Males showed significantly higher values of PA ($p < 0.001$). Both genders had a tendency to increase their PA until 16–17 years. A significant interaction between age and gender ($p = 0.006$) points out different gender patterns across age: PA increased with aging in males but in females started to decline after 16 years. No significant differences in PA were found between Normal weight, overweight and obese subjects ($p = 0.352$).

20 C-REACTIVE PROTEIN IS RELATED TO EXTENT AND PROGRESSION OF (EXTRA) CORONARY ATHEROSCLEROSIS; THE ROTTERDAM STUDY

S.E. Elias-Smale, I. Kardys, A. Hofman, J.C.M. Witteman Erasmus MC, ROTTERDAM, The Netherlands

Session: Cardiovascular

Presentation: Oral.

Background: Atherosclerosis is an inflammatory process. However, the relation between inflammatory markers and extent and progression of atherosclerosis remains unclear. *Objectives:* We studied the association between C-reactive protein (CRP) and 5 established measures of atherosclerosis. *Design and Methods:* Within the Rotterdam study, a population-based cohort of 7,983 persons over age 55, we measured CRP, carotid plaque and intima-media thickness (IMT), abdominal artery calcification, ankle-brachial index (ABI) and coronary calcification. Using ANCOVA, we investigated the relation between CRP and extent of atherosclerosis. We studied the association between progression of extra coronary atherosclerosis (mean follow-up period: 6.4 years) and CRP using multinomial regression analysis. *Results:* CRP levels were positively related to all measures of atherosclerosis, but the relation was weaker for measures based on detection of calcification only. CRP levels were associated with severe progression of carotid plaque (multivariable adjusted odds ratio: 1.5, 95% CI: 0.9–2.5), IMT (1.7, 1.0–2.8) and ABI (1.7, 1.1–2.6). No relation was observed with progression of abdominal artery calcification. *Conclusion and discussion:* CRP is related to extent and progression of atherosclerosis. The relation seems weaker for measures based on detection of calcification only, indicating that calcification of plaques might attenuate the inflammatory process.

22 LOWER BIRTH WEIGHT OF DUTCH NEONATES WHO WERE IN UTERO AT THE TIME OF THE SEPTEMBER 11 ATTACKS

L.J.M. Smits¹, L. Krabbendam¹, R. De Bie¹, G. Essed², J. Van Os¹ ¹University of Maastricht, MAASTRICHT, The Netherlands ²University Hospital, MAASTRICHT, The Netherlands

Session: Birthweight

Presentation: Oral.

Background: Maternal stress during pregnancy has been reported to have an adverse influence on fetal growth. The terrorist attacks of September 11, 2001 on the United States have provoked feelings of insecurity and stress worldwide. *Objective:* Our aim was to test the hypothesis that maternal exposure to these acts of terrorism via the media had an unfavourable influence on mean birth weight in The Netherlands. *Design and methods:* In a prospective cohort study, we compared birth weights of 1885 Dutch neonates who were in utero during the attacks with those of 1258 neonates who were in utero exactly 1 year later. *Results:* In the exposed group, birth weight was lower than in the non-exposed group (difference, 48 g, 95%CI 13.6, 82.9, $p = 0.006$). The difference in birth weight could not be explained by tobacco use, maternal age, parity or other potential confounders, nor by shorter pregnancy durations. *Conclusion:* These results provide evidence supporting the hypothesis that exposure of Dutch pregnant women to the September 11 events via the media has had an adverse effect on the birth weight of their offspring.

32 ACE-INHIBITOR USE AND DECREASED PNEUMONIA RISK IN ELDERLY PATIENTS WITH DIABETES

E.M.W. Van de Garde¹, P.C. Souverein¹, E. Hak², J.M.M. Van den Bosch³, V.H.M. Deneer³, H.G.M. Leufkens¹ ¹Utrecht University, UTRECHT, The Netherlands ²University Medical Centre Utrecht, UTRECHT, The Netherlands ³St. Antonius Hospital, NIEUWEGEIN, The Netherlands

Session: Diabetes

Presentation: Oral.

Objective: Asian studies suggested potential reduction in the risk of pneumonia among patients with stroke on ACE-inhibitor therapy. Because of the high risk of pneumonia in patients with diabetes we aimed to assess the effects of ACE-inhibitors on the occurrence of pneumonia in a general, ambulatory population of diabetic patients. *Methods:* A case-control study was performed nested in 142,175 patients with diabetes. Cases were defined as patients with a first diagnosis of pneumonia. For each case, up to 4 controls were matched by age, gender, practice, and index date. Current ACE-inhibitor use was defined within a time-window encompassing the index date. *Results:* ACE-inhibitors were used in 12.7% of 4,719 cases and in 13.7% of 15,322 matched controls (crude OR: 0.92, 95% CI 0.82 to 1.01). After adjusting for potential confounders, ACE-inhibitor therapy was associated with a reduction in pneumonia risk (adjusted OR: 0.72, 95% CI 0.64 to 0.80). The association was consistent among different relevant subgroups (stroke, heart failure, and pulmonary diseases) and showed a strong dose-effect relationship ($p < 0.001$). *Conclusions:* Use of ACE-inhibitors was significantly associated with reduced pneumonia risk and may apart from blood pressure lowering properties be useful in prevention of respiratory infections in patients with diabetes.

37 LOW TOTAL AND FREE TESTOSTERONE LEVELS AND DECLINE IN PHYSICAL PERFORMANCE AND MUSCLE STRENGTH IN OLDER MEN AND WOMEN

L.A. Schaap¹, M. Visser¹, M.F. Pluijm², D.J.H. Deeg¹, B.W.J.H. Penninx¹, B.J. Nicklas³, A.B. Newman⁴, T.B. Harris⁵, J.A. Cauley⁴, B.H. Goodpaster⁴, F.A. Tylavsky⁶, K. Yaffe⁷, S.B. Kritchevsky³ ¹VU university Medical Center, AMSTERDAM, The Netherlands ²Erasmus MC, ROTTERDAM, The Netherlands ³Wake Forest University School of Med, WINSTON-SALEM, United States of America ⁴University of Pittsburg, PITTSBURG, United States of America ⁵National Institute on Aging, BETHESDA, United States of America ⁶University of Tennessee, TENNESSEE, United States of America ⁷University of California, SAN FRANCISCO, United States of America

Session: Molecular Epidemiology

Presentation: Oral.

Background: Progressive decline in serum levels of testosterone occurs with normal aging in both men and women. This is paralleled by a decrease in physical performance and muscle strength, which may lead to disability, institutionalization and mortality. *Objective:* We examined whether low levels of testosterone were associated with three-year decline in physical performance and muscle strength in two population-based samples of older men and women. *Methods:* Data were available for 623 men in the Longitudinal Aging Study Amsterdam (LASA) and 1172 men and 1278 women in the Health, Aging, and Body Composition (Health ABC) study. Levels of total testosterone and free testosterone were determined at baseline. Physical performance and grip strength were measured at baseline and after three years. *Results:* Total and free testosterone were not associated with change in physical performance or muscle strength in men. In women, low levels of total testosterone (< 20 ng/dl) increased the risk of decline in physical performance ($p = 0.03$), and low levels of free testosterone (< 2 pg/ml) of decline in muscle strength ($p = 0.03$). *Conclusion:* Low levels of total and free testosterone were associated with decline in physical performance and muscle strength in older women, but not in older men.

38 PREDIAGNOSTIC SERUM LEVELS OF C-PEPTIDE, IGFBP-1, IGFBP-2 AND ENDOMETRIAL CANCER RISK IN THE EPIC STUDY

A.E. Cust¹, N.E. Allen², S. Rinaldi³, L. Dossus³, E. Riboli⁴, R. Kaaks³ ¹IARC, LYON, France ²Cancer Research UK Epidemiology Unit, OXFORD, United Kingdom ³IARC, Nutrition and Hormones Unit, LYON, France ⁴Imperial College London, LONDON, United Kingdom

Session: Molecular Epidemiology

Presentation: Oral.

Background: Obesity and physical inactivity are key determinants of insulin resistance, and chronic hyperinsulinemia may mediate their effects on endometrial cancer (EC) risk. *Aim:* To examine the relationships between prediagnostic serum concentrations of C-peptide, IGF binding protein (IGFBP)-1 and IGFBP-2, and EC risk. *Methods:* We conducted a case-control study nested within the EPIC prospective cohort study, including 286 incident cases of EC, in pre- and post-menopausal women, and 555 matched control subjects. Odds ratios (OR) and 95% confidence intervals (CI) were calculated using conditional logistic regression models. *Results:* In fasting women (> 6 h since last meal), serum levels of C-peptide, IGFBP-1 and IGFBP-2 were not related to risk. However, in non-fasting women (6 h or less since last meal), EC risk increased with increasing serum levels of C-peptide (Ptrend=0.001, OR top quartile = 2.54 [95% CI 1.40–4.61]), and decreasing serum levels of IGFBP-1 (Ptrend = 0.04, OR top quartile = 0.52 [0.29–0.93]) and

IGFBP-2 (Ptrend=0.001, OR top quartile=0.38 [0.21–0.68]). After adjusting for BMI in non-fasting subjects, a significant association remained for C-peptide (Ptrend=0.03; OR top quartile = 1.88 [0.99–3.56]) and IGFBP-2 (Ptrend=0.05; OR top quartile = 0.51 [0.27–0.97]) but not for IGFBP-1 (Ptrend=0.31; OR top quartile=0.69 [0.37–1.26]). *Conclusions:* Our results provide further evidence that hyperinsulinemia is a risk factor for EC.

49 PREVALENCE AND FACTORS ASSOCIATED WITH CURRENT SMOKING AMONG HIGH SCHOOL ADOLESCENTS IN KARACHI, PAKISTAN

S.R. Rozi¹, S.A. Akhtar² ¹Aga Khan University Hospital, KARACHI, Pakistan ²Department of Community Medicine, SAFAT, Kuwait

Session: Smoking

Presentation: Oral.

Background: Tobacco is the single most preventable cause of death in the world today. Tobacco use primarily begins in early adolescent. *Objective:* To estimate the prevalence and evaluate factors associated with smoking among high school going adolescents in Karachi, Pakistan. *Methods:* A school based cross sectional survey was conducted in three towns of Karachi from January through May 2003. Two-stage cluster sampling stratified on school types was employed to select schools and students. Self-reported smoking status of school going adolescents was our main outcome in analysis. *Results:* Prevalence of smoking (30 days) among adolescents was 13.7%. Multiple logistic regression model showed that after adjustment for age, ethnicity and place of residence, being student of a government school (OR = 1.6; 95% CI: 1.0–2.7), parental smoking (OR = 1.7; 95% CI: 1.1–2.8), uncle (OR = 1.7; 95% CI: 1.2–2.8), peer smoking (OR = 6.2; 95% CI: 3.9–9.9) and spending leisure time outside home (OR = 3.9; 95% CI 1.2–13.2) were significantly associated with adolescents smoking. *Conclusion:* A 13.7% prevalence of smoking among school going adolescents and influence of parents and peers in initiating smoking in this age group warrant the need for effective tobacco control in the country especially among the adolescents.

52 COMPARING EFFECT ESTIMATES OF INDIVIDUAL PATIENT DATA META-ANALYSES AND META-ANALYSES OF PUBLISHED DATA

L. Koopman¹, G.J.M.G. Van der Heijden¹, P.P. Glasziou², D.E. Grobbee¹, M.M. Rovers¹ ¹University Medical Centre Utrecht, UTRECHT, The Netherlands ²Oxford University, OXFORD, United Kingdom

Session: Meta Analysis

Presentation: Oral.

Background: Individual patient data meta-analyses (IPD-MA) have been proposed to improve subgroup analyses that may provide clinically relevant information. Nevertheless, comparison of the effect estimates of IPD-MA and meta-analyses of published data (MAP) are lacking. *Objective:* To compare main and subgroup effect estimates of IPD-MA and MAP. *Methods:* An extended literature search was performed to identify all IPD-MA of randomized controlled trials, followed by a related article search to identify MAPs with a similar domain, objective, and outcome. Data were extracted regarding number of trials, number of subgroups, effect measure, effect estimate and their confidence intervals. *Results:* In total 16 IPD-MA and 18 MAP could be included in the analysis. Twentyfive main effect estimates could be compared; of which 22 were in the same direction. Although over 100 subgroups were studied in both IPD-MA and MAP, only 18 effect estimates could be compared; 17 were in the same direction. Subgroup analyses in MAP most often related to trial characteristics, whereas subgroup analyses

in IPD-MA were related to patient characteristics. *Conclusion:* Comparable IPD-MA and MAP report similar main and subgroup effect estimates. However, IPD-MA more often study subgroups based on patient characteristics, and thus provide more clinically relevant information.

53 SINGLE AND REPEAT INFLUENZA VACCINATION IS EFFECTIVE IN ADULTS WITH DIABETES MELLITUS

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Session: Vaccination

Presentation: Oral.

Patients with diabetes have an increased risk of a complicated course of community-acquired lower respiratory tract infections. Although influenza vaccination is recommended for these persons, vaccination levels remain too low because of conflicting evidence regarding potential benefits. As part of the PRISMA nested case-control study among 75,000 persons recommended for vaccination, we studied the effectiveness of single and repeat influenza vaccination in the subgroup of adult diabetic population (9,238) during the 1999–2000 influenza A epidemic. Case patients were hospitalized for diabetes, acute respiratory or cardiovascular events, or died and controls were sampled from the baseline cohort. After control for age, gender, health insurance, prior health care, medication use and co-morbid conditions logistic regression analysis showed that the occurrence of any complication (131 hospitalizations, 61 deaths) was reduced by 56% (95% confidence interval 36% to 70%). Vaccine effectiveness was similar for those who received the vaccine for the first time and for those who received an earlier influenza vaccination. Although we did not perform virological analysis or distinguish type I from type II diabetes we conclude that patients with diabetes benefit substantially from influenza vaccination independent of whether they received the vaccine for the first time or received earlier influenza vaccinations.

56 DIAGNOSTIC MODEL FOR SILICOSIS IN CONSTRUCTION WORKERS

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Session: Respiratory

Presentation: Oral.

Background: Construction workers are at risk of developing silicosis. Regular medical evaluations to detect silicosis preferably in the pre-clinical phase are needed. *Objectives:* To identify the presence or absence of silicosis by developing an easy to use diagnostic model for pneumoconiosis from simple questionnaires and spirometry. *Design and Methods:* Multiple logistic regression analysis was done in 1291 Dutch construction workers, using chest x-ray indicative for pneumoconiosis (ILO profusion category > 1/1) as the reference standard (prevalence 2.9%). Model calibration was assessed with graph and the Hosmer-Lemeshow goodness of fit test; discriminative ability using area under receiver operating characteristic curve (AUC); and internal validity using bootstrapping procedure. *Results:* Age > 40 years, current smoking, high exposure job title, working > 15 years in the construction industry, 'feeling unhealthy', and standardized residual FEV1 below -1.0 were selected as predictors. The diagnostic model showed a good calibration (p = 0.5) and discriminative ability (AUC 0.81; 95% CI 0.74 to 0.85). Internal validity was reasonable (correction factor of 0.82 and optimism corrected AUC of 0.76). *Conclusions:* and discussion: Our diagnostic model for silicosis showed reasonable performance and internal validity. To apply the model with

confidence, external validation before application in a new working population is recommended.

57 MODERATE EFFECT OF ARTEMISININ-BASED COMBINATION THERAPY ON TRANSMISSION OF PLASMODIUM FALCIPARUM

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Session: Tropical diseases

Presentation: Oral.

Background: Artemisinin based combination therapy (ACT) reduces microscopic gametocytaemia, the malaria parasite stage responsible for transmission from man to mosquito. As a result, ACT is expected to reduce the burden of disease in African populations. However, molecular techniques recently revealed high prevalences of gametocytaemia below the microscopic threshold. Our objective was to determine the importance of sub-microscopic gametocytaemia after ACT treatment. *Methods:* Kenyan children (n=528) aged 6 months – 10 years were randomised to four treatment regimens. Gametocytaemia was determined by microscopy and Pfs25 real-time nucleic acid sequence-based amplification (QT-NASBA). Transmission was determined by membrane feedings. *Findings:* Gametocyte prevalence at enrolment was 89.4% (219/245) as determined by Pfs25 QT-NASBA and decreased after treatment with ACT. Membrane feedings in randomly selected children revealed that the proportion of infectious children was up to fourfold higher than expected when based on microscopy. ACT did not significantly reduce the proportion of infectious children but merely the proportion of infected mosquitoes. *Interpretation:* Sub-microscopic gametocyte densities are common after treatment and contribute considerably to mosquito infection. Our novel approach indicates that the effect of ACT on malaria transmission is much smaller than previously suggested. These findings are sobering for future interventions aiming to reduce malaria transmission.

58 THE EFFECTIVENESS OF VACCINATING HIGH RISK POPULATIONS AGAINST HEPATITIS B IN A LOW ENDEMICITY SETTING

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Session: Vaccination

Presentation: Oral.

Background: In the Netherlands, an increased effort was undertaken to vaccinate populations at high risk for hepatitis B infection. In 2001, vaccination of children born to immigrants was included into the National Immunisation Programme. From 2002 to 2006 a vaccination programme targeted to highly sexually active persons was conducted. *Objectives:* To evaluate the effectiveness of those vaccination programmes in reducing the incidence of hepatitis B infections. *Methods:* We used a mathematical model for the transmission of hepatitis B infection. The model includes perinatal transmission, horizontal childhood transmission, and sexual transmission. We implemented different vaccination scenarios and analysed their effects on the incidence of hepatitis B infection. *Results:* Vaccinating children of immigrants can reduce the incidence of hepatitis B infection by almost 30% over a time period of 50 years. Vaccinating the sexually highly active groups in a four year catch-up campaign has a short term additional effect, and if

continued over 50 years an additional decrease in incidence of 8% can be reached. *Conclusions:* Vaccination of immigrant children is an effective alternative to universal infant vaccination. A targeted vaccination programme for sexually highly active risk groups has a moderate additional effect if continued over a long time period.

60 FOLATE, VITAMIN B12 AND ALCOHOL INTAKE AND THE RISK OF POSTMENOPAUSAL BREAST CANCER AMONG FRENCH WOMEN

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Session: Cancer in Women

Presentation: Oral.

Background: Adequate folate intake may be important in the prevention of breast cancer. Factors linked to folate metabolism may be relevant to its protective role. *Objectives:* To investigate the association between folate intake and breast cancer risk among postmenopausal women and evaluate the interaction with alcohol and vitamin B12 intake. *Methods:* A prospective cohort analysis of folate intake among 62,739 postmenopausal women from the E3N French cohort who completed a validated food frequency questionnaire in 1993 was conducted. During 9 years follow-up 1,814 cases of pathology-confirmed breast cancer were documented through follow-up questionnaires. Nutrient intakes were categorized in quintiles and energy-adjusted using the regression-residual method. Cox model-derived relative risks (RR) were adjusted for known risk factors for breast cancer. *Results:* The multivariate RR comparing the extreme quintiles of folate intake was 0.76 (95% CI 0.65–0.88; p-trend=0.005). After stratification, the association was observed only among women whose alcohol consumption was above the median (=6.2 g/day) and among women who consumed =6.5µg/day of vitamin B12. However, tests for interaction were not significant. *Conclusions:* In this population, high intakes of folate were associated with decreased breast cancer risk; alcohol and vitamin B12 intake may modify the observed inverse association.

69 NEONATAL ADIPOSITY AND RISK OF ATOPIC DERMATITIS IN INFANCY: A PROSPECTIVE BIRTH COHORT STUDY FROM GERMANY.

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Session: Birthweight

Presentation: Oral.

Background: The simultaneous rise in the prevalence of obesity and atopy in children has prompted suggestions that obesity might be a causal factor in the inception of atopic diseases. *Objective:* We investigated the possible role of ponderal index (kg/m³) as marker for fatness at birth in early childhood atopic dermatitis (AD) in a prospective birth cohort study. *Methods:* Between November 2000 and November 2001, mothers and their newborns were recruited after delivery at the University of Ulm, Germany. Active follow-up was performed at the age of 12 months. *Results:* For 872 (82%) of the 1066 children included at baseline, information on physician reported diagnosis of AD was obtained during follow-up. Incidence of AD was 12.4% at the age of one year. Mean ponderal index at birth was 24.7 kg/m³. Risk for AD was higher among children with high ponderal index at birth (adjusted OR for children within the third and fourth compared to children within the

second quartile of ponderal index: 2.14; 95% CI 1.03–4.45 and 2.66; 95% CI 1.29–5.50, respectively). *Conclusion:* This pattern suggests that adipose tissue of the infants may play a role in the pathogenesis of obesity-related atopic disease.

70 DURATION OF BREASTFEEDING AND RISK OF OVERWEIGHT IN CHILDHOOD: A PROSPECTIVE BIRTH COHORT STUDY FROM GERMANY.

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Session: Childrens health

Presentation: Oral.

Background: The relationship between duration of breastfeeding and risk of childhood overweight remains inconclusive, possibly in part caused by using never breastfeeding mothers as the reference category. *Objectives:* We assessed the association between duration of breastfeeding and childhood overweight among ever breastfed children within a prospective birth cohort study. *Methods:* Between November 2000 and November 2001 all mothers and their newborns were recruited after delivery at the University of Ulm, Germany. Active follow-up was performed at age 24 months. *Results:* Among 855 children (80% of 1066 children included at baseline) with available body mass index at age two 72 (8.4%) were overweight. Whereas 76 children (8.9%) were never breastfed, 533 (62.3%) were breastfed for at least six months, and 322 (37.7%) were exclusively breastfed for at least six months. Compared to children who were exclusively breastfed less than three months, the adjusted OR for overweight was 0.8 (95% CI 0.4; 1.5) in children who were exclusively breastfed for at least three but less than six months and 0.4 (95% CI 0.2; 0.9) in children who were exclusively breastfed for at least six months. *Conclusion:* These results highlight the importance of prolonged breastfeeding in the prevention of overweight in children.

75 WHO FEEDING RECOMMENDATIONS WITH PROMOTION COULD SAVE 132 000 LIVES / YEAR, 1/4 OF AFRICAN CHILDREN BORN TO HIV+ MOTHERS

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Session: Trends and Impact

Presentation: Oral.

Background: In Africa, HIV and feeding practices influence child mortality. Exclusive breastfeeding for 6 months (BF6) and formula feeding (FF) when affordable are two WHO recommendations for safe feeding. *Objective:* we estimated the proportion and the number of children saved with each recommendation at population level. *Design and Methods:* Data on 31 Sub-Saharan countries were analysed. We considered saved a child remaining HIV-free and alive after two years of life. A spreadsheet model based on a decision tree for risk assessment was used to calculate this number according to six scenarios that combine the two recommendations without and with promotion then with promotion and group education. *Results:* Whatever the country, the number of children saved with BF6 would be higher than with FF. Overall, without promotion, 52 315 (9.6%) lives would be yearly saved with BF6 vs. 21 638 (4.0%) with FF. Promotion and group education would dramatically improve this result: 132 633 (24.3%) yearly saved lives with BF6 vs. 54 192 (9.9%) with FF. *Conclusion:* United Nation intention by 2010 is to reduce the mortality rate of children under five by at least 33%. Where FF is not safe, BF6 and full promotion would save 1/4 of threatened children.

82 FARM CHILDHOOD AND ADULT LIVESTOCK FARMING PROTECT AGAINST HAY FEVER IN ORGANIC AND CONVENTIONAL FARMERS

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Session: Childrens health

Presentation: Oral.

Background: Farming has been associated with respiratory symptoms as well as protection against atopy. Effects of different farming practices on respiratory health in adults have rarely been studied. *Objectives:* We studied associations between farming practices and hay fever and current asthma in organic and conventional farmers. *Design and Methods* This cross-sectional study evaluated questionnaire data of 1205 conventional and 593 organic farmers. Associations between health effects and farm exposures were assessed by logistic regression. *Results:* Organic farmers reported slightly more hay fever than conventional farmers (9.3% versus 6.9%, $p = 0.07$). However, organic farming was no independent determinant for hay fever in multivariate models including farming practices and potential confounders. Livestock farmers who grew up on a farm had a five-fold lower prevalence of hay fever than crop farmers without farm childhood (OR 0.2, 95% CI 0.1–0.5). Use of disinfectants containing quaternary ammonium compounds was positively related to hay fever (OR 2.4, 95% CI 1.1–5.1). No effects of farming practices were found for asthma. *Conclusion and discussion:* Our study adds to the evidence that a farm childhood in combination with current livestock farming protects against allergic disorders. This effect was found for both organic and conventional farmers.

83 A HIGH BODY MASS INDEX IS ASSOCIATED WITH LOW MORTALITY IN PHYSICALLY HEAVILY WORKING MEN

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Session: Obesity

Presentation: Oral.

Background: Although a body mass index (BMI) above 25 kg/m² is clearly associated with an increase in mortality in the general population, the meaning of high levels of BMI among physically heavily working men is less clear. *Methods:* We assessed the association between BMI and mortality in a cohort of 19513 male construction workers, aged 25–64 years, who underwent an occupational health examination in Württemberg (Germany) during 1986–1992 and who were followed over a 10 years period. Covariates considered in the proportional hazard regression analysis included age, nationality, smoking status, alcohol consumption, and comorbidity. *Results:* During the follow-up 802 deaths occurred. There was a strong U-shaped association between BMI and all-cause mortality, which was lowest for BMI levels between 25 and 35 kg/m². This pattern persisted after exclusion of the first years of follow-up and control for multiple covariates. Compared with men with a BMI < 25.0 kg/m², the relative mortality was 0.76 (95% confidence interval: 0.64–0.91), 0.75 (0.59–0.97) and 1.00 (0.62–1.62) for BMI ranges 25–29.9, 30–34.9 and = 35.0 kg/m². *Conclusion and discussion:* BMI levels commonly considered to reflect overweight or moderate obesity in the general population may be associated with reduced mortality in physically heavily working men.

88 RISK OF COLORECTAL CANCER AFTER COLONOSCOPY WITH POLYPECTOMY: IMPLICATIONS FOR SURVEILLANCE

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Session: Screening 1

Presentation: Oral.

Background: Colonoscopy with removal of polyps may strongly reduce colorectal cancer (CRC) incidence and mortality. Empirical evidence for optimal schedules for surveillance is limited. *Objective:* To assess risk of proximal and distal CRC after colonoscopy with polypectomy. *Design and Methods:* History and results of colonoscopies were obtained from 540 cases and 614 controls in a population-based case-control study in Germany. Risk of proximal and distal CRC according to time since colonoscopy was compared to risk of subjects without previous colonoscopy. *Results:* Subjects with previous detection and removal of polyps had a much lower risk of CRC within four years after colonoscopy (adjusted odds ratio 0.38, 95% confidence interval 0.18–0.78), and a similar risk as those without colonoscopy in the long run. Within four years after colonoscopy, risk was particularly low if only single or small adenomas were detected. Most cancers occurring after polypectomy were located in the proximal colon, even if polyps were found in the sigma or rectum only. *Conclusion and discussion:* Our results support suggestions that surveillance colonoscopy after removal of single and small adenomas may be deferred to five years and that surveillance should include the entire colorectum even if only distal polyps are detected.

89 INFLUENCE OF ALTERNATIVE MAMMOGRAPHIC SCREENING SCENARIOS ON BREAST CANCER INCIDENCE PREDICTIONS

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Session: Screening 1

Presentation: Oral.

Background: A population-based early detection programme for breast cancer has been in progress in Finland since 1987. Recently, detailed information about actual screening invitation schemes in 1987–2001 has become available in electronic form, which enables more specific modeling of breast cancer incidence. *Objectives:* To present a methodology for taking into account historical municipality-specific schemes of mass screening when constructing predictions for breast cancer incidence. To provide predictions for numbers of new cancer cases and incidence rates according to alternative future screening policies. *Methods:* Observed municipality-specific screening invitation schemes in Finland during 1987–2001 were linked together with breast cancer data. The incidence rate during the observation period was analyzed using Poisson regression, and this was done separately for localized and non-localized cancers. For modeling, the screening programme was divided into seven different phases. Alternative screening scenarios for future mass-screening practices in Finland were created and an appropriate model for incidence prediction was defined. *Results and conclusion:* Expanding the screening programme would increase the incidence of localized breast cancers; the biggest increase would be obtained by expanding from women aged 50–59 to 50–69. The impacts of changes in the screening practices on predictions for non-localized cancers would be minor.

99 EVALUATING NEW SCREENING TECHNOLOGIES WITHIN ROUTINE CERVICAL SCREENING: THE FINNISH RANDOMISED MULTI-ARM TRIAL

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Session: Screening 2

Presentation: Oral.

Background: New screening technologies are implemented to routine screening in increasing numbers, with limited evidence on their effectiveness. Randomised evaluation of new technologies is encouraged but rarely done. *Objective:* To evaluate in a randomised design whether the effectiveness of an organised cervical screening programme can be improved by means of new technologies. *Methods:* Since 1999 150,000–170,000 women have been invited annually to a randomised multi-arm trial within the Finnish organised cervical screening programme. The invited women are randomly allocated to three study arms of different primary screening tests: conventional cytology, automation-assisted cytology and, since 2003, human papillomavirus (HPV) testing. Up to 2005, we have gathered information on 185,000 screening visits in the automation-assisted arm and 4,653 in the HPV arm, and we have compared the results to conventional screening. *Results:* Automation-assistance resulted in a slightly increased detection of precancers, but the efficacy based on interval cancers is not known. Results on HPV screening suggest higher detection of precancers and cancers compared to conventional screening. *Conclusion:* Evidence of higher effectiveness of new screening technologies is needed, especially when changing the existing screening programmes. The multi-arm trial shows how these technologies can be implemented to routine in a controlled manner.

100 INCIDENCE AND FACTORS ASSOCIATED TO THYROID DISEASES IN THE SU.VI.MAX STUDY, FRANCE, 1994–2002.

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Session: Modeling

Presentation: Oral.

Introduction: Nodules and goitres are important risk factors for thyroid cancer. As the number of diagnosed cases of thyroid cancer is increasing, the incidence of such risk factors has been assessed in a French cohort of adults. *Methods:* The SU.VI.MAX (Supplémentation en Vitamines et Minéraux Antioxydants) cohort study included 12741 middle-aged adults followed-up during eight years. Incident cases of goitres and nodules have been identified retrospectively by scheduled clinical examinations and spontaneous consultations by the participants. Cox proportional hazards modeling was used to identify factors associated to thyroid diseases. *Results:* Finally, 160 incident cases of nodules and goitres were identified among 4,002 subjects free of thyroid diseases at inclusion. After an average follow-up of 7 years, the incidence of goitres and nodules was 2.2% in 45–60 year old men, 4.9% in 35–44 year old women and 7.4% in 45–60 year old women. Identified associated factors were age, low urinary thiocyanate level and oral contraceptive use in women, and high urinary thiocyanate level and low urinary iodine level in men. *Conclusion:* Estimated incidences are consistent with those observed in other countries. The protective role of urinary thiocyanate in both men and women and, in women, oral contraceptives deserve further investigation.

103 AVOIDABLE CANCER IN EUROPE

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Session: Oncology

Presentation: Oral.

Background: There were an estimated 2.8 million new cancer cases in Europe in 2002, increasing by 11% since 1995. Worldwide comparison in 1980 reported that 85% of cancers could be avoided. *Objective:* To estimate the avoidable number and proportion of cancers in 28 European countries. *Design and Methods:* The difference in the expected incidence rates of the 11 cancers amenable to lifestyle was compared to that observed in Europe in 2002. Calculating the expected number of new cancer cases was done by projecting the lowest incidence rate of a cancer in a European country to that of the other countries. *Results:* Of the 1.1 million new cancer cases, 273,334 (40%) cancers in male and 213,970 (50%) cancers in female were potentially avoidable. This yielded about 50% of oral cavity, laryngeal, kidney and bladder cancer among men and 60% of laryngeal, oesophageal, lung and kidney cancer in women. Hungary and Czech Republic exhibited the highest proportion of avoidable cancers, especially those related to smoking, alcohol and overweight. *Conclusion and discussion:* Almost half of newly diagnosed cancer cases in Europe might be avoidable by lifestyle changes.

108 COMPARISON OF OUTBREAK DETECTION METHODS IN A HOSPITAL SETTING USING A STOCHASTIC SIMULATION MODEL

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Session: Outbreaks

Presentation: Oral.

Background: Various statistical Methods for outbreak detection in hospital settings have been proposed in the literature. Usually validation of those methods is difficult, because the long time series of data needed for testing the methods are not available. Modeling is a tool to overcome that difficulty. *Objectives:* To use model generated data for testing sensitivity and specificity of different outbreak detection methods. *Methods:* We developed a simple stochastic model for a process of importation and transmission of infection in small populations (hospital wards). We applied different statistical outbreak detection methods described in the literature to the generated time series of diagnosis data and calculated and the sensitivity and specificity of different methods. *Results:* We present ROC curves for the different methods and show how they depend on the underlying model parameters. We discuss how sensitivity and specificity measures depend on the degree of underdiagnosis, on the ratio of admitted colonised patients to colonisation resulting from transmission in the hospital, and on the frequency of testing patients for colonisation. *Conclusions:* Modeling can be a useful tool for evaluating statistical methods of outbreak detection especially in situation where real data is scarce or its quality questionable.

110 THE DETRIMENTAL INFLUENCE OF BREAST DENSITY AND HORMONE REPLACEMENT THERAPY ON MAMMOGRAPHIC CANCER SCREENING

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Session: Pharmaco Epidemiology

Presentation: Oral.

Background: Breast cancer screening is hampered by dense parenchymal tissue. Recently hormone replacement therapy (HRT),

associated with higher mammographic density and breast pain, has been increased which has bearing on screening performance. **Objective:** We compared the screening performance for women aged 49–69 years with dense and lucent breast patterns in two time periods and studied the possible interaction with use of HRT. **Methods:** Data were collected from a Dutch regional screening programme for women referred in 1994–1995 (n = 642) and 2001–2002 (n = 107). In addition, we sampled controls for both periods that were not referred (n = 1927 and n = 212 resp.) and women diagnosed with an interval cancer. Mammograms were digitised and computer-assisted methods used to measure mammographic density. Among other parameters, sensitivity was calculated to describe screening performance. **Results:** Screening performance has improved slightly, but the difference between dense and lucent breast patterns still exists (e.g. sensitivity 62% vs. 78%). HRT use has increased; sensitivity was particularly low (38%) in the group of women with dense breast patterns on HRT. **Discussion:** In conclusion, the detrimental effect of breast density and the interaction with HRT on screening performance warrants further research with enlargement of the catchment area, more referred women, interval cancers and controls.

111 SELF-ORGANIZING MAPS AS NEW TOOL TO DETECT POPULATION STRUCTURE

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Session: Genetics and genomics epidemiology

Presentation: Oral.

Background: Population based association studies might lead to false-positive results if possibly underlying population structure is not adequately accounted for. To assess the nature of the population structure some kind of cluster analysis has to be carried out. We investigated the use of Self-Organizing Maps (SOMs) for this purpose. **Objectives:** The two main questions concern identification of an either discrete or an admixed population structure and identification of the number of subpopulations involved in forming the structured population under investigation. **Design and Methods:** We simulated data sets with different population models and included varying informative marker and map sizes. Sample sizes ranged from 200 to 2400 individuals. **Results:** We found that a discrete structure can easily be accessed by SOMs. A near to perfect assignment of individuals to their population of origin can be obtained. For an admixed population structure though, SOMs do not lead to reasonable results. Here, even the correct number of subpopulations involved can not be identified. **Conclusion:** In conclusion, SOMs can be an alternative to a model-based cluster analysis if the researcher assumes a discrete structure but should not be applied if an admixed structure is likely.

113 BREASTFEEDING AND NON-NUTRITIVE SUCKING HABITS EFFECTS ON MALOCCLUSION IN PRIMARY DENTITION

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Session: Pediatrics

Presentation: Oral.

Background: Little is known about the combined effect of duration of breastfeeding, sucking habits and malocclusion in the primary dentition. **Objectives:** We studied the association of breastfeeding and non-nutritive sucking habits on malocclusion on the primary dentition. **Design and Methods:** A cross-sectional study nested in a birth cohort was carried out in Pelotas, Brazil. A random sample of 359 children aged 6 was examined and their mothers interviewed. The Foster and Hamilton criteria were used to define anterior open bite (AOB) and posterior cross bite (PCB). Information regarding breastfeeding and non-nutritive sucking habits was collected from

birth to 6 years-old. Poisson's regression analysis was used. **Results:** Non-nutritive sucking habits between 12 months and 4 years of age (PR3.5[2.3;5.4]) and digital sucking at 6 years of age (PR1.5[1.1;2.1]) were risk factors for AOB. Breastfeeding for less than 9 months (PR7.6[1.5;39.5]) and the regular use of a pacifier between 12 months and 4 years of age (PR7.5[1.3;44.3]) were the risk factors for PCB. For PCB an interaction was identified between lack of breastfeeding and the use of a pacifier. **Conclusion:** Lack of breastfeeding and longer non-nutritive sucking habits during early childhood were the main risk factors for malocclusion in primary dentition.

118 PREDICTING CORONARY HEART DISEASE DEATHS IN BEIJING IN 2010: POTENTIAL EFFECTS OF RISK FACTOR TRENDS

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Session: Trends and Impact

Presentation: Oral.

Background: Recent, dramatic coronary heart disease (CHD) mortality increases in Beijing, can be mostly explained by adverse changes in risk factors, particularly total cholesterol and diabetes. It is important for policy making to predict the impact of future changes in risk factors on CHD mortality trends. **Objective:** To assess the potential impact of changes in risk factors on numbers of CHD deaths in Beijing from 1999 to 2010, to provide evidence for future CHD strategies. **Design:** The previously validated IMPACT model was used to estimate the CHD deaths expected in 2010 a) if recent risk factor trends continue or b) if levels of risk factors reduce. **Results:** Continuation of current risk factor trends will result in a 48% increase in CHD deaths by 2010, (almost half being attributable to increases in total cholesterol levels). Even optimistically assuming a 1% annual decrease in risk factors, CHD deaths would still rise by 21% because of population ageing. **Conclusion:** A substantial increase in CHD deaths in Beijing may be expected by 2010. This will reflect worsening risk factors compounded by demographic trends. Population ageing in China will play an important role in the future, irrespective of any improvements in risk factor profiles.

120 EXPLANATORY MODEL FOR AGE, SEX AND HELMET USE ON THE RISK OF DEATH IN CRASHES OF TWO-WHEELED MOTORIZED VEHICLES (TWMV)

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Session: Miscellaneous Methods

Presentation: Oral.

Background: We propose a model that breaks down the effect of age, sex and helmet use on risk of death in TWMV drivers involved in traffic crashes into two components: influence of these factors on intrinsic severity of the crash and on occupant (driver and passenger) vulnerability. **Objective:** To validate the theoretical model. **Design and Methods:** From the Spanish TC registry we selected the cohort of 50963 TWMV drivers involved in a TC with victims from 1993 to 2002 who were travelling with a passenger. Three Poisson regression models were constructed: two for each component of the model and another for joint effect. **Results:** For intrinsic severity of the crash, relative risks (RR) of death were 0.99 (0.98–1.00) for age, 0.67 (0.48–0.94) for female sex and 0.80 (0.64–1.01) for helmet use.

The values for occupant vulnerability were 1.03 (1.01–1.04), 1.15 (0.98–1.35), and 2.69 (2.13–3.39). The product of the two estimates for each variable was consistent with the RR in the model constructed for joint effect of both components. *Conclusions:* These results support the validity of the risk model. The effect of all three variables on risk of death differed depending on which of the two components of risk was considered.

121 FACTORS, WHICH PREDISPOSE WOMEN TO SMOKING RELAPSE AFTER DELIVERY

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Session: Smoking

Presentation: Oral.

Background: Since smoking cessation is more likely during pregnancy than at other times, interventions to maintain quitting postpartum may give the best opportunity for a long-time abstinence. It is still not clear what kind of advice or counseling should be given to help prevent the relapse postpartum. *Objectives:* To identify the factors, which predispose women to smoking relapse after delivery. *Design and Methods:* The cohort study was conducted in 2004 and 2005 in public maternity units in Lodz, Poland. The study population consisted of pregnant women between 32–36 weeks of pregnancy who have quit smoking no later than three months prior to participation in the study. Smoking status was verified using saliva cotinine level. Women were interviewed twice: during pregnancy and three months after delivery. *Results:* Within three months after delivery about half of women relapsed into smoking. The final model identified the following risk factors for smoking relapse: having partner and friends who smoke, quitting smoking in late pregnancy, and negative experiences after quitting smoking such as dissatisfaction with weight, nervousness, irritation, losing pleasure. *Conclusion:* This study advanced the knowledge of the factors that determine smoking relapse after delivery and provided preliminary data for future interventions.

133 AGT M235T POLYMORPHISM AND THE RISK OF MI AND STROKE AMONG PATIENTS ON ACE-INHIBITORS OR β -BLOCKERS

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Session: Pharmacology Epidemiology

Presentation: Oral.

Introduction: It remains difficult to predict the effect of an particular antihypertensive drug in an individual patient and pharmacogenetics might optimise this. *Objective:* To investigate whether the association between use of angiotensin converting enzyme (ACE)-inhibitors or β -blockers and the risk of stroke or myocardial infarction (MI) is modified by the T-allele of the angiotensinogen M235T polymorphism. *Methods:* Data were used from the Rotterdam Study, a population-based prospective cohort study. In total, 4093 subjects with hypertension were included from July 1st, 1991 onwards. Follow-up ended at the diagnosis of MI or stroke, death, or the end of study period (January 1st, 2002). The drug-gene interaction and the risk of MI/stroke was determined with a Cox proportional hazard model (adjusted for each drug class as time-dependent covariates). *Results:* The interaction between current use of ACE-inhibitors and the angiotensinogen M235T polymorphism increased the risk of MI (Synergy index (SI) = 4.00; 95% CI:1.32–12.11) and non-significant increased risk of stroke (SI = 1.83; 95% CI:0.95–3.54). No

interaction was found between current use of β -blockers and the AGT M235T polymorphism on the risk of MI or stroke. *Conclusion:* Subjects with at least one copy of the 235T allele of the AGT gene might have less benefit from ACE-inhibitor therapy.

136 METABOLIC SYNDROME (NEW IDF CRITERIA) PARTLY ACCOUNTS FOR ETHNIC DIFFERENCES IN PREVALENT CARDIOVASCULAR DISEASE

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Session: Metabolic Syndrome

Presentation: Oral.

Background: Cardiovascular disease is more prevalent in South Asian and Black populations than white populations. Metabolic syndrome is a risk factor for cardiovascular disease. *Objectives:* We assessed whether metabolic syndrome accounts for the ethnic differences in prevalent cardiovascular disease. *Design and Methods:* In total, 301 South Asians, 595 blacks and 489 ethnic Dutch, 35–60 years, participated in an interview and physical examination. Metabolic syndrome was defined by the National Cholesterol Education Programme (MS-NCEP) and the International Diabetes Federation (MS-IDF) criteria, cardiovascular disease by the Rose questionnaire. *Results:* The prevalence of metabolic syndrome was lower according to MS-NCEP than MS-IDF (MS-IDF: South Asians 48.7%, blacks 28.4%, ethnic Dutch 27.6%). In blacks, accounting for MS-IDF reduced the odds ratio for cardiovascular disease from 2.0 [1.2–3.4] to 1.0 [0.8–1.3]. Among South Asians, the odds ratio changed from 4.1 [2.4–6.9] to 1.5 [1.1–2.1] in those without MS-IDF and 1.9 [1.5–2.6] with MS-IDF. MS-NCEP had no effect. *Conclusion and Discussion:* Although cardiovascular disease was self-reported, we conclude that the higher prevalence of cardiovascular disease is partly accounted for by marked differences in the prevalence of metabolic syndrome. The MS-IDF criteria seem better for defining metabolic syndrome in ethnic groups than the MS-NCEP criteria.

137 SELENIUM AND CORONARY HEART DISEASE: A META-ANALYSIS OF OBSERVATIONAL STUDIES AND CLINICAL TRIALS

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Session: Meta Analysis

Presentation: Oral.

Background: Selenium is an essential trace mineral with antioxidant properties. *Objective:* To perform meta-analyses of the association of selenium levels with coronary heart disease (CHD) endpoints in observational studies and the efficacy of selenium supplements in preventing CHD in randomized controlled trials. *Methods:* We searched MEDLINE and the Cochrane Library from 1966 through 2005. Relative risk (RR) estimates were pooled using an inverse-variance weighted random-effects model. For observational studies reporting three or more categories of exposure we conducted a dose-response meta-analysis. *Results:* Twenty-five observational studies and 6 clinical trials met our inclusion criteria. The pooled RR comparing the highest to the lowest categories of selenium levels was 0.85 (95% confidence interval 0.74–0.99) in cohort studies and 0.43 (0.29–0.66) in case-control studies. In dose-response models, a 50% increase in selenium levels was associated with a 24% (7–38%) reduced risk of coronary events. In randomized trials, the RR comparing participants taking selenium supplements to those taking placebo was 0.90 (0.75–1.09). *Conclusion:*

Selenium levels were inversely associated with the risk of CHD in observational studies. The randomized trials findings are still inconclusive. These results require confirmation in randomised controlled trials. Currently, selenium supplements should not be recommended for cardiovascular prevention.

140 BAYESIAN PROPENSITY SCORE ANALYSIS FOR PHARMACOEPIDEMIOLOGIC STUDIES

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Session: Modeling

Presentation: Oral.

Background: Propensity score analysis (PSA) can be used to reduce confounding bias in pharmacoepidemiologic studies of the effectiveness and safety of drugs. However, confidence intervals may be falsely precise because PSA ignores uncertainty in the estimated propensity scores. *Objectives:* We propose a new statistical analysis technique called Bayesian propensity score analysis (BPSA). The method uses Bayesian modelling with the propensity score as a latent variable. Our question is: Does BPSA yield improved interval estimation of treatment effects compared to PSA? Our objective is: To implement BPSA using computer programs and investigate the performance of BPSA compared to PSA. *Design and Methods:* We investigated BPSA using Monte Carlo simulations. Synthetic datasets, of sample size $n = 250, 1000, 4000$, were simulated by computer. The datasets were analyzed using BPSA and PSA and we estimated the coverage probability of 80% credible intervals. Results The estimated coverage probabilities ranged from 78% to 84% for BPSA, and from 42% to 82% for PSA, with simulation standard errors less than 2%. *Conclusion:* The simulation results indicate that BPSA provides improved inferences for treatment effects compared to PSA, in the sense that interval estimators have the correct frequentist coverage levels under repeated sampling of the data.

144 ADDING KNOWN CF MUTATIONS OF MIGRANTS TO COMMON MUTATION PANELS LEADS TO A TEST-SENSITIVITY OF 64 PERCENT FOR MEDITERRANEANS

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Session: Genetics and genomics epidemiology

Presentation: Oral.

Background: In a multi-ethnic society, like the Netherlands, screening for Cystic Fibrosis (CF) could be offered to not only to Northern and Western Europeans, but also to Mediterraneans, as they have a substantial risk of being a CF-carrier too. *Objectives:* We studied whether the test-sensitivity of common CF gene mutation panels is appropriate for Mediterraneans when offering CF-carrier screening. *Methods:* In a survey among 373 European CF-centres, we asked whether and which mutations have been found among Turkish and Northafrican CF-patients. *Results:* Fifty-one different mutations have been found on 75.2% (95% CI: 70.4–80.0%) of CFTR alleles of patients ($n = 156$) with both parents from Turkey or North-Africa. The mean sensitivity of common CF-gene mutation panels to detect these mutations was 50.6% (95% CI: 45.0–56.2%), and differed significantly between Turkish and Northafrican people: 41.7% (95% CI: 34.7–48.6%) versus 66.4% (95% CI: 57.7–75.2%). Expansion of the mutation panels with Mediterranean mutations will reach a sensitivity of 63.6% (95% CI: 58.2–69.0). *Conclusion:* The low test-sensitivity of common CF-gene mutation panels for Mediterraneans raises

questions on whether and how to implement CF-screening in the Netherlands. *Discussion:* Is offering CF-carrier screening in a multi-ethnic society and informing Mediterranean people about the low test-sensitivity a suitable option?

145 WORKING CONDITION AND BIRTH WEIGHT IN A MULTI-CULTURAL COHORT: THE ABCD-STUDY

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Session: Birthweight

Presentation: Oral.

Background: Several factors associated with low birth weight, such as smoking and body mass index (BMI) do not explain all ethnic differences. This study investigates the effects of working conditions on birth weight among different ethnic groups. *Methods:* Questionnaire data, filled in 2 weeks after prenatal screening, was used from the Amsterdam Born Children and their Development (ABCD) study (all pregnant women in Amsterdam [7/1/03–7/3/04 ($n = 12,381$), response 8267 (67%)]. Ethnicity (country of birth) was dichotomised into Dutch and non-Dutch. Working conditions were: weekly working hours, weekly hours standing/walking, physical load and job-strain (Karasek-model). Only singleton deliveries with pregnancy duration = 37 weeks were included. *Results:* Although only 39.4% of the non-Dutch women worked during first trimester (79.6% of the Dutch women), they reported significantly more physical load (15.1% vs 9.0%), more hours standing/walking (10.6% vs 6.3%) and more high job-strain (10.2 vs 5.7). Linear regression revealed that only high job-strain lowered significantly birth weight (non-Dutch: 159 gram and Dutch: 75 gram). After adjusting for confounders (gender, parity, smoking, maternal length, maternal BMI and education), this was only significant in the non-Dutch group (112 vs. 30 gram). *Conclusion:* Job-strain has more effect on birth weight in non-Dutch compared to Dutch Women.

155 DESCENTRALIZATION: RECIPE FOR THE REEMERGENCE OF MALARIA IN PANAMA

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Session: Tropical diseases

Presentation: Oral.

Background: In 2004 Panama population was estimated in 3.2 million habitants, from which three millions lived in malaria endemic areas. Until January 26 1998 malaria control activities were accomplished under a vertical structure. *Objective:* To evaluate the evolution of malaria control in Panama, before and after the decentralization of the malaria program. *Design and Methods:* Average (standard deviation) of the program indexes are described for the last decades. The correlation between positive smears index and per capita cost of the program is analyze. *Results:* In the 1960's the average (standard deviation) positive smears index per 100 habitants was 3.3% (1.8); in the 1970's: 0.4% (0.5); in the 1980's: 0.13% (0.1); in the 1990's: 0.32% (0.2); and in the first five years of 2000: 1.7% (1.1). After the decentralization of the program was accomplished in 1998, the positive smears index increased 5.3 fold. The average per capita cost involved in malaria control activities per decade ranged between 0.19 y 1.25 US dollars and presented a determination coefficient of 0.42 in the reduction of the positive smears index. *Discussion:* The decentralization had significant detrimental implications in the control program capabilities.

162 IS LOW TUBERCULOSIS NOTIFICATION IN MOUNTAINOUS VIETNAM DUE TO LOW CASE DETECTION?

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Session: Tuberculosis

Presentation: Oral.

Background: Notification rates of new smear-positive tuberculosis in the central mountainous provinces (26/100,000 population) are considerably lower than in Vietnam in general (69/100,000 population). This study assessed whether this is explained by low case detection. *Objective:* To assess the prevalence and case detection of new smear-positive pulmonary tuberculosis among adults with a prolonged cough in central mountainous Vietnam. *Design and Methods:* A house-to-house survey of adults 15 years or older was carried out in 12 randomly selected districts in three mountainous provinces in central Vietnam in 2003. Three sputum specimens were microscopically examined of persons reporting a cough of 3 weeks or longer. *Results:* The survey included 68,946 persons with a response of 95%. A cough of 3 weeks or longer was reported by 1,298 (1.9% 95% CI 1.8–2.2) persons. Of these, 18 were sputum smear-positive of whom 2 had had anti-tuberculosis treatment. The prevalence of new smear-positive tuberculosis was 27/100,000 population (95% CI 11–44/100,000 population). The patient diagnostic rate was 1.6 per person-year, suggesting that the case notification rate as defined by WHO was 76%. *Conclusion:* Low tuberculosis notification rates in mountainous Vietnam are probably due to low tuberculosis incidence. Explanations for low incidence at high altitude need to be studied.

164 PREDICTION RULE FOR COMPLICATED URINARY TRACT INFECTIONS IN TYPE 2 DIABETES

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Session: Diabetes

Presentation: Oral.

Background: Although patients with type 2 diabetes (DM2) have an increased risk of urinary tract infections (UTIs), not much is known about predictors of a complicated course. *Objective:* This study aims to develop a prediction rule for complicated UTIs in DM2 patients in primary care. *Design and Methods:* We conducted a 12-month prospective cohort study, including DM2 patients aged 45 years or older from the Second Dutch National Survey of General Practice. The combined outcome measure was defined as the occurrence of recurrent cystitis, or an episode of acute pyelonephritis or prostatitis. *Results:* Of the 6,343 DM2 patients 46% was male and mean age was 67 years (SD 11). Incidence of the outcome was 3 per 100 patient years (n = 179). Predictors were age, male sex, number of physician contacts, incontinence of urine, cerebrovascular disease or dementia and renal disease. The area under the receiver-operating curve (AUC) was 0.77 (95% CI 0.73 to 0.80). Subgroup analyses for gender showed no differences. *Conclusion:* We were able to derive an accurate model to predict complicated UTIs in DM2 patients in primary care. The model may be used to tailor preventive measures to DM2 patients at high risk for developing complicated UTIs.

167 INCREASED EARLY POSTOPERATIVE MORTALITY AFTER ELECTIVE SURGERY

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Session: Prediction

Presentation: Oral.

There is an increased early postoperative mortality (operation risk) after elective surgery. This mortality is normally associated with cardiovascular events, such as deep venous thrombosis, pulmonary embolism, and ischemic heart diseases. Our objective was to quantify the magnitude of the increased mortality and how long the mortality after an operation persists. We focused on the early postoperative mortality after surgery for total knee and total hip replacements from the national registries in Australia and Norway, which cover more than 95% of all operations in the two nations. Only osteoarthritis patients between 50 and 80 years of age were included. A total of 244,275 patients remained for analyses. Smoothed intensity curves were calculated for the early postoperative period. Effects of risk factors were studied using a non-parametric proportional hazards model. The mortality was highest immediately after the operation (~1 deaths per 10,000 patients per day), and it decreased until the 3rd postoperative week. The mortality was virtually the same for both nations and both joints. Mortality increased with age and was higher for males than for females. A possible reduction of early postoperative mortality is plausible for the immediate postoperative period, and no longer than the 3rd postoperative week.

173 JOINT EFFECTS OF RISK FACTORS ON STROKE AND TRANSIENT ISCHEMIC ATTACK IN THE EPIC-POTSDAM STUDY

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Session: Cardiovascular Risk Factors

Presentation: Oral.

Background/Objectives: Single, modifiable risk factors for stroke have been extensively studied before, but their combined effects were rarely investigated. Aim of the present study was to assess single and joint effects of risk factors on stroke and transitory ischemic attack (TIA) incidence in the European Prospective Investigation into Cancer and Nutrition (EPIC)-Potsdam Study. *Methods:* Among 25538 participants aged 35–65 years at baseline 100 total stroke cases and 112 TIA cases occurred during 4.3 years of follow-up. Relative risks (RR) for stroke and TIA related to risk factors were estimated using Cox proportional hazard models. *Results:* After adjustment for potential confounders RR for ischemic stroke associated with hypertension was 2.32 (95% CI, 1.35–3.99) and for TIA 1.14 (95% CI 0.76–1.71). The highest RR for ischemic stroke (RR 5.12, 95% CI 1.49–17.6, p trend < 0.0001) and TIA (RR 3.08, 95% CI 1.00–9.44, p trend = 0.024) were observed among participants with 4 or 5 modifiable risk factors. 58.5% of ischemic strokes and 26.2% of TIA cases were attributable to hypertension, diabetes mellitus, high alcohol consumption, hyperlipidemia, and smoking. *Conclusion:* Almost 60% of ischemic stroke cases could be explained by classical modifiable risk factors. However, only one in four TIA cases was attributable to those risk factors.

177 MODELLING GENE-GENE- AND GENE-ENVIRONMENT-INTERACTIONS WITH DIRECTED GRAPHS

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Session: Genetics and genomics epidemiology

Presentation: Oral.

Background: The investigation of genetic factors is gaining importance in epidemiology. Most relevant from a public health perspective are complex diseases that are characterised by complex pathways involving gene-gene- and gene-environment-interactions. The identification of such pathways requires sophisticated statistical methods that are still in their infancy. Due to their ability in describing complex association structures, directed graphs may represent a suitable means for modelling complex causal pathways. **Objectives:** We present a study plan to investigate the appropriateness for using directed graphs for modelling complex pathways in association studies. **Design and Methods:** Graphical models and artificial neural networks will be investigated using simulation studies and real data and their advantages and disadvantages of the respective approaches summed up. Furthermore, it is planned to construct a hybrid model exploiting the strengths of either model type. **Results and conclusions:** The part of the project that concerns graphical models is being funded and ongoing. First results of a simulation study have been obtained and will be presented and discussed. A second project is currently being applied for. This shall cover the investigation of neural networks and the construction of the hybrid model. A decision is expected in the first half of 2006.

179 INEQUALITIES IN AVOIDABLE MORTALITY AMONG FOUR MIGRANT GROUPS IN THE NETHERLANDS

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Session: Socio-economic status and migrants

Presentation: Oral.

This study investigates variations in mortality from 'avoidable' causes among migrants in the Netherlands in comparison with the native Dutch population. Data were obtained from population and mortality registries in the period 1995–2000. We compared mortality rates for selected 'avoidable' conditions for Turkish, Moroccan, Surinamese and Antillean/Aruban groups to native Dutch. We found slightly elevated risk in total 'avoidable' mortality for migrant populations (RR = 1.13). Higher risks of death among migrants were observed from almost all infectious diseases (most RR > 3.00) and several chronic conditions including asthma, diabetes and cerebro-vascular disorders (most RR > 1.70). Migrant women experienced a higher risk of death from maternity-related conditions (RR = 3.37). Surinamese and Antillean/Aruban population had a higher mortality risk (RR = 1.65 and 1.31 respectively), while Turkish and Moroccans experienced a lower risk of death (RR = 0.93 and 0.77 respectively) from all 'avoidable' conditions compared to native Dutch. Control for demographic and socioeconomic factors explained a substantial part of ethnic differences in 'avoidable' mortality. **Conclusion:** Compared to native Dutch, total 'avoidable' mortality was slightly elevated for all migrants combined. Mortality risks varied greatly by cause of death and ethnicity. The substantial differences in mortality for a few 'avoidable' conditions suggest opportunities for improvement within specific areas of the healthcare system.

183 UNEVEN FEET LIMIT PERFORMANCE OF A WARBLOOD HORSE POPULATION

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Session: Veterinary Medicine

Presentation: Oral.

Warmblood horses scored by the jury as having uneven feet will never pass yearly selection sales of the Royal Dutch Warmblood Studbook (KWPN). To evaluate whether the undesired trait 'uneven feet' influences performance, databases of KWPN (n = 62234 horses) and KNHS (n = 16015 show jumpers, n = 24269 dressage horses) were linked through the unique number of each registered horse. Using a Proc GLM model of SAS was investigated whether uneven feet had effects on age at first start and highest performance level. Elite show jumpers with uneven feet start at 7.2 years and dressage horses 9.4 years of age, which is a significant difference (p < 0.05) with elite even feet horses (8.0 respectively 9.0 years). At their maximum level of performance horses with even feet linearly scored in show jumping 31.1 at regular and 116.8 at elite level (29.0 resp. 105.7 with uneven feet), while in dressage horses scores were 38.0 at regular and 139.7 at elite level (35.5 resp. 136.7 with uneven feet). The conformational trait 'uneven feet' appears to have a significant effect on age at first start, while horses with even feet demonstrate a higher maximal performance than horses with uneven feet.

184 IPD META-ANALYSES TO IDENTIFY SUBGROUPS THAT BENEFIT MORE OR LESS FROM TREATMENT: AN EXAMPLE WITH ANTIBIOTICS FOR AOM

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Session: Meta Analysis

Presentation: Oral.

Objectives: To identify children with Acute Otitis Media (AOM) who might benefit more from treatment with antibiotics. **Methods:** An individual patient data meta-analysis (IPDMA) on six randomized trials (n = 1643 children). To preclude multiple testing, we first performed a prognostic study in which predictors of poor outcome were identified. Subsequently, interactions between these predictors and treatment were studied by fixed effect logistic regression analyses. Only if a significant interaction term was found, stratified analyses were performed to quantify the effect in each subgroup. **Results:** Interactions were found for: age and bilateral AOM, and otorrhea. In children less than 2 years with bilateral AOM, a rate difference (RD) of -25% (95% CI -30; -20%) was found, whereas in children aged 2 years or older with unilateral AOM the RD was -4% (95% CI -6; -2%). In children with and without otorrhea the RD were -36% (95% CI -45; -27%), and -14% (95% CI -17%; -11%). **Conclusion:** Although there still are many areas in which IPDMA can be improved, using individual patient data appear to have many advantages especially in identifying subgroups. In our example, antibiotics are beneficial in children aged less than 2 years with bilateral AOM, and in children with otorrhea.

191 MINOR INJURIES INCREASE THE RISK OF VENOUS THROMBOSIS.

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Session: Cardiovascular

Presentation: Oral.

Major injuries, such as fractures, are known to increase the risk of venous thrombosis (VT). However, little is known of the risk caused by minor injuries, such as ankle sprains. We studied the risk of VT after minor injury in a population-based case-control study of risk factors for VT, the MEGA-study. Consecutive patients, enrolled via anticoagulation clinics, and control subjects, consisting both of partners of patients and randomly selected control subjects, were asked to participate and filled in a questionnaire. Participants with cancer, recent plastercasts, surgery or bedrest were excluded from the current analyses. 270 out of 2207 patients (12.2%) and 200 out of 4467 controls (4.5%) had suffered from a minor injury resulting in a three-fold increased risk of VT (odds ratio adjusted for age and sex 3.2; 95% confidence interval 2.7–3.9) compared to those without injury. The risk was highest in the first month after injury and was no longer increased after 3 months. Injuries located in the leg increased the risk five-fold, while those located in other body parts did not increase the risk. These results show that minor injuries in the leg increase the risk of VT. This effect appears to be temporary and mainly local.

192 INCIDENCE OF INFECTION BY THE DENGUE VIRUS IN A POPULATION OF CHILDREN IN BRAZIL

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Session: Tropical diseases

Presentation: Oral.

Introduction: In Southeast Asia, dengue was considered a childhood disease. In the Americas, this disease occurs predominantly in older age groups, indicating the need for studies to investigate the immune status of the child population, since the presence of antibodies against a serotype of this virus is a risk factor for dengue hemorrhagic fever (DHF). *Objective:* To evaluate the seroprevalence and seroincidence of dengue in children living in Salvador, Bahia, Brazil. *Methods:* A prospective study was carried out in a sample of children of 0–3 years by performing sequential serological surveys (IgG/dengue). *Results:* Seroprevalence in 625 children was 26.6%. A second survey (n = 289 seronegative children) detected an incidence of 33.2% and no difference was found between males and females or according to factors socioeconomic analyzed. *Conclusion and discussion:* These results show that, in Brazil, the dengue virus circulates actively in the initial years of life, indicating that children are also at great risk of developing DHF. It is possible that in this age group, dengue infections are mistaken for other febrile conditions, and that there are more inapparent infections in this age group. Therefore, epidemiological surveillance and medical care services should be aware of the risk of DHF in children.

195 MORE AND HIGHER STAGE TUMOURS IN WOMEN WHO DO NOT PARTICIPATE IN CERVICAL SCREENING

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Session: Screening 1

Presentation: Oral.

Since 1996, in the Comprehensive Cancer Centre Limburg (CCCL) region, all women aged 30–60 years are invited to participate in the

cervical cancer screening programme once every five years. We had the unique opportunity to link data from the cervical screening programme and the cancer registry. We studied individual Pap smear testing and participation in the screening programme preceding the diagnosis of cervical cancer. All invasive cases of cervical cancer of women aged 30–60 years in the period 1996–2003 were selected. Subgroups were based on results of the Pap smear and invitation and participation in the screening programme. Time interval between screening and detection of tumours was calculated. In 1996–2003, the non-response rate was 18%. In total, 211 invasive cervical cancer cases were detected of which 54 were screening and 32 interval carcinomas. In the group of women who were invited but did not participate and women who were not invited, respectively 64 and 61 tumours were detected. These tumours had a higher stage compared to screening carcinomas. In the CCCL region, more and higher stage tumours were found in women who did not participate in the screening compared to women with screening tumours.

200 EVALUATION OF PCR FOR INVESTIGATION OF CUTANEOUS TUBERCULOSIS EPIDEMIOLOGY

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Session: Tuberculosis

Presentation: Oral.

Background: PCR for Mycobacterium tuberculosis (MTB) has already proved to be a useful tool for the diagnosis and investigation of molecular epidemiology. *Objectives:* Evaluation of PCR assay for detection of Mycobacterium tuberculosis DNA as a diagnostic aid in cutaneous tuberculosis. *Design and Methods:* Thirty paraffin-embedded samples belonging to 28 patients were analyzed for acid fast bacilli. DNA was extracted from tissue sections and PCR was performed using specific primers based on IS 6110 repeated gene sequence of MTB. *Results:* Two of the tissue samples were positive for Acid fast bacilli (AFB). PCR was positive in eight samples from six patients. Amongst them, two were suspected of having lupus vulgaris confirmed histopathologically, whom their entire tests were positive. Accounting histopathology as gold standard, the sensitivity of PCR in this study was determined as 75%. *Conclusion:* From 8 cases of skin tuberculosis diagnosed by histopathology, 6 were positive by PCR technique, which shows the priority of previous method to molecular technique. *Discussion:* PCR assay can be used for rapid detection of MTB from cutaneous tuberculosis cases, particularly when staining for AFB is negative and there is a lack of growth on culture or when fresh material has not been collected for culture.

215 ALGORITHMS FOR CONVERTING HAWKSLEY RANDOM ZERO TO AUTOMATED OSCILLOMETRIC BLOOD PRESSURE VALUES AND VICE VERSA.

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Session: Cardiovascular

Presentation: Oral.

Background: Recent epidemiological studies used automated oscillometric blood pressure (AOD) devices that systematically measure higher blood pressure values than random zero sphygmomanometer devices (RZS) hampering the comparability of the blood pressure values between these studies. We applied both a random zero and an automated oscillometric blood pressure device

in a randomized order in an ongoing cohort study. *Objectives:* The aim of this analysis was to compare the blood pressure values by device and to develop a conversion algorithm for the estimation of blood pressure values from one device to the other. *Methods:* Within a randomized subset of 2365 subjects aged 45–75 years, each subject was measured three times by each device (Hawksley random zero and Omron HEM-705CP) in a randomized order. *Results:* The mean difference (AOD-RZS) between the devices was 3.9 mmHg and 2.6 mmHg for the systolic and diastolic blood pressure respectively. Linear regression models including age, sex, and blood pressure level can be used to convert RZS blood pressure values to AOD blood pressure values and vice versa. *Conclusions:* The results may help to better compare blood pressure values of epidemiological studies that used different blood pressure devices.

217 ARE THERE ETHNIC DIFFERENCES IN NEONATAL OUTCOME FOR VERY PRETERM BABIES? AN ITALIAN STUDY.

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Session: Pediatrics

Presentation: Oral.

Background: Ethnic inequalities in neonatal outcome among Very Preterm Babies have received little attention. *Objectives:* To compare neonatal outcome among Very Preterm Babies (VPBs) of Foreign-Born Mothers (FBMs) and Italian-Born Mothers. *Design and Methods:* The population study consisted of live births with < 32 wks' gestation in Lazio Region during 2003–2004 (n = 934). A form was used to collect relevant perinatal clinical data, as part of a European (MOSAIC) and Italian (ACTION) project. The main outcomes were mortality and a variable combining mortality and severe morbidity at discharge. The Cox proportional hazards and logistic regression models were used, respectively, for the two outcomes. *Results:* Twenty-two percent of VPBs were among FBMs. Comparing to control group, the percentage of babies below 28 weeks and plurality was statistically significant higher among babies of FBMs: 52% vs. 41.7 and 28.3% vs. 16.0%. Adjusting for potential confounders, no association for mortality among immigrant group was found, whereas a slightly excess of morbidity-mortality was observed (Odd Ratio, 1.36; 95% CIs 0.99–1.88). *Conclusions:* The high proportion of VPBs among FBMs and the slight excess observed in morbidity and mortality indicate the need to improve the health care delivery for the immigrant population.

218 REHOSPITALIZATION OF VERY PRETERM BABIES: AN ITALIAN ONE-YEAR FOLLOW-UP STUDY

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Session: Pediatrics

Presentation: Oral.

Background: High-risk newborns have excess mortality, morbidity and use of health services. *Objectives:* To describe re-hospitalizations after discharge from an Italian region. *Design and Methods:* The population study consisted of all births with < 32 weeks' gestation discharged alive from the twelve Neonatal Intensive Care Units in Lazio Region during 2003. The perinatal clinical data was collected as part of a European project (MOSAIC). We used the Regional Hospital Discharge Database to find hospital admissions within 12 months, using tax code for record linkage. Data were analyzed through logistic regression for re-hospitalization. *Results:* The study group included 361 children; among these, 111 (30.7%) were re-hospitalized; overall, 206 readmission were observed. The median total length of stay for re-admissions was 5 d. The two most common reasons for re-hospitalization were respiratory (37.8%)

and gastrointestinal (16.5%) disorders. The presence of a severe morbidity at discharge (Odd Ratio 2.03; 95% CIs 1.20–3.42) and male sex (Odd Ratio 1.97; 95% CIs 1.24–3.15) predicted re-hospitalization in multivariate model. *Conclusions:* Almost one out three preterm infants was re-hospitalized in the first 12 months. Re-admissions after initial hospitalization for a very preterm birth could be a sensitive indicator of quality of follow-up strategies in high risk newborns.

220 IS SELF-MEDICATION WITH ANTIBIOTICS IN EUROPE DRIVEN BY PRESCRIBED USE?

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Session: Pharmaco Epidemiology

Presentation: Oral.

Background: Self-medication with antibiotics may lead to inappropriate use and increase the risk of selection of resistant bacteria. In Europe the prevalence varies from 1/1000 to 210/1000 respondents. Self-medication may be triggered by experience with prescribed antibiotics. We investigated whether in European countries prescribed use was associated with self-medication with antibiotics. *Methods:* A population survey was conducted in 19 European countries with 15548 respondents completing the questionnaire. Multivariate logistic regression analysis was used to study the relationship between prescribed use and self-medication (both actual and intended) in general, for a specific symptom/disease or a specific antibiotic. *Results:* Prescribed use was associated with self-medication, with stronger effect in Northern/Western Europe (odds ratio 7.6, 95% CI 4.2–13.6) than in Southern (2.1, 1.2–3.6) and Eastern Europe (1.9, 1.3–2.7). Prescribing of a specific antibiotic increased the probability of self-medication with the same antibiotic. Prescribing for a specific symptom/disease increased the likelihood of self-medication for the same symptom/disease. The use of prescribed antibiotics and actual self-medication were both determinants of intended self-medication in general and for specific symptoms/diseases. *Conclusions:* Routine prescribing of antibiotics increases the risk of self-medication with antibiotics for similar ailments, both through the use of leftovers and buying antibiotics directly from pharmacies.

222 APPLICATION OF AMERICAN GUIDELINE CAN REDUCE CARDIOVASCULAR MORTALITY RISK IN DIALYSIS PATIENTS

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Session: Effects and Costs

Presentation: Oral.

Background: In 2003 the American National Kidney Foundation published a guideline based on opinion and observational studies which recommends tight control of serum calcium, phosphorus and calcium-phosphorus product levels in dialysis patients. *Objectives:* Within the context of this guideline, we explored associations of

these plasma concentrations with cardiovascular mortality risk in incident dialysis patients. *Design and Methods:* In NECOSAD, a prospective multi-centre cohort study in the Netherlands, we included 1629 consecutive patients new on haemodialysis or peritoneal dialysis between 1997 and 2004. Risks were estimated using adjusted time-dependent Cox regression models. *Results:* Mean age was 60 ± 15 years, 61% was male, and 64% was treated with haemodialysis. Cardiovascular mortality risk was significantly higher in haemodialysis patients (HR: 1.5; 95% CI: 1.1 to 2.1) and in peritoneal dialysis patients (HR: 2.4; 1.3 to 4.2) with elevated plasma phosphorus levels when compared to patients who met the target. In addition, having elevated plasma calcium-phosphorus product concentrations increased cardiovascular mortality risk in haemodialysis (HR: 1.5; 1.1 to 2.1) and in peritoneal dialysis patients (HR: 2.2; 1.3 to 3.8). *Conclusion:* Application of the current guideline in clinical practice is warranted since it reduces cardiovascular mortality risk in haemodialysis and peritoneal dialysis patients in the Netherlands.

224 SCREENING FOR PROSTATE CANCER IN HEREDITARY PROSTATE CANCER FAMILIES

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Session: Screening 2

Presentation: Oral.

Background: Urologists are increasingly confronted with requests for early detection of prostate cancer in men from hereditary prostate cancer (HPC) families. However, little is known about the benefit of early detection among men at increased risk. *Objectives:* We studied the effect of biennial screening with PSA in unaffected men from HPC families, aged 50–70 years, on surrogate endpoints (test and tumour characteristics). *Methods:* The Netherlands Foundation for the Detection of Hereditary Tumours holds information on approximately 140 HPC families. Here, 172 non-affected men from these families were included and invited for PSA testing every 2 years. We collected data on screening history and complications related to screening. *Results:* In the first round, serum PSA was elevated (3 ng/ml or greater) in 39 of 172 men screened (23%). Further diagnostic assessment revealed 14 patients with prostate cancer (8.1%). Compared to population-based prostate cancer screening trials, the referral rate is equal but the detection rate is twice as high. *Discussion:* In conclusion, the results of prostate cancer screening trials will not be directly applicable to screening in HPC families. The balance between costs, side-effects and potential benefits of screening when applied to a high-risk population will have to be assessed separately.

226 CONTROL OF OCCUPATIONAL TUBERCULOSIS AMONG HEALTH CARE WORKERS

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Session: Tuberculosis

Presentation: Oral.

Background: In industrialized countries occupational tuberculosis among health care workers (HCWs) is re-emerging as a public health priority. To prevent and control tuberculosis transmission in nosocomial settings, public health agencies have issued specific guidelines. Turin, the capital of the Piedmont region in Italy, is experiencing a worrying rise of tuberculosis incidence. Here, HCWs are increasingly exposed to the risk of nosocomial tuberculosis

transmission. *Objectives:* a) To estimate the sex- and age-adjusted annual rate of tuberculosis infection (ARTI) (per 100 person-years [%py]) among the HCWs, as indicated by tuberculin skin test conversion (TST) conversion, b) to identify occupational factors associated with significant variations in the ARTI, c) to investigate the efficacy of the regional preventive guidelines. *Design and Methods:* Multivariate survival analysis on TST conversion data from a dynamic cohort of 2185 HCWs in Turin, between 1998 and 2004. *Results:* The overall estimated ARTI was 2.4 (95% CI: 1.9–3.0) %py. The risk of TST conversion significantly differed among workplaces, occupations, and age of HCWs. The guidelines implementation was associated with an ARTI reductions of 1.35 (95% CI: 1.33–1.27) %py. *Conclusions:* We identify occupational risk categories for targeting surveillance and prevention measures and assessed the efficacy of the local guidelines.

227 FAMILY HISTORY OF BREAST CANCER AND COMPLIANCE WITH MAMMOGRAPHY. ISRAEL NATIONAL HEALTH SURVEY 2003

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Session: Screening 1

Presentation: Oral.

Background: A positive family history (FH) of breast cancer is an established risk factor for the disease. Screening for breast cancer in Israel is recommended annually for positive-FH women aged = 40 y and biennially for average-risk women aged 50–74 y. *Objective:* to assess the effect of having a positive breast cancer FH on performing screening mammography in Israeli women. *Methods:* A cross-sectional survey based on a random sample of the Israeli population. The study population consists of 1,605 women aged 40–74 y and telephone interviews were used. Logistic regression models identified variables associated with mammography performance. *Results:* A positive FH for breast cancer was reported by 153 (9.5%) participants. Performing a mammogram in the previous year was reported by 43.1% and 24.7% of the positive and negative FH subgroups, respectively ($p < 0.0001$). Rates increased with age. Among positive FH participants, being married was the only significant correlate for a mammogram in the previous year. *Conclusions:* Over 60% and around 55% of high-risk women aged 40–49 y and = 50 y, respectively, are inadequately screened for breast cancer. Screening rates are suboptimal in average-risk women too. *Discussion:* National efforts should concentrate on increasing awareness and breast cancer screening rates.

228 INFERTILITY, INFERTILITY TREATMENT AND BREAST CANCER RISK IN ISRAELI WOMEN

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Session: Cancer in Women

Presentation: Oral.

Background: Infertility treatments may be associated with increased breast cancer risk. Results so far have been inconclusive. *Objective:*

To evaluate the association between infertility, infertility treatments and breast cancer risk. *Methods:* A historical prospective cohort with 5,788 women who attended 5 Israeli infertility centers between 1964 and 1984. Their medical charts were abstracted. Breast cancer incidence was determined through linkage with the National Cancer Registry. Standardized incidence ratios (SIRs) and 95% confidence intervals were computed by comparing observed cancer rates to those expected in the general population. Additionally, in order to control for known risk factors, a case-control study nested within the cohort was carried out as well based on telephone interviews with breast cancer cases and controls matched by 1:2 ratio. *Results:* Compared to 115.2 expected breast cancer cases, 131 were observed (SIR = 1.1; non-significant). Risk for breast cancer was higher for women treated with clomiphene citrate (SIR = 1.4; 95% CI 1.0–1.8). Similar results were noted when treated and untreated women were compared, and when multivariate models were applied. In the nested case-control study, higher cycle index and treatment with clomiphene citrate were associated with significantly higher risk for breast cancer. *Conclusions:* Clomiphene citrate may be associated with higher breast cancer risk.

229 SMOKING INCREASES THE RISK OF VENOUS THROMBOSIS. RESULTS OF THE MEGA STUDY

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Session: Smoking

Presentation: Oral.

Smoking is a strong risk factor for arterial disease. Some consider smoking also as a risk factor for venous thrombosis, while the Results of studies investigating the relationship are inconsistent. Therefore, we evaluated smoking as a risk factor for venous thrombosis in the Multiple Environmental and Genetic Assessment of risk factors for venous thrombosis (MEGA) study, a large population-based case-control study. Consecutive patients with a first venous thrombosis were included from six anticoagulation clinics. Using a random-digit-dialing method a control group was recruited in the same geographical area. All participants completed a questionnaire including questions on smoking habits. Persons with known malignancies were excluded from the analyses, leading to a total of 4086 patients and 2567 controls. Current and former smoking resulted in a small increased risk of venous thrombosis (ORs adjusted for age, sex and BMI) (OR-current: 1.5 CI95: 1.3–1.7, OR-former: 1.2 CI95: 1.0–1.4). An increasing amount and duration of smoking was associated with an increase in risk. The highest risk was found among young (lowest tertile: 18 to 41 yrs) current smokers; twenty or more pack-years resulted in a 3.3-fold increased risk (CI95: 2.2–5.0). In conclusion, smoking results in a small increased risk of venous thrombosis, with the greatest relative effect among young heavy smokers.

235 A NESTED CASE-CONTROL STUDY OF LUNG CANCER AMONG SILICA EXPOSED WORKERS IN CHINA

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Session: Respiratory

Presentation: Oral.

Objective: To explore whether the observed association between silica exposure and lung cancer was confounded by exposure to other occupational carcinogens, we conducted a nested case-control study among a cohort of male workers in 29 Chinese mines and potteries. *Methods:* 511 lung cancer cases and 1879 matched controls were selected. Exposure to respirable silica as well as relevant occupational confounders were evaluated quantitatively

based on historical industrial hygiene data. The relationship between silica exposure and lung cancer mortality was analyzed by conditional logistic regression analysis adjusted for exposure to arsenic, polycyclic aromatic hydrocarbons (PAHs), radon, and smoking habit. *Results:* In a crude analysis adjusted for smoking only, a significant trend of increasing risk of lung cancer with exposure to silica was found for tin, copper/iron miners, and pottery workers. However, after the relevant occupational confounders were adjusted, no association can be observed between silica exposure and lung cancer mortality (pro mg/m³-year increase of silica exposure: OR = 1.01, 95% CI: 0.99 – 1.02). *Conclusion:* Our results suggest that, the observed excess risk of lung cancer among silica exposed Chinese workers is more likely due to exposure to other occupational carcinogens such as arsenic and PAHs rather than due to exposure to respirable silica.

237 PREVENTION OF DIABETES THROUGH LIFESTYLE INTERVENTIONS IS COST-EFFECTIVE

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Session: Effects and Costs

Presentation: Oral.

Background: Modelling studies have shown that lifestyle interventions for adults with a high risk of developing diabetes are cost-effective. *Objective:* To explore the cost-effectiveness of lifestyle interventions for adults with low or moderate risk of developing diabetes. *Design and Methods:* The short-term effects of both a community-based lifestyle program for the general population and a lifestyle intervention for obese adults on diabetes risk factors were estimated from international literature. Intervention costs were based on Dutch projects. The RIVM Chronic Diseases Model was used to estimate long-term health effects and disease costs. Cost-effectiveness was evaluated from a health care perspective with a time horizon of 70 years. *Results:* Intervention costs needed to prevent one case of diabetes in 20 years range from 1,000 to 5,000 euro for the community program and from 5,000 to 21,000 euro for the intervention for obese adults. Cost-effectiveness was 3,000 to 3,500 euro per quality adjusted life-year for the community program and 3,500 to 5,500 for the lifestyle intervention. *Conclusion:* A lifestyle intervention for obese adults produces larger individual health benefits than a community program but, on a population level, health gains are more expensively achieved. Both lifestyle interventions are cost-effective.

240 DIFFERENCES IN CONVENTIONAL CONTACT TRACING BY COUNTRY OF ORIGIN IN BARCELONA (2000–2004)

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Session: Tuberculosis

Presentation: Oral.

Background: In Barcelona, the proportion of foreign-born patients with tuberculosis (TB) raised from 12.8% in 1999 to 35.2% in 2004. *Objective:* To determine differences in infection by country of origin among contacts investigated by the TB Programme in Barcelona from 2000–2004. *Design and Methods:* Data were collected on 1198 cases and their 4638 contacts. Generalized Estimating Equations were used to obtain the risk of infection (OR and 95% CI) to account for potential correlation among contacts. *Results:* Contacts of foreign born cases were more infected than contacts of natives patients (41% vs 20%, p < 0.001) Factors related to infection among contacts of foreign cases were inner city residency (OR: 1.8, 95% CI: 1.2–2.8) and sputum smear positivity of the case

(OR:1.9,95% CI: 1.2–2.8) and male contact (OR:1.4,95% CI: 1.0–1.9), but not daily contact (OR:1.1,95% CI:0.8–1.6) Among natives cases, inner city residency (OR:2.0,95% CI: 1.2–3.2), sputum smear positivity (OR:2.2,95% CI: 1.5–3.1) and daily exposure (OR:2.3,95% CI: 1.7–2.9) increased risk of infection. *Conclusion:* Contacts immigrant TB cases have a higher risk of infection than contacts of natives cases, however daily exposure to an immigrant case was not associated with a greater risk of infection. This could be explained by the higher prevalence of TB infection in their country of origin.

245 A META-ANALYSIS OF THE ASSOCIATION BETWEEN BIRTHWEIGHT AND CORONARY HEART DISEASE

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Session: Birthweight

Presentation: Oral.

Background: An inverse association between birthweight and subsequent coronary heart disease (CHD) has been widely reported but has not been formally quantified. We therefore conducted a systematic review of the association between birthweight and CHD. *Design and Methods:* Seventeen studies including a total of 144,794 singletons that had reported quantitative or qualitative estimates of the association between birthweight and CHD by October 2005 were identified. Additional data from two unpublished studies of 3801 individuals were also included. In total, the analyses included data on 4210 non-fatal and 3308 fatal coronary heart disease events in 147,009 individuals. *Results:* The mean weighted estimate for the association between birthweight and CHD incidence was 0.84 (95% CI 0.81–0.88) per kg of birthweight. Overall, there was no significant heterogeneity between studies ($p = 0.09$) or evidence of publication bias (Begg test $p = 0.3$). Fifteen studies were able to adjust for some measure of socioeconomic position, but such adjustment did not materially influence the association: 0.85 (95% CI 0.81–0.90). *Discussion:* These findings are consistent with one kilogram higher birthweight being associated with 10–20% lower risk of subsequent CHD, but the causal nature of this association remains uncertain and its direct relevance to public health is likely to be small.

246 EXCESS RISK OF FATAL CORONARY HEART DISEASE ASSOCIATED WITH DIABETES IS GREATER IN WOMEN THAN IN MEN

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Session: Diabetes

Presentation: Oral.

Objective: Diabetes has been reported to be associated with a greater coronary hazard among women compared with men with diabetes. We quantified the coronary risk associated with diabetes by sex by conducting a meta-analysis of prospective cohort studies. *Methods:* Studies reporting estimates of the relative risk for fatal coronary heart disease (CHD) comparing those with and without diabetes, for both men and women were included. *Results:* 37 studies of type-2 diabetes and CHD among 447,064 individuals were identified. The summary relative risk for fatal CHD, diabetes versus not, was significantly greater among women than men: 3.50 (95% CI 2.70 to 4.53) versus 2.06 (95% CI 1.81 to 2.34), $p < 0.0001$. After excluding eight studies that had only adjusted for age, the sex risk difference was substantially reduced, but still highly significant

($p = 0.003$). The pooled ratio of the relative risks (female: male) from the 29 multiple-adjusted studies was 1.46 (95% CI 1.14 to 1.88). *Conclusions:* The relative risk for fatal CHD associated with diabetes is 50% higher in women than in men. More adverse cardiovascular risk profiles among women with diabetes, combined with possible treatment disparities that favour men, may explain the greater excess coronary risk associated with diabetes in women.

247 RAINFALL AS PREDICTOR OF MALARIA IN SRI LANKA

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Session: Miscellaneous Methods

Presentation: Oral.

Background: Malaria in Sri Lanka is strongly seasonal and often of epidemic nature. The incidence has lowered in recent years which increased the relevance of epidemic forecasting for better targeting control resources. *Objectives:* To establish the spatio/temporal correlation of precipitation and malaria incidence for use in forecasting. *Design and Methods:* De-trended long term (1972 – 2001) monthly time series of malaria incidence at district level were regressed in a Poisson regression against rainfall and temperature at several lags. *Results:* In the north and east of Sri Lanka, malaria seasonality is strongly positively correlated to rainfall seasonality (malaria lagging one or two months behind rainfall). However, in the south west, no significant (negative) correlation was found. Also in the hill country, no significant correlation was observed. *Conclusion and discussion:* Despite high correlations, it still remains to be explored to what extent rainfall can be used as a predictor (in time) of malaria. Observed correlation could simply be due to two cyclical seasonal patterns running in parallel, without causal relationship. E.g. similarly, strong correlations were found between temperature and malaria seasonality at 9 months time lag in northern districts, but causality is biologically implausible.

249 RESPIRATORY INFECTIONS AMONG CHILDREN IN PRIMARY CARE ATTRIBUTABLE TO INFLUENZA AND RESPIRATORY SYNCYTIAL VIRUS

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Session: Childrens health

Presentation: Oral.

Background: Few studies assessed the excess burden of acute respiratory tract infections (RTI) among preschool children in primary care during viral seasons. *Objective:* To determine the excess of RTI in preschool children in primary care attributable to influenza and respiratory syncytial virus (RSV). *Methods:* We performed a retrospective cohort study including all children aged 0–5 years registered in the database of the Utrecht general practitioner (GP) network. During 1998–2002 (18,801 child years), GPs recorded episodes of acute RTI. Surveillance data of influenza and RSV were obtained from the Weekly Sentinel System of the Dutch Working Group on Clinical Virology. Viral seasons and base-line period were defined as the weeks with respectively more than 5% and less than 1% of the yearly number of isolates of influenza or RSV. *Results:* On average 329 episodes of RTI were recorded per 1,000 child years (95% CI:321–337). Notably more consults for RTI occurred during influenza-season (RR 1.74, 95% CI:1.63–1.86) and RSV-season (RR 2.27, 95% CI:2.14–2.42) as compared to base-line period, especially in children younger than two years of age. *Conclusion:* Substantial excess rates of RTI were demonstrated among preschool children in primary care during influenza-season and particularly during RSV-season, notably in the younger age group.

255 GOOD PROGNOSIS FOR LONG-TERM SURVIVORS OF CANCER IN THE NETHERLANDS

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Session: Oncology

Presentation: Oral.

Background: Many cancer patients who have already survived some time want to know about their prognosis, given the pre-condition that they are still alive. *Objective:* We described and interpreted population-based conditional 5-year relative survival rates for cancer patients. *Methods:* The longstanding Eindhoven Cancer Registry collects data on all patients with newly diagnosed cancer in the southeastern part of the Netherlands (2.4 million inhabitants). Patients aged 25–74 years, diagnosed between 1985 and 2002 and followed up until January 1, 2005 were included. Conditional 5-year relative survival was computed for every additional year survived. *Results:* For many tumours conditional 5-year relative survival approached 90–100% after having survived 5–10 years. However, for stomach cancer and Hodgkin's lymphoma conditional 5-year relative survival increased to only 80–90% and for lung cancer and non-Hodgkin's lymphoma it did not exceed 70–80%. Initial differences in survival at diagnosis between age and stage groups disappeared after having survived for 5–10 years. *Conclusion:* Prognosis for patients with cancer changes with each year survived and for most tumours patients can be considered to be cured after a certain period of time. However, for stomach cancer, lymphoma's and lung cancer the odds for death remains elevated compared to the general population.

256 SELECTION BIAS IN META-ANALYSIS AND EFFECT ON 'EVIDENCE'.

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Session: Meta Analysis

Presentation: Oral.

Background: Systematic review with meta-analysis, now regarded as 'best evidence', depends on availability of primary trials and on completeness of review. Whilst reviewers have attempted to assess publication bias, relatively little attention has been given to selection bias by reviewers. *Method:* Systematic reviews of three cardiology treatments, that used common search terms, were compared for inclusion/exclusion of primary trials, pooled measures of principal outcomes and conclusions. *Results:* In one treatment, reviews included 18, 11, 19, 28, 27 and 35 trials. There was little overlap: of 35 trials in the last review only 5, 4, 6, 13 and 3 were included by others. Reported summary effects ranged from (most effective to least significant); mortality relative risk 0.29 (0.12, 0.70) in 4 trials to 0.96 (0.85, 1.09) in 23, and in one morbidity measure; standardised mean difference from 0.28 (0.10, 0.47) in 11 trials (822 patients) to 0.01 (–0.02, 0.04) in 10 (3960 patients). Reviewers' conclusions ranged from 'highly effective' to 'no evidence of effect'. *Conclusions:* These examples illustrate strong selection bias in published meta-analyses. Post hoc review contravenes one important principal of science 'first the hypothesis, then the test'. Selection bias by reviewers may affect 'evidence' more than does publication bias.

257 AGREEMENT BETWEEN PHYSICIAN REPORTS AND QUESTIONNAIRE HORMONE THERAPY DATA IN THE GERMAN CASE-CONTROL-STUDY MARIE

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Session: Pharmaco Epidemiology

Presentation: Oral.

In the context of a large population based German case control study examining the effects of hormone therapy (HT) on breast cancer risk, we conducted a validation study comparing HT prescription data with participants' self-reports for data quality assurance. Included were 224 cases and 225 controls aged 50–74 years, stratified by age and hormone use. Study participants provided detailed information on HT use to trained interviewers, while gynecologists provided prescription data via telephone or fax. Data were compared using proportion of agreement, kappa, intraclass correlation coefficient (ICC), and descriptive statistics. Overall agreement for ever/never use was 88.2%, while agreement for ever/never use by type of HT was 80.6%, 80.3%, and 90.5% for mono-estrogen, cyclical, and continuous combined therapy, respectively. ICC for duration was high (0.82 (95% CI: 0.77–0.85)), as were the ICCs for age at first and last use (0.88(95% CI: 0.85–0.91) and 0.98 (95% CI: 0.97–0.98), respectively). Comparison of exact brand name resulted in perfect agreement for 50.2% of participants, partial agreement for 29.3%, and no agreement for 20.7%. Higher education and shorter length of recall were associated with better agreement. Agreement was not differential by disease status. In conclusion, these self-reported HT data corresponded well with gynecologists' reports.

258 OUTBREAK DETECTION AND SECONDARY PREVENTION OF LEGIONNAIRES' DISEASE. A NATIONAL APPROACH.

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Session: Outbreaks

Presentation: Oral.

Background: Legionnaires' Disease (LD) is a pneumonia of low incidence. However, the impact of an outbreak can be substantial. *Objective:* To stop a possible outbreak at an early stage, an outbreak detection programme was installed in the Netherlands and evaluated after two years. *Design:* The programme was installed nationally and consisted of sampling and controlling of potential sources to which LD patients had been exposed during their incubation period. Potential sources were considered to be true sources of infection if two or more LD patients (cluster) had visited them, or if available patients' and environmental strains were indistinguishable by amplified fragment length polymorphism genotyping. All 39 municipal health services of the Netherlands participated in the study. The regional public health laboratory Kennemerland sampled potential sources and cultured samples for Legionella spp. *Results:* Rapid sampling and genotyping as well as cluster recognition helped to target control measures. Despite these measures, two small outbreaks were only stopped after renewal of the water system. The combination of genotyping and cluster recognition lead to 29 of 190 (15%) patient-source associations. *Conclusion and discussion:* Systematic sampling and cluster

recognition can contribute to LD outbreak detection and control. This programme can cost-effectively lead to secondary prevention.

267 BREAST CANCER RISK IN RELATION TO DIFFERENT TYPES OF HORMONE REPLACEMENT THERAPY: UPDATE OF THE E3N RESULTS

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Session: Cancer in Women

Presentation: Oral.

Background: A large number of hormone replacement therapies (HRTs) are available. Whether they impact differently the breast cancer risk is still unclear. *Objective:* To evaluate and compare the association between different HRTs and the breast cancer risk. *Design and Methods:* Relative risks (RR) of breast cancer were estimated in 69 647 postmenopausal women included in the French E3N cohort. During follow-up (1990–2002), 1896 primary invasive breast cancers occurred. *Results:* Compared with HRT never-use, use of estrogen alone was associated with a significant 1.4-fold increased risk. The association of estrogen-progestagen combinations with breast cancer risk varied significantly according to the type of progestagen: while there was no increase in risk with estrogen-progesterone (RR 1.0 [0.8–1.3]), estrogen-dydrogesterone was associated with a significant 1.3-fold increase, and estrogen combined with other synthetic progestins with a significant 1.8-fold increase. Although the latter type of HRT involves a variety of different progestins, their associations with breast cancer risk did not differ significantly from one another. RRs did not vary significantly according to the route of estrogen administration (oral or transdermal/percutaneous). *Conclusion and discussion:* Progesterone rather than synthetic progestins may be preferred when an opposed estrogen therapy is to be prescribed. Additional results on estrogen-progesterone are needed.

269 TREATMENT-RELATED RISK FACTORS FOR PREMATURE MENOPAUSE FOLLOWING HODGKIN'S LYMPHOMA.

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Session: Cancer in Women

Presentation: Oral.

Background: Although survival of Hodgkin's lymphoma (HL) is high (>85%), treatment may cause long-term side-effects like premature menopause. *Objectives:* To assess therapy-related risk factors for premature menopause (age <40) following HL. *Design and Methods:* We conducted a cohort-study among 387 female 5-year HL-survivors, aged <31 at diagnose and treated between 1965 and 1995. Patients were followed from first treatment until June 2001, menopause, death, or age 40. Cumulative dose of various chemotherapeutic agents as well as radiation fields were studied as risk factors for premature menopause. Cox-regression was used to adjust for age, year of treatment, smoking, BMI, and oral contraceptive-use. *Results:* After a median follow-up of 11.4 years, 130 (34%) women reached premature menopause. Overall 20 women (5%) were treated with chemotherapy only, 115 (30%) with radiotherapy only and 252 (65%) with both radio- and chemotherapy. Exposure to procarbazine (HR 7.0 [2.6–19]), cyclophosphamide (HR 3.6 [2.1–5.9]) and irradiation of the ovaries (HR 5.8 [3.6–9.4]) were associated with significant increased risks for premature menopause. For procarbazine a dose-response relation was observed. Procarbazine-use has decreased over time. *Conclusion:* To decrease the risk for premature menopause after HL, procarbazine and cyclophosphamide exposure should be minimized and ovarian irradiation should be avoided.

272 ENVIRONMENTAL EXPOSURE INCREASES DRAMATICALLY THE RISK OF MESOTHELIOMA IN AN ASBESTOS MANUFACTURING AREA

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Session: Respiratory

Presentation: Oral.

Background: Casale is an Italian town where a large asbestos cement plant was active for decades. Previous studies found increased risk for mesothelioma in residents, suggesting a decreasing spatial trend with distance from the plant. *Objective:* To analyse the spatial variation of risk in Casale and the surrounding area (~100,000 inhabitants) focussing on non-occupationally exposed individuals. *Design/methods:* Population-based case-control study including pleural mesotheliomas diagnosed between 1987 and 1993. Information on the 97 cases and 250 controls comprised lifelong residential and occupational history of subjects and their relatives. Nonparametric tests of clustering were used to evaluate spatial aggregation. Parametric spatial models based on distance between the longest-lasting subject residence (excluding the last 20 years before diagnosis) and the source enabled estimation of risk gradient. *Results:* Mesothelioma risk appeared higher in an area of roughly 9–11 km radius from the source. Spatial clustering was statistically significant ($p = 0.003$) and several clusters of cases were identified within Casale. Risk was highly related to the distance from the source; the best fitting model was the exponential decay with threshold. *Conclusion/discussion:* Asbestos pollution has increased dramatically the risk of mesothelioma in the area around Casale. Risk decreases slowly with the square of distance from the plant.

274 MONITORING SEASONAL VARIATIONS OF MALARIA IN A LOW TRANSMISSION AREA IN TANZANIA.

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Session: Tropical diseases

Presentation: Oral.

Malaria control programmes targeting malaria transmission from man to mosquito can have a large impact of malaria morbidity and mortality. To successfully interrupt transmission, a thorough understanding of disease and transmission parameters is essential. Our objective was to map malaria transmission and analyse micro-environmental factors influencing this transmission in order to select high risk areas where transmission reducing interventions can be introduced. Each house in the village Msitu-wa-Tembo was mapped and censused. Transmission intensity was estimated from weekly mosquito catches. Malaria cases identified through passive case detection were mapped by residence using GIS software and the incidence of cases by season and distance to river were calculated. The distribution of malaria cases showed a clear seasonal pattern with the majority of cases during the rainy season (chi-square = 62.3, $p < 0.001$). Living further away from the river ($p = 0.04$) was the most notable independent protective factor for malaria infection. Transmission intensity was estimated at 3.4 (95% CI 0.7 – 9.9) infectious bites per person per year. We show that malaria in the study area is restricted to a short transmission season. Spatial clustering of cases indicates that interventions should be planned in the area closest to the river, prior and during the rainy season.

278 VACCINATION OF ELDERS AGAINST INFLUENZA IN BRAZIL REDUCES THE BURDEN OF DISEASE AND INEQUALITIES IN HEALTH

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Session: Vaccination

Presentation: Oral.

Background: The effectiveness of influenza vaccination of elders has been subject of some dispute. Its impact on health inequalities also demands epidemiological assessments, as health interventions may affect early and most intensely better-off social strata. *Objectives:* To compare pneumonia and influenza (P&I) mortality of elders (aged 65 or more years old) before and after the onset of a large-scale scheme of vaccination in Sao Paulo, Brazil. *Methods:* Official information on deaths and population allowed the study of P&I mortality at the inner-city area level. Rates related to the period 1998 to 2002, during which vaccination coverage ranked higher than 60% of elders were compared with figures related to the precedent period (1993–1997). The appraisal of mortality decrease used a geo-referred model for regression analysis. *Results:* Overall P&I mortality reduced 26.3% after vaccination. Also the number of outbreaks, the excess of deaths during epidemic weeks, and the proportional P&I mortality ratio reduced significantly after vaccination. Besides having higher prior levels of P&I deaths, deprived areas of the city presented a higher proportional decrease of mortality. *Conclusion:* Influenza vaccination contributed for an overall reduction of P&I mortality, while reducing the gap in the experience of disease among social strata.

285 ALCOHOL AND DISTINCT PATHWAYS TO COLORECTAL CANCER

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Session: Oncology

Presentation: Oral.

Background: Alcohol's first metabolite, acetaldehyde, may trigger aberrations in DNA which predispose to developing colorectal cancer (CRC) through several distinct pathways. Our objective was to study associations between alcohol consumption and the risk of CRC, according to two pathways characterized by mutations in APC and K-ras genes, and absence of hMLH1 expression. *Methods:* In the Netherlands Cohort Study, 120,852 men and women, aged 55–69 years, completed a questionnaire on risk factors for cancer in 1986. Case-cohort analyses were conducted using 575 CRC cases with complete data after 7.3 years of follow-up, excluding the first 2.3 years. Gender-specific adjusted incidence rate ratios (RR) and 95% confidence intervals (CI) were estimated. *Results:* Neither total alcohol, nor beer, wine or liquor consumption was clearly associated with the risk of colorectal tumors lacking hMLH1 expression or harboring a truncating APC mutation and/or an activating K-ras mutation. In men and women, total alcohol consumption above 30 g/day was associated with an increased risk of CRC harboring a truncating APC and/or activating K-ras mutation, though not statistically significant. (RR:1.37 (95% CI: 0.8–2.5) in men, RR: 1.88 (95% CI: 0.8–4.6) in women). In conclusion, alcohol consumption is not involved in the studied pathways leading to CRC.

286 IDENTIFICATION OF SOCIAL GROUPS AT RISK OF SMOKING IN 11 EUROPEAN COUNTRIES: LOOKING BEYOND EDUCATIONAL LEVEL

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Session: Smoking

Presentation: Oral.

Background: Educational level is commonly used to identify social groups with increased prevalence of smoking. Other indicators of socioeconomic status (SES) might however be more discriminatory. *Objective:* This study examines to what extent smoking behaviour is related to other SES indicators, such as labour market position and financial situation. *Methods:* Data derived from the European Household Panel, which includes data on smoking for 11 European countries. We selected data for 101,312 respondents aged 25–60 years. The association between SES indicators and smoking prevalence was examined through logistic regression analyses. *Results:* Preliminary results show that, in univariate analysis, all selected SES indicators were associated with smoking. Higher rates of smoking in lower social groups were observed in all countries, except for women in some Mediterranean countries. In multivariate analyses, education retained an independent effect on smoking. No strong effect was observed for labour market position (occupational class, employment status) or for income. However, smoking prevalence was strongly related to economic deprivation and housing tenure. *Conclusion:* These results suggest that different aspects of people's SES affect their smoking behaviour. Interventions that aim to tackle smoking among high-risk groups should identify risk groups in terms of both education and material deprivation.

290 INTRA-NATIONAL VARIATION IN TRENDS IN OVERWEIGHT AND LEISURE TIME PHYSICAL ACTIVITIES IN THE NETHERLANDS SINCE 1980

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Session: Metabolic Syndrome

Presentation: Oral.

Objective: We investigated time trends in overweight and leisure time physical activities (LTPA) in The Netherlands since 1980. Intra-national differences were examined stratified for sex, age and urbanisation degree. *Design and Methods:* We used a random sample from the Health Interview Survey of about 140 000 respondents, aged 20-to-69 years. Self-reported data on weight, height and demographic characteristics were gathered through interviews (yearly) and data on LTPA were collected by self-administered questionnaires (1990–97, 2001–04). Linear regression was performed for trend analyses. *Results:* During 1981–2004, mean Body Mass Index (BMI) increased by 1.0 kg/m² (P = 0.001). Trends were similar across sex and urbanisation degrees. In 20-to-39 year old women, mean BMI increased more (1.7 kg/m²; P = 0.05) than in older women. Concerning LTPA, no clear trend was observed during 1990–97 and 2001–04. However, in 2001–04, 20-to-39 year old women spent ~ 150 min/wk less on LTPA compared to older women, while this difference was smaller during 1990–97. *Conclusions:* Mean BMI increased more in younger women, which is consistent with the observation that this group spent less time on LTPA during recent years. Although the overall increase in overweight could not be explained by trends in LTPA, physical activity interventions should target the younger women.

298 UPDATING PREDICTION RULES: SIMPLE METHODS GIVE PROMISING RESULTS

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Session: Prediction

Presentation: Oral.

Background: Prediction rules combine patient characteristics and test results to predict the presence of an outcome (diagnosis) or the occurrence of an outcome (prognosis) for individual patients. When prediction rules show poor performance in new patients, investigators often develop a new rule, ignoring the prior information available in the original rule. Recently, several updating methods have been proposed that consider both prior information and information of the new patients. *Objectives:* To compare five updating methods (that vary in extensiveness) for an existing prediction rule that preoperatively predicts the risk of severe postoperative pain (SPP). *Design and Methods:* The rule was tested and updated on a validation set of 752 new surgical patients (274 (36%) with SPP). We estimated the discrimination (the ability to discriminate between patients with and without SPP) and calibration (the agreement between the predicted risks and observed frequencies of SPP) of the five updated rules in 283 other patients (100 (35%) with SPP). *Results:* Simple updating methods showed similar effects on calibration and discrimination as the more complex methods. *Discussion and conclusion:* When the performance of a prediction rule in new patients is poor, a simple updating method can be applied to improve the predictive accuracy.

305 MORTALITY IN A COHORT OF MIGRANTS FROM THE FORMER SOVIET UNION TO GERMANY

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Session: Socio-economic status and migrants

Presentation: Oral.

About two million ethnic Germans (Aussiedler) have resettled in Germany since 1990. Analyses with a yet incomplete follow-up of a cohort of Aussiedler showed a different mortality compared to Russia and Germany. *Objectives:* We investigated whether the mortality pattern changed after a complete follow-up and whether residential mobility after resettlement has an effect on mortality. We established a cohort of 34393 Aussiedler who moved to Germany between 1990 and 2001. We calculated SMR for all causes, external causes, cardiovascular deaths and cancer in comparison to German rates. *Results:* With a complete follow-up, the cohort accumulated 248798 person years. Overall, 1726 deaths were observed (SMR 0.85, 95% CI: 0.81–0.89). SMR for all external causes, all cancer and cardiovascular deaths were 0.84, 0.85 and 0.79, respectively. Increased number of moves within Germany was associated with increased mortality. *Conclusion and Discussion:* The mortality in the cohort is surprisingly low, in particular for cardiovascular deaths. There is a mortality disadvantage from external causes and for some selected cancers. This disadvantage is however not as large as would be expected if Aussiedler were representative of the general population in FSU countries. Mobility as an indicator for a lesser integration will be discussed.

309 AGE AND TUMOR SIZE ARE PREDICTORS OF LYMPH NODE INVOLVEMENT IN SCREEN-DETECTED BREAST CANCERS

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Session: Oncology

Presentation: Oral.

Background: Breast Cancer Screening (BCS) provides an opportunity to analyze the relationship between lymph node involvement (LN), the most important prognostic factor, and biological and time dependent characteristics. *Objective:* Our aim was to assess those characteristics that are associated with LN in a cohort of screen-detected breast cancers. *Methods:* Observational population study of all invasive cancers within stage I-IIIa detected from 1996 to 2002 through a BCS Program in Catalonia (Spain). Age, tumor size, histological grade, LN status and screening episode (prevalent or incident) were analyzed. Pearson Chi-square or Fisher's exact test, Mann-Whitney test and stratified analyses were applied, as well as multiple logistic regression techniques. *Results:* Twenty nine percent (95% CI 21.7–35.4%) out of 168 invasive cancers had LN and 37.5% were prevalent cancers. In the bivariate analysis, tumor size and age were strongly associated to LN ($p < 0.010$) while grade was related to LN only in incident cancers ($p = 0.027$). Grade was associated with tumor size ($p = 0.005$) and with screening episode ($p = 0.013$). Adjusting for screening episode and grade, age and tumor size were independent predictors of LN. *Conclusion:* In conclusion, age and tumor size are independent predictors of LN. Grade emerges as an important biological factor in incident cancers.

315 SMOKING AND COGNITIVE FUNCTION IN THE ELDERLY

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Session: Smoking

Presentation: Oral.

Background: The evidence regarding the association between smoking and cognitive function in the elderly is inconsistent. *Objectives:* To examine the association between smoking and cognitive function in the elderly. *Design and Methods:* In 2003, all 740 participants of a population-based cohort study aged 70 years or older were eligible for a telephone interview on cognitive function using validated instruments, such as the Telephone Interview of Cognitive Status (TICS). Information on smoking history was available from questionnaires administered in 2002. We estimated the odds ratios (OR) of cognitive impairment (below 25th percentile) and the corresponding 95% confidence intervals (CI) by means of logistic regression adjusting for age, sex, alcohol consumption, body mass index, physical exercise, educational level, depressive symptoms and co-morbidity. *Results:* In total, 465 participants were interviewed and had complete information on smoking history. Former smokers had a lower prevalence of cognitive impairment (OR_{adjusted} = 0.61; 95% CI: 0.33–1.13) compared with never smokers, but not current smokers (OR_{adjusted} = 0.96; 95% CI: 0.34–2.70). *Conclusion:* There is no association between current smoking and cognitive impairment in the elderly. *Discussion:* The lack of association between current smoking and cognitive impairment is in line with previous non-prospective studies. The inverse association with former smoking might be due to smoking cessation associated with co-morbidities.

316 OVERALL ASSESSMENT OF LATE EFFECTS IN A DUTCH COHORT OF LONG-TERM SURVIVORS OF CHILDHOOD CANCER

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Session: Oncology

Presentation: Oral.

Background: Many studies have reported late effects of treatment in childhood cancer survivors. Most studies, however, focused on only one late effect or suffered from incomplete follow-up. *Objectives:* We assessed the total burden of adverse events (AE), and determined treatment-related risk factors for the development of various AEs. *Methods:* The study cohort included 1362 5-year survivors, treated in the Emma Children's Hospital AMC in the Netherlands between 1966–1996. AEs were graded for severity by one reviewer according to the Common Terminology Criteria Adverse Events version 3.0. *Results:* Medical follow-up data were complete for 94.3% 5-year survivors. Median follow-up time was 18 years. Almost 75% of survivors had one or more AEs, and 24.6% had even 5 or more AEs. Of patients treated with RT alone, 55% had a high or severe burden of AEs, while this was only 15% in patients treated with CT alone. Radiotherapy (RT) was associated with the highest risk to develop an AE of at least grade 2, and was also associated with a greater risk to develop a medium to severe AE burden. *Conclusions:* Survivors are at increased risk for many health problems that may adversely affect their quality of life and long-term survival.

327 IMPETUS IMPLEMENTATION OF DIABETES SHARED CARE GUIDELINES

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Session: Diabetes

Presentation: Oral.

Background: Studies in the past demonstrated that multifaceted interventions could enhance the quality of diabetes care. However many of these studies showed methodological flaws as no corrections were made for patient case-mix and clustering or a non-randomised design was used. *Objective:* To assess the efficacy of a multifaceted intervention to implement diabetes shared care guidelines. *Methods:* A cluster randomised controlled trial of 2097 patients with type 2 diabetes was conducted at 40 general practises (n = 1714) and one outpatient clinic (n = 383). In primary care, facilitators analysed barriers to change, introduced structured care, gave feedback and trained practice staff. At the outpatient clinic, an abstract of the guidelines was distributed. Case-mix differences such as duration of diabetes, education, co-morbidity and quality of life were taken into account. *Results:* In primary care, more patients in the intervention group were seen on a three monthly basis (85.7% versus 69.4%, p < 0.001) and their HbA1c was statistically significant lower (6.9 ± 0.9 versus 7.0 ± 0.1, p < 0.01). However, significance was lost after correction for case-mix (p = 0.6). Change in blood pressure and total cholesterol was not significant. We were unable to demonstrate any change in secondary care. *Conclusion:* Multifaceted implementation did improve the process of care but left cardiovascular risk unchanged.

334 A DIAGNOSTIC META-ANALYSIS OF MR MAMMOGRAPHY: DETECTING HETEROGENEITY BETWEEN INDIVIDUAL STUDIES.

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Session: Screening 1

Presentation: Oral.

Background: We have performed a meta-analysis including 43 studies on the diagnostic accuracy of MR-mammography in patients referred for further characterization of suspicious breast lesions. Using the bivariate diagnostic meta-analysis approach we found an overall sensitivity and specificity of 0.90 and 0.73, respectively. The aim of the present analysis was to detect heterogeneity between studies. *Materials and Methods:* Seventeen study and population characteristics were separately included in the bivariate model to compare sensitivity and specificity between strata of the characteristics. *Results:* Both sensitivity and specificity were higher in studies performed in the United States compared to non-United States studies. Both estimates were also higher if two criteria for malignancy were used instead of one or three. Only specificity was affected by the prevalence of cancer: specificity was highest in studies with the lowest prevalence of cancer in the study population. Furthermore, specificity was affected by whether the radiologist was blinded for clinical information: specificity was higher if there was no blinding. *Conclusions:* Variation between studies was notably present across studies in country of publication, the number of criteria for malignancy, the prevalence of cancer and whether the observers were blinded for clinical information.

336 GENE-DIET INTERACTIONS IN THE REGULATION OF CHOLESTEROL METABOLISM AND RISK OF ACUTE CORONARY SYNDROME

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Session: Eye Session

Presentation: Oral.

Objective: The aim of this project is to explore variation in three candidate genes involved in cholesterol metabolism in relation to risk of acute coronary syndrome (ACS), and to investigate whether dietary fat intake modifies inherent genetic risks. *Study population:* A case-cohort study is designed within the Danish 'Diet, Cancer and Health' study population. A total of 1500 cases of ACS have been identified among 57,053 men and women who participated in a baseline examination between 1993–1997 when they were aged 50–64 years. A random sample of 1500 participants will serve as 'control' population. *Exposures:* All participants have filled out a detailed 192-item food frequency questionnaire and a questionnaire concerning lifestyle factors. Participants were asked to provide a blood sample. Candidate genes for ACS have been selected among those involved in cholesterol transport (ATP-binding cassette transporter A1, Cholesterol-ester transfer protein, and acyl-CoA:cholesterol acyltransferase 2). Five single nucleotide polymorphisms (SNPs) will be genotyped within each gene. SNPs will be selected among those with demonstrated functional importance, as assessed in public databases. *Methods:* Statistical analyses of association between genetic variation in the three chosen genes and risk of ACS. Explorations of methods to evaluate biological interaction will be of particular focus.

339 SERUM C-REACTIVE PROTEIN AND DIABETES; RESULTS FROM THE ROTTERDAM STUDY AND A META-ANALYSIS

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Session: Diabetes

Presentation: Oral.

Background: C-reactive protein (CRP) has been shown to be associated with type 2 diabetes mellitus. It is unclear whether the association is completely explained by obesity. *Objective:* To examine whether CRP is associated with diabetes independent of obesity. *Design and Methods:* We measured baseline characteristics and serum CRP in 5954 non-diabetic participants of the Rotterdam Study and followed them for a mean of 9.8 years. Cox regression was used to estimate the hazard ratio. In addition, we performed a meta-analysis on 10 published studies. *Results:* During follow-up, 658 participants developed diabetes. Serum CRP was significantly and positively associated with the risk to develop diabetes. The risk estimates attenuated but remained statistically significant after adjustment for obesity indexes. Age, sex and body mass index (BMI) adjusted hazard ratios (95% CI) were 1.90(1.43–2.52) for the fourth quartile, 1.66(1.25–2.20) for the third quartile, and 1.51(1.16–2.01) for the second quartile of serum CRP compared to the first quartile. In the meta-analysis, weighed age, sex, and BMI adjusted risk ratio was 1.44(1.16–1.78), for the highest CRP category (> 2.6 mg/l) compared to the reference category (< 0.5 mg/l). *Conclusion:* Our findings shows that the association of serum CRP with diabetes is independent of obesity.

340 IMPLEMENTATION OF NEW SCREENING MODES TO A MAMMOGRAPHY PROGRAM

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Session: Screening 1

Presentation: Oral.

Background: Effectiveness of screening can be predicted by episode sensitivity, which is estimated by interval cancers following a screen. Full-field digital or CR plate mammography are increasingly introduced into mammography screening. *Objectives:* To develop a design to compare performance and validity between screen-film and digital mammography in a breast cancer screening program. *Methods:* Interval cancer incidence was estimated by linking 721 000 screening visits from 1991–2001 at an individual level to the files of the Cancer Registry in Finland. These data was used to estimate the study size requirements for analyzing differences in episode sensitivity between screen-film and digital mammography in a randomized setting. *Results:* The two-year cumulative incidence of interval cancers per 100 000 screening visits was estimated to be 300. To allow the maximum acceptable difference in the episode sensitivity between screen-film and digital arm to be 20% (80% power, 0.05 significance level, 1:1 randomization ratio, 85% attendance rate), approximately 240 000 women need to be invited. *Conclusion:* Only fairly large differences in the episode sensitivity can be explored within a single randomized study. In order to reduce the degree of non-inferiority between the screen-film and digital mammography, meta-analyses or pooled analyses with other randomized data are needed.

343 TRENDS IN MORTALITY OF LITHUANIAN URBAN AND RURAL POPULATIONS OVER THE PERIOD OF SOCIO-ECONOMIC TRANSITION

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Session: Socio-economic status and migrants

Presentation: Oral.

Background: Tackling urban/rural inequalities in health has been identified as a substantial challenge in reforming health system in Lithuania. *Objectives:* To assess mortality trends from major causes of death of the Lithuanian urban and rural populations throughout the period of 1994–2004. *Methods:* Information on major causes of death (cardiovascular diseases, cancers, external causes, and respiratory diseases) of Lithuanian urban and rural populations from 1994 to 2004 was obtained from Lithuanian Department of Statistics. Mortality rates were age-standardized, using European standard. Mortality trends were explored using the logarithmic regression analysis. *Results:* Overall mortality of Lithuanian urban and rural populations was decreasing statistically significantly during 1994–2004. More considerable decrease was observed in urban areas where mortality declined by 1.7% per year in males and 2.2% in females, compare to the decline by 1.2% in males and 1.7% in females in rural areas. The most notable urban/rural differences in mortality trends with unfavourable situation in rural areas were estimated in mortality from stroke, breast cancer in females, and external causes of death (traffic accidents and suicides). *Conclusion:* Inequalities in mortality of Lithuanian urban and rural populations point at the need to develop new approaches and directions of action in rural health policy.

345 LOW INTAKE OF OMEGA-3 FATTY ACIDS: A COMMON CAUSE FOR DEPRESSION AND CARDIOVASCULAR MORTALITY?

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Session: Cardiovascular Risk Factors

Presentation: Oral.

Background: Recent studies indicate that depression plays an important role in the occurrence of cardiovascular diseases (CVD). Underlying mechanisms are not well understood. *Objectives:* We investigated whether low intake of omega-3 fatty acids (FAs) is a common cause for depression and CVD. *Methods:* The Zutphen Elderly Study is a prospective cohort study conducted in the Netherlands. Depressive symptoms were measured with the Zung Scale in 332 men, aged 70–90 years, and free from CVD and diabetes in 1990. Dietary factors were assessed with a cross-check dietary history method. *Results:* Compared to high intake (= 156.2 mg/d), low intake (< 58.9 mg/d) of omega-3 FAs, adjusted for demographics and CVD risk factors, was associated with an increased risk of depressive symptoms (OR 2.20; 95% CI 1.06–4.58) at baseline, and non-significantly with 10-year CVD mortality (HR 1.14; 95% CI 0.67–1.95). The adjusted HR for a 5-point increase in depressive symptoms for CVD mortality was 1.13 (95% CI 1.01–1.26), and did not change after additional adjustment for omega-3 FAs. *Conclusion:* Low intake of omega-3 FAs may increase the risk of depression. Our results, however, do not support the hypothesis that low intake of omega-3 FAs explains the relation between depression and increased risk of CVD.

346 NUT AND SEED INTAKE IS INVERSELY ASSOCIATED WITH METABOLIC SYNDROME IN CORONARY PATIENTS

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Session: Metabolic Syndrome

Presentation: Oral.

Background: During the last decades the incidence of metabolic syndrome has risen dramatically. Several studies have shown beneficial effects of nut and seed intake on components of this syndrome. The relationship with prevalence of metabolic syndrome has not yet been examined. *Objectives:* We studied the relation between nut and seed intake and metabolic syndrome in coronary patients. *Design and Methods:* Presence of metabolic syndrome (according to International Diabetes Federation definition) was assessed in 904 stable myocardial infarction patients (77% men) aged 60–80 years, as part of the Alpha Omega Trial. Dietary data were collected by food-frequency questionnaire. *Results:* The prevalence of metabolic syndrome was 42%. Median nut and seed intake was 3.82 g/day (interquartile range, 1.53–8.33 g/day). Intake of nuts and seeds was inversely associated with the metabolic syndrome (prevalence ratio: 0.84; 95% confidence interval: 0.59–1.19, for > 10 g/day versus < 1 g/day), after adjustment for age, gender, dietary and lifestyle factors. The prevalence of metabolic syndrome was 31% lower ($p = 0.050$) in men with a high nut and seed intake compared to men with a low intake, after adjustment for confounders. *Conclusion and discussion:* Intake of nuts and seeds may reduce the risk of metabolic syndrome in stable coronary patients.

349 ESTIMATING ADDITIVE INTERACTION BETWEEN CONTINUOUS DETERMINANTS

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Session: Modeling

Presentation: Oral.

Background: In epidemiology, interaction is often assessed by adding a product term to the regression model. In linear regression the regression coefficient of the product term refers to additive interaction. However, in logistic regression it refers to multiplicative interaction. Rothman has argued that interaction as departure from additivity better reflects biological interaction. Hosmer and Lemeshow presented a method to quantify additive interaction and its confidence interval (CI) between two dichotomous determinants using logistic regression. *Objective:* Our objective was to provide an estimation method for additive interaction between continuous determinants. *Methods and Results:* From the abovementioned literature we derived the formulas to quantify additive interaction and its CI between one continuous and one dichotomous determinant and between two continuous determinants using logistic regression. To illustrate the theory, data of the Utrecht Health Project were used, with age and body mass index as risk factors for diastolic blood pressure. *Conclusions:* This paper will help epidemiologists to estimate interaction as departure from additivity. To facilitate its use, we developed a spreadsheet, which will become freely available at our website.

351 JOINT SPATIAL VARIATION OF ACUTE MYOCARDIAL INFARCTIONS AND ISCHEMIC STROKE IN FINLAND, 1991–2003

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Session: Modeling

Presentation: Oral.

Background: The incidences of acute myocardial infarction (AMI) and ischemic stroke (IS) in Finland have been among highest in the

world. Accurate geo-referenced epidemiological data in Finland provides unique possibilities for ecological studies using Bayesian spatial models. *Objectives:* Examine sex-specific geographical patterns and temporal variation of AMI and IS. *Design and Methods:* AMI ($n = 205,213$) and IS ($n = 115,383$) cases in 1991–2003 in Finland, localized at the time of diagnosis according to the place of residence address using map coordinates. Cases and population were aggregated to 10 km x 10 km grids. Full Bayesian conditional autoregressive models (CAR) were used for studying the geographic incidence patterns. *Results:* The incidence patterns of AMI and IS showed on average 70% (95% CI 50–85%) common geographic variation and significantly the rest of the variation was disease specific. There was no significant difference between sexes. The patterns of high-risk areas have persisted over the years and the pattern of IS showed more annual random fluctuations. *Conclusions:* Although AMI and IS showed rather similar and temporally stable patterns, significant part of the spatial variation was disease specific. Further studies are needed for finding the reasons for disease specific geographical variation.

359 SOCIO-ECONOMIC INEQUALITIES IN THE USE OF HEALTH SERVICES VARY IN RELATION TO THE PATIENT'S DISEASE

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Session: Socio-economic status and migrants

Presentation: Oral.

Most studies addressing socio-economic inequalities in health services use fail to take into account the disease the patient is suffering from. The objective of this study is to compare possible socio-economic differences in the use of ambulatory care between 2 distinct patient groups: diabetics and patients with migraine. Data was obtained from the Belgian health interview surveys 1997, 2001 and 2004. In total 4381 patients with self reported diabetes or migraine were identified. In a multilevel analysis the probability of a contact and the volume of contacts with the general practitioner and/or the specialist were studied for both groups in relation to educational attainment and income. Adjustment was made for age, sex, subjective health and comorbidity at the individual level, and doctors' density and region at district level. No socio-economic differences were observed among diabetic patients. Among patients with migraine we observed a higher probability of specialist contacts in higher income groups (OR 1.6; 95% CI 1.1–2.4) and higher educated persons (OR 1.6; 95% CI 1.2–2.2), while lower educated persons tend to report more visits with the general practitioner. To correctly interpret socio-economic differences in the use of health services there is need to take into account information on the patient's type of disease.

368 INFLUENCE OF DESIGN AND ANALYTICAL FACTORS ON CONFOUNDING IN NON-RANDOMISED INFLUENZA VACCINE EFFECT STUDIES

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Session: Vaccination

Presentation: Oral.

Background: The suitability of non-randomised studies to assess effects of interventions has been debated for a long time, mainly because of the risk of confounding by indication. Choices in the design and analytical phase of non-randomised studies determine the ability to control for such confounding, but have not been systematically compared yet. *Objective:* The aim of the study will be

to quantify the role of design and analytical factors on confounding in non-randomised studies. *Design and Methods:* A meta-regression analysis will be conducted, based on 41 cohort and 8 case-control studies analysed in a recent Cochrane review on influenza vaccine effectiveness against hospitalisation or death in the elderly. Primary outcome will be the degree of confounding as measured by the difference between the reported effect estimate (odds ratios or relative risks) and the best available estimate (Nichol, unpublished data). Design factors that will be considered include study design, matching, restriction and availability of confounders. Statistical techniques that will be evaluated include multivariate regression analysis with adjustment for confounders, stratification and, if available, propensity scores. **RESULTS** The results will be used to develop a generic guideline with recommendations how to prevent confounding by indication in non-randomised effect studies.

371 INCREASED RESPIRATORY SYMPTOM PREVALENCE IN FISHERMEN WHO PARTICIPATED IN THE CLEAN-UP OF THE PRESTIGE OIL SPILL

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Session: Respiratory

Presentation: Oral.

The wreckage of the oil tanker Prestige in November 2002 produced a heavy contamination of the coast of Galicia (Spain). We studied relationships between participation in clean-up work and respiratory symptoms in local fishermen. Questionnaires including details of clean-up activities and respiratory symptoms were distributed among associates of 38 fishermen's cooperatives, with postal and telephone follow-up. Statistical associations were evaluated using multiple logistic regression analyses, adjusted for sex, age, and smoking status. Between January 2004 and February 2005, information was obtained from 6,780 fishermen (response rate 76%). Sixty-three percent had participated in clean-up operations. Lower respiratory tract symptoms were more prevalent in clean-up workers (odds ratio (OR) 1.73; 95% confidence interval 1.54–1.94). The risk increased when the number of exposed days, number of hours per day, or number of activities increased (p for linear trend <0.0001). The excess risk decreased when more time had elapsed since last exposure (OR 1.45 (1.28–1.64) and 2.16 (1.91–2.45) for more and less than 17 months, respectively; p for interaction <0.05). In conclusion, fishermen who participated in the clean-up work of the Prestige oil spill show a prolonged dose-dependent increased prevalence of respiratory symptoms one to two years after the beginning of the spill.

381 A RANDOMISED TRIAL ON HPV TESTING FOR PRIMARY CERVICAL SCREENING: DATA AT RECRUITMENT.

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Session: Screening 2

Presentation: Oral.

Background. HPV testing has been proposed for cervical cancer screening. *Objectives:* Evaluating the protection provided by HPV testing at long intervals vs. cytology every third year. *Methods:* Randomised controlled trial Conventional arm: conventional cytology. Experimental arm: in phase 1 HPV and liquid-based

cytology. HPV-positive cytology-negatives referred for colposcopy if age 35–60, for repeat after one year if age 25–34. In phase 2 HPV alone. Positives referred for colposcopy independently of age. Endpoint: histologically confirmed Cervical Intraepithelial Neoplasia (CIN) grade 2 or more. *Results:* Overall 94,323 women were randomised. Preliminary data at recruitment are presented. Overall, among women aged 35–60 years relative sensitivity of HPV versus conventional cytology was 1.43 (95% c.i. 1.09–1.88) and relative Positive Predictive (PPV) value was 0.59 (95% c.i. 0.45–0.76). Among women aged 25–34 relative sensitivity of HPV vs. conventional cytology was 1.58 (95% c.i. 1.03–2.44) during phase 1 but 3.79 (95% c.i. 2.26–6.35) during phase 2. *Conclusions:* HPV testing increased cross-sectional sensitivity, but reduced PPV. In younger women data suggest that direct referral of HPV-positives to colposcopy results in relevant overdiagnosis of regressive lesions. Measuring detection rate of CIN at the following screening round will allow studying overdiagnosis and the possibility of longer screening intervals.

388 PLASMA ENTEROLIGNANS ARE ASSOCIATED WITH LOWER COLORECTAL ADENOMA RISK

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Session: Oncology

Presentation: Oral.

Background: Plant lignans are present in foods such as whole grains, seeds, fruits and vegetables, and beverages. They are converted by intestinal bacteria into the enterolignans, enterodiols and enterolactone. Enterolignans possess several biological activities whereby they may influence carcinogenesis. *Objective:* To study the association between plasma enterolignans and the risk of colorectal adenomas. Colorectal adenomas are considered to be precursors of colorectal cancer. *Design and Method:* The case-control study included 532 cases with at least one histologically confirmed colorectal adenoma and 503 controls with no history of any type of adenoma. Associations between plasma enterolignans and colorectal adenomas were analyzed by logistic regression. *Results:* Associations were stronger for incident than for prevalent cases. When only incident cases (n = 262) were included, high compared to low enterodiols plasma concentrations were associated with a reduction in colorectal adenoma risk after adjustment for confounding variables. Enterodiols odds ratios (95% CI) were 1.00, 0.69 (0.42–1.13), 0.60 (0.37–0.99), 0.53 (0.32–0.88) with a significant trend (p = 0.01) through the quartiles. Although enterolactone plasma concentrations were 10-fold higher, enterolactone's reduction in risk was not statistically significant (p for trend = 0.09). *Conclusion:* We observed a substantial reduction in colorectal adenoma risk among subjects with high plasma concentrations of enterolignans, in particular enterodiols.

390 ENVIRONMENTAL TOBACCO SMOKE EXPOSURE MAY INCREASE THE RISK OF TUBERCULOSIS INFECTION IN CHILDREN.

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Session: Children's health

Presentation: Oral.

Background: Smoking is a risk factor for tuberculosis diseases. Recently the question was raised if smoking also increases the risk of tuberculosis infection. *Objective:* To assess the influence of

environmental tobacco smoke (ETS) exposure in the household on tuberculosis infection in children. *Design and Methods:* A cross-sectional community survey was done and information on 1373 children was obtained. Tuberculosis infection was determined with a tuberculin skin test (TST) (cut-off 10 mm) and information on smoking habits was obtained from all adult household members. Univariate and multivariate analyses were performed, and odds ratio (OR) was adjusted for the presence of a TB contact in the household, crowding and age of the child. *Results:* ETS was a risk factor for tuberculosis infection (OR: 1.92, 95% CI: 1.27 – 2.92) when all children with a TST read between two and five days were included. The adjusted OR was 1.64 (95% CI: 1.03 – 2.61). In dwellings where a tuberculosis case had lived the association was strongest (adjusted OR 5.67, 95% CI: 1.26 – 25.65). *Conclusion and discussion:* ETS exposure seems to be a risk factor for tuberculosis infection in children. This is of great concern considering the high prevalence of smoking and tuberculosis in developing countries.

402 ASSESSMENT OF A PRIORITIZATION SYSTEM FOR WAITING LISTS FOR KNEE REPLACEMENT THROUGH A SIMULATION MODEL

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Session: Prediction

Presentation: Oral.

Background and Objective: To implement a simulation model to analyze demand and waiting time (WT) for knee arthroplasty and to compare a waiting list prioritization system (PS) with the usual first-in, first-out (FIFO) system. *Methods:* Parameters for the conceptual model were estimated using administrative data and specific studies. A discrete-event simulation model was implemented to perform 5-year simulations. The benefit of applying the PS was calculated as the difference in WT weighted by priority score between disciplines, for all cases who entered the waiting list. *Results:* WT for patients operated under the FIFO discipline was homogeneous (Standard Deviation (SD) between 1.3–1.7 months) with mean 18.7. WT under the PS had higher variability (SD between 10.6–11.6) and was positively skewed, with mean 7.6 months and 10% of cases over 24 months. When WT was weighted by priority score, the PS saved 6.6 months (95% CI 6.4–6.9) on average. The PS was favorable for patients with priority scores over 50, but penalized those with lower priority scores. *Conclusions:* Management of the waiting list for knee arthroplasty through a PS was globally more effective than through FIFO, although patients with low priority scores were penalized with higher waiting times.

406 A VALIDATION STUDY OF PROBABILISTIC LINKAGE OF ADMISSIONS OF NEWBORNS

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Session: Miscellaneous Methods

Presentation: Oral.

Background: We developed a probabilistic linkage procedure for the linking of readmissions of newborns from the Dutch Paediatrician Registry (LNR). 15% of all newborns (30.000) are admitted to a neonatal ward. The main problems were the unknown number of readmissions per child and the identification of admissions of twins. *Objective:* To validate our linking procedure in a double

blinded study. *Design and Methods:* A random sample of admissions from 200 children from the linked file has been validated by the caregivers, using the original medical records. *Results:* Response was 97%. For admissions of singletons the linkage contained no errors except for the small uncertain area of the linkage. For admissions of multiple births a high error rate was found. *Conclusion and Discussion:* We successfully linked the admissions of singleton newborns with the developed probabilistic linking algorithm. For multiple births we did not succeed in constructing valid admission histories due to too low data quality of twin membership variables. Validation showed alternative solutions for linking twin admissions. We strongly recommend that linkage results should always be externally validated.

408 INVESTIGATION OF AN OUTBREAK OF SALMONELLA TYPHIMURIUM DT104 IN THE NETHERLANDS, SEPTEMBER–NOVEMBER 2005

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Session: Outbreaks

Presentation: Oral.

Background: Salmonella Typhimurium definitive phage type (DT) 104 has emerged as an important pathogen in the last two decades. A 10-fold increase in cases in the Netherlands during September–November 2005 prompted an outbreak investigation. *Objective:* The objective was to identify the source of infection to enable preventive measures. *Methods:* A subset of outbreak isolates was typed by molecular means. In a case-control study, cases (n = 109) and matched population controls (n = 411) were invited to complete self-administered questionnaires. *Results:* The molecular typing corroborated the clonality of the isolates. The molecular type was similar to that of a recent S. Typhimurium DT104 outbreak in Denmark associated with imported beef. The incriminated shipment was traced after having been distributed sequentially through several EU member states. Sampling of the beef identified S. Typhimurium DT104 of the same molecular type as the outbreak isolates. Cases were more likely than controls to have eaten a particular raw beef product. *Conclusions:* Our preliminary results are consistent with this S. Typhimurium DT104 outbreak being caused by contaminated beef. Our findings underline the importance of European collaboration, traceability of consumer products and a need for timely intervention into distribution chains.

417 HEAVY METALS IN UMBILICAL CORD BLOOD IN MADRID (SPAIN). THE BIO-MADRID STUDY.

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Session: Molecular Epidemiology

Presentation: Oral.

Background: Heavy-metals may affect newborns. Some of them are presenting tobacco smoke. *Objectives:* To estimate cord-blood levels of mercury, arsenic, lead and cadmium in newborns in 2 areas in Madrid, and to assess the relationship with maternal tobacco exposure. *Design and Methods:* BIO-MADRID study obtained 115 cord-blood samples from recruited trios (mother/father/newborn). Cold-vapor atomic absorption spectrophotometry

(AAS) was used to measure mercury and graphite-furnace AAS for the other metals. Mothers answered a questionnaire including tobacco exposure. Median, means and standard errors were calculated and logistic regression used to estimate OR. *Results:* Median levels for mercury and lead were 7.5 mg/L and 13.7 mg/L. Arsenic and cadmium were undetectable in 82% and 47 % of samples. Preliminary analysis showed a significant association of maternal tobacco exposure and levels of arsenic (OR:3.59;95% CI:1.11–11.55), cadmium (OR:2.24;95% CI:1.04–4.79), and lead (OR:3.83;95% CI:1.41–10.36). Smoking in pregnancy was associated to Arsenic (OR:3.90;95% CI:1.17–12.96), while passive exposure was more related to lead (OR:3.61;95% CI:1.26–4.79) and cadmium (OR:2.06;95% CI:0.91–4.97). *Conclusion:* Madrid newborns have high cord-blood levels of mercury. Tobacco exposure in pregnancy might increase levels of arsenic, cadmium and lead. *Discussion:* Tobacco exposure during pregnancy in Madrid (58%) is an important issue. High mercury levels could reflect high fish consumption in Spanish diet. Supported by: FIS-PI040777

419 PROBABILISTIC RECORD LINKAGE FOR THE INTEGRATED SURVEILLANCE OF THE ROAD TRAFFIC ACCIDENT

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Session: Miscellaneous Methods

Presentation: Oral.

Background: Road traffic accidents (RTA) are the leading cause of death for young. RTA Police reports provide no health information other than the number of deaths and injured, while health databases have no information on the accident dynamics. The integration of the two databases would allow to better describe the phenomenon. Nevertheless, the absence of common identification variables through the lists makes the deterministic record linkage (RL) impossible. *Objective:* To test feasibility of a probabilistic RL between RTA and health information when personal identifiers are lacking. *Methods:* Health information came from the RTA Integrated Surveillance for the year 2000. It integrates data from ED visits, Hospital discharges and deaths certificates. A deterministic RL was performed with 149 police reports, where the name and age of deceased were present. Results of the deterministic RL were then used as gold standard to evaluate the performance of the probabilistic one. *Results:* The deterministic RL resulted in 141 (94.6%) linked records. The probabilistic RL, where the name was omitted, was capable to correctly identify 130 (87.2%). *Conclusions:* Performance of the probabilistic RL was good. Further work is needed to develop strategies for the use of this approach in the complete datasets.

422 THE PREDICTIVE VALUE OF VARIOUS SOCIOECONOMIC INDICATORS FOR OVERWEIGHT AND OBESITY

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Session: Obesity

Presentation: Oral.

Background: Overweight constitutes a major public health problem. The prevalence of overweight is unequally distributed between socioeconomic groups. Risk group identification, therefore, may enhance the efficiency of interventions. *Objectives:* To identify which socioeconomic variable best predicts overweight in European populations: education, occupation or income. *Design:* European Community Household Panel data were obtained for 9 countries (N = 52,855). Overweight was defined as a Body Mass Index ≥ 25 kg/m². Uni- and multivariate logistic regression

analyses were employed to predict overweight in relationship to socioeconomic indicators. *Results:* Major socioeconomic differences in overweight were observed, especially for women. For both sexes, a low educational attainment was the strongest predictor of overweight. After control for confounders and the other socioeconomic predictors, the income gradient was either absent or positive (men) or negative (women) in most countries. Similar patterns were found for occupational level. For women, inequalities in overweight were generally greater in Southern European countries. Conversely, for men, differences were generally greater in other European countries. *Conclusion:* Across Europe, educational attainment most strongly predicts overweight. Therefore, obesity interventions should target adults and children with lower levels of education.

429 CLINICAL VARIABLES ARE POOR PREDICTORS OF BLOOD PRESSURE CONTROL

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Session: Prediction

Presentation: Oral.

Background: despite efforts the number of hypertensive patients with good blood pressure (BP) control is currently very low. *Objectives:* to develop a clinical prediction rule to forecast the impact of health care interventions on hypertension control. *Design and Methods:* historical cohort of patients. They were divided into 1049 (training set) and 297 (validation set). Clinical and health services profile variables were collected by clinical record abstraction. Model was developed by logistic regression analysis and evaluated by Hosmer-Lemeshow test (H&L) and area under ROC curve (AUC ROC) for accuracy and validation. Prospective validation is not yet faced. *Results:* BMI, OR 1.029, IC 95% 1.00–1.05; pulse pressure, OR 1.01, IC95% 1.00–1.02; > 6 M.D. visits/year, OR 0.74, IC95% 0.56–0.96; were identified as predictive variables. H&L goodness of fit test, $p > 0.08$. Model accuracy AUC ROC 0.58, IC95% 0.55–0.62. Validation AUC ROC was 0.60, IC95% 0.54–0.67. *Conclusion:* Clinical and health services use information yield a poor prognostic capacity about the hypertensive patient control. Information on patients compliance, life style and genetic profile could be of crucial interest for the successful care of health chronic conditions

435 FUTURE BURDEN OF CHRONIC DISEASES (2005–2025): THE EFFECT OF AGEING AND INCREASING PREVALENCE OF OVERWEIGHT.

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Session: Trends and Impact

Presentation: Oral.

Background: Because incidence and prevalence of most chronic diseases rise with age, their burden will increase in ageing populations. We report the increase in prevalence of myocardial infarction (MI), stroke (CVA), diabetes type II (DM) and COPD based on the demographic changes in the Netherlands. In addition, for MI and DM the effect of a rise in overweight was calculated. *Methods:* Calculations were made for the period 2005–2025 with a dynamic multi-state transition model and demographic projections of the CBS. *Results:* Based on ageing alone, between 2005 and 2025 prevalence of DM will rise from 550.000 to 870.000 (+ 58%), prevalence of MI from 310.000 to 365.000 (+ 18%), stroke prevalence from 185.000 to 290.000 (+ 57%) and COPD prevalence from

455.000 to 540.000 (+19%). A continuation of the Dutch (rising) trend in overweight prevalence would in 2025 lead to about 940.000 diabetics (+70%). A trend resulting in American levels would lead to over 1 million diabetics (+90%), while the impact on MI was much smaller: about 375.000 (+20%) in 2025. *Conclusion:* the burden of chronic disease will substantially increase in the near future. A rising prevalence of overweight has an impact especially on the future prevalence of diabetes

439 THE EFFECTS OF PARENTAL EXPOSURE TO ENVIRONMENTAL ENDOCRINE DISRUPTORS ON REPRODUCTIVE HEALTH IN MALE OFFSPRING.

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Session: Eye Session

Presentation: Oral.

Background: There has been increasing concern about the effects of Environmental Endocrine Disruptors (EEDs) on human reproductive health. EEDs include various industrial chemicals, as well as dietary phyto-estrogens. Intra-uterine exposures to EEDs are hypothesized to disturb normal foetal development of male reproductive organs and specifically, to increase the risk of cryptorchidism, hypospadias, testicular cancer, and a reduced sperm quality in offspring. *Objective:* To study the associations between maternal and paternal exposures to EEDs and the risks of cryptorchidism, hypospadias, testicular cancer and reduced sperm quality. *Design and Methods:* These associations are studied using a case-referent design. In the first phase of the study, we collected questionnaire data of the parents of 231 cases with cryptorchidism, 329 cases with hypospadias and 742 referent children. In the second phase, we will focus on the health effects at adult age: testicular cancer and reduced sperm quality. In both phases, we will attempt to estimate the total EED exposure of parents of cases and referents at time of pregnancy through an exposure-assessment model in which various sources of exposure, e.g. environment, occupation, leisure time activities and nutrition, are combined. In addition, we will measure hormone receptor activity in blood.

445 AN INTERVENTION PROGRAMME FOR RATIONAL CHRONIC ANTICID DRUG USE IN AMSTERDAM

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Session: Pharmaco Epidemiology

Presentation: Oral.

Background: Eleven percent of the pharmacotherapeutic budget is spent on acid-suppressive drugs (ASD); 3% of patients are chronic user. Most of these indications are not conform to dyspepsia guidelines. *Objectives:* We evaluated the implementation of an ASD rationalisation protocol among chronic users, and analysed effects on volume and costs. *Method:* In a cohort study 2871 patients from 158 GP's with protocol were compared to a control group of 8120 patients from 267 GP's without. Prescription data of 2002–2004 were extracted from Agis Health Database. A log-linear regression model compared standardised outcomes of number of patients that stopped or reduced ASD (>50%) and of prescription volume and costs. *Results:* GP's and patients in both groups were comparable. 7% in the intervention group had stopped; 6% in the control group ($p < 0.01$). The volume had decreased in another 11% of patients; 8% in control group ($p < 0.001$). Compared to the baseline data in the control group (100%) the adjusted OR of volume in the intervention group was 98.2%. The total costs adjusted OR was 97.5%.

Conclusion: The implementation significantly reduced the number of chronic users, and substantially dropped volume and costs. Active intervention from insurance companies can stimulate rationalisation of prescription.

447 THE DUTCH-BELGIAN LUNG CANCER SCREENING TRIAL (NELSON): RECRUITMENT AND BASELINE SCREENING RESULTS

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Session: Screening 2

Presentation: Oral.

Background/Objective: Today, 20% of lung cancers are resectable (stage I/II). 5-year survival is therefore low (15%). Spiral Computed Tomography (CT) screening detects more lung cancers than chest X-ray. It is unknown if this will translate into a lung cancer mortality reduction. The NELSON trial investigates whether 16-detector multi-slice CT reduces lung cancer mortality with at least 25% compared to no screening. We present baseline screening results. *Methods:* A questionnaire was sent to 550,000 men and women. Of the 150,000 respondents, 30,500 high-risk current and former smokers were invited. Until December 22, 2005, 15,530 of them gave informed consent and were randomised (1:1) in a screen arm (CT in year 1, 2 and 4) and control arm (no screening). Data will be linked with the cancer registry and Statistics Netherlands to determine cancer mortality and incidence. *Results:* Of the first 5,700 baseline CT examinations 82% was negative (CT after one year), 16% indeterminate (CT after 3 months) and 2% positive (referral pulmonologist). Seventy percent of detected tumours were resectable. *Conclusion/Discussion:* CT screening detects a high percentage of early stage lung cancers. It is estimated that the NELSON trial is sufficiently large to demonstrate a 25% lung cancer mortality reduction or more.

449 PATTERNS AND CONTINUATION OF ASTHMA MEDICATION USE IN PRESCHOOL CHILDREN: RESULTS FROM THE PIAMA-STUDY

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Session: Childrens health

Presentation: Oral.

Background: Due to diagnostic dilemmas in childhood asthma, drug treatment of young children with asthmatic complaints often serves as a trial treatment. *Objective:* To obtain more insight into patterns and continuation of asthma medication in children during the first 4 years of life. *Design:* Prospective birth cohort study *Methods:* Within the Prevention and Incidence of Asthma and Mite Allergy (PIAMA) study ($n = 3,291$ children) we identified 125 children using asthma medication in their first year of life. *Results:* About 80% of children receiving asthma medication before the age of one, discontinued use during follow-up. Continuation of therapy was associated with male gender (adjusted odds ratio [AOR] 3.6, 95% confidence interval [CI]: 1.6–8.2), a diagnosis of asthma (AOR 2.9, 95% CI: 1.3–6.3) and receiving combination or controller therapy (AOR 2.6, 95% CI: 1.1–6.1). *Conclusion:* Patterns of medication use in preschool children support the notion that both

beta2-agonist and inhaled corticosteroids are often used as trial medication, since 80% discontinues. The observed association between continuation of therapy and both an early diagnosis of asthma and a prescription for controller therapy suggests that, despite of diagnostic dilemmas, children in apparent need of prolonged asthma therapy are identified at this very early age.

450 BIRTHWEIGHT OF INFANTS OF FIRST AND SECOND GENERATION IMMIGRANT WOMEN COMPARED TO INFANTS OF DUTCH WOMEN.

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Session: Birthweight

Presentation: Oral.

Background: This study explored the differences in birthweight between infants of first and second generation immigrants and infants of Dutch women, and to what extent maternal, fetal and environmental characteristics could explain these differences. *Method:* During 15 months all pregnant women in Amsterdam attending their first prenatal screening were asked to fill out a questionnaire (sociodemographic status, lifestyle) as part of the Amsterdam Born Children and their Development (ABCD)-study; 8267 women (67%) responded. Only singleton deliveries with pregnancy duration = 37 weeks were included (n = 7209). *Results:* Infants of all first and second generation immigrant groups (Surinam, the Antilles, Turkey, Morocco, Ghana, other countries) had lower birthweights (range: 3227–3529 gram) than Dutch infants (3548 gram). Linear regression revealed that, adjusted for maternal height, weight, age, parity, smoking, marital status, gestational age and gender, infants of Surinamese women (1st and 2nd generation), Antillean and Ghanaian women (both 1st generation) were still lighter than Dutch infants (93.7, 166.7, 113.1, and 128.0 grams respectively; $p < 0.05$). *Conclusion:* Adjusted for maternal, fetal and environmental characteristics infants of some immigrant groups had substantial lower birthweights than infants of Dutch women. Other factors (like genetics, culture) can possibly explain these differences.

461 MULTIPLE IMPUTATION COMBINED WITH BOOTSTRAPPING FOR ANALYSING INCOMPLETE COST AND EFFECT DATA

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Session: Effects and Costs

Presentation: Oral.

Introduction: Missing data is frequently seen in cost-effectiveness analyses (CEAs). We applied Multiple Imputation (MI) combined with bootstrapping in a CEA. *Objective:* To examine the effect of two new methodological procedures of combining MI and bootstrapping in a CEA with missing data. *Methods:* From a trial we used direct health and non-health care costs and indirect costs, kinesiophobia and work absence data assessed over 12 months. MI was applied by Multivariate Imputation by Chained Equations (MICE) and non-parametric bootstrapping was used. Observed case analyses (OCA), where analyses were conducted on the data without missings, were compared with complete case analysis (CCA) and with analyses when MI and bootstrapping were combined after 10 to 30% of cost and effect data were omitted. *Results:* By the CCA effect and cost estimates shifted from negative to positive and cost-effectiveness planes and acceptability curves were biased compared to the OCA. The methods of combining MI and bootstrapping generated good cost and effect estimates and the cost-effectiveness planes and acceptability curves were almost

identical to the OCA. *Conclusion:* On basis of our study results we recommend to use the combined application of MI and bootstrapping in data sets with missingness in costs and effects.

470 COST-EFFECTIVENESS OF MEDICAL AND SURGICAL INTERVENTIONS FOR CORONARY HEART DISEASE IN IRELAND, 2000 THROUGH 2010

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Session: Effects and Costs

Presentation: Oral.

Background: Since the 1980s, coronary heart disease (CHD) mortality rates have halved with approximately 50% of this decrease being attributable to medical and surgical treatments. *Objective:* This study examined the cost-effectiveness of specific CHD treatments. *Design and Methods:* The IMPACT CHD model was used to calculate the number of life-years-gained (LYG) by specific cardiology interventions given in 2000, and followed over ten years. This previously validated model integrates data on patient numbers, median survival in specific groups, treatment uptake, effectiveness and costs of specific interventions. Cost-effectiveness ratios were generated as costs per LYG for each specific intervention. *Results:* In 2000, medical and surgical treatments together prevented or postponed approximately 1,635 CHD deaths in patients aged 25–84 years; this generated approximately 13,645 extra life years. Aspirin and beta-blockers for secondary prevention of myocardial infarction and heart failure, and spironolactone for heart failure all appeared highly cost-effective ($< \text{€}1,500$ per LYG). Less cost effective, however, were revascularisation for chronic angina (CABG surgery $\text{€}12,970$ and angioplasty $\text{€}14,865$ per LYG), or statins for primary prevention ($\text{€}11,475$ per LYG) or for community patients with angina ($\text{€}11,220$ per LYG). *Conclusions:* Cost effectiveness ratios generally favoured simple medical treatments for myocardial infarction, secondary prevention, and heart failure.

471 MODELLING THE DECLINE IN CORONARY HEART DISEASE DEATHS IN IRELAND: PRIMARY PREVENTION VERSUS SECONDARY PREVENTION

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Session: Trends and Impact

Presentation: Oral.

Objective: Is population-based primary prevention more favourable than secondary prevention (risk factor reduction in coronary heart disease (CHD) patients)? *Methods:* The previously validated IMPACT model was used to integrate data describing CHD patient numbers, specific treatment uptake levels, trends in major risk factors, and the mortality benefits of these risk factor changes in healthy people and in CHD patients. *Results:* Approximately 2,530 fewer deaths were attributable to reductions in the three major risk factors between 1985 and 2000. Declining smoking prevalence resulted in approximately 685 fewer deaths: 395 in healthy people and 290 in known CHD patients. Decreasing population total cholesterol concentrations resulted in approximately 1,340 fewer

deaths attributable to dietary changes (1,250 in healthy people and 90 in CHD patients) plus 265 fewer deaths attributable to statin treatment (45 in people without CHD and 220 in CHD patients). Decreasing mean population blood pressure resulted in approximately 170 fewer deaths attributable to secular falls in blood pressure (150 in healthy people and 20 in CHD patients) plus approximately 70 fewer deaths attributable to antihypertensive treatments in people without CHD. *Conclusions:* Compared with secondary prevention (620 fewer deaths), primary prevention (1,910 fewer deaths) achieved a three-fold larger reduction in CHD deaths.

473 CORRELATIONS BETWEEN CAROTENOID INTAKE AND THEIR PLASMA CONCENTRATION BY BMI CATEGORIES IN SPANISH ELDERLY PEOPLE

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Session: Molecular Epidemiology

Presentation: Oral.

Background: Carotenoid intake has been positively associated with plasma concentrations in different populations. However, the influence of body mass index (BMI) on this association is mostly unknown. *Objectives:* We explored the relationship between intake of carotenoids and vitamin C, and their plasma concentrations by BMI categories in Spanish elderly people. *Design/Methods:* A dietary interview using a 135-item food-frequency questionnaire was conducted with 240 men and 293 women, 65 and older, participating in the EUREYE study in Spain. Blood samples were collected for measurement of carotenoids and vitamin C. Correlation coefficients (r) between energy adjusted nutrient intakes and plasma concentrations were calculated by categories of BMI, adjusting for sex, age and smoking. *Results:* Significant correlations between a-carotene, β-carotene, lycopene, β-cryptoxanthin and vitamin C intakes, and plasma concentrations were observed, r=0.21;0.19;0.17;0.20;0.41, respectively (P<0.05). Correlations for carotenoids changed substantially by BMI categories, with the highest correlations for a-carotene, β-carotene, and, to a lesser extension, β-cryptoxanthin and lycopene, in subjects with BMI < 25 (0.39;0.34;0.25;0.22 respectively), and the lowest, in subjects with BMI = 30 (0.08;0.19;0.18;0.19 respectively). Correlations for vitamin C remained unchanged by BMI. *Conclusions:* Our data suggest that carotenoids in plasma may be good markers of dietary intake in elderly subjects with lower BMI.

487 HEART RATE VARIABILITY IS ASSOCIATED WITH CARDIOVASCULAR RISK FACTORS IN AN ELDERLY GENERAL POPULATION

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Session: Cardiovascular Risk Factors

Presentation: Oral.

Background: Reduced heart rate variability (HRV) is associated with an increased mortality, morbidity and worse prognosis of cardiovascular diseases (CVD). There is a lack of population-based data to examine the distribution of HRV, its association with cardiovascular risk factors (CVRF), and its role as a potential mediator of the effect of established risk factors on CVD. *Objective:* To study the distribution of HRV and its association

with CVRF in an elderly Eastern German population. *Design and Methods:* This analysis is based on data of 1336 participants (45–83 years) of an ongoing cross-sectional study. Time- and frequency-domain measures of HRV were computed. Their association with CVRF was determined by linear regression modelling. *Results:* Age- and heart rate-adjusted standard deviation of the durations of NN intervals and high frequency power was significantly higher in women. Significant inverse associations of time- and frequency- domain HRV with anthropometric parameters, triglycerides, blood pressure, prevalent diabetes and age were observed in both sexes. There was a graded inverse association of HRV with age except for the oldest age-group. *Discussion/Conclusion:* Established CVRF are associated with a reduced HRV. Therefore reduced HRV could be a mediator between CVRF and CVD, which will be examined in a follow-up study.

490 A COX-AALEN MODEL FOR BREAST CANCER SURVIVAL

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Session: Modeling

Presentation: Oral.

Background: Aalen's model and Cox's proportional hazard model postulate different relationship between hazard and covariates and the subject matter seldom suggests which of the models are to be preferred. Actually the assumption of constant effects, either additive or multiplicative, may be incorrect especially in cancer survival analysis. *Objectives:* The aim of the study is to analyse survival for a breast cancer cohort where typical prognostic factors lack of proportionality. *Design and Methods:* The cohort consists of 2700 invasive breast cancer cases from Turin cancer registry within a high resolution study in co-operation with the Breast Cancer Screening Program, diagnosed from 1997 through 2000, aged 40–79. An additive-multiplicative Cox-Aalen model with age at diagnosis, categorized tumour size (T) and nodal status (N) is fitted. *Results:* The prognostic role of age at diagnosis, T and N are confirmed. Proportionality assumption holds only for age (hazard ratio = 1.03, p-value < 0.0001). T, particularly the category referring to 'extended to chest wall or skin' versus 'less than 2 cm', has a significant time-varying effect (p-value = 0.02) after 12 months since diagnosis. *Discussion:* More flexible regression tools than Cox model which is routinely used for analyzing cancer survival are needed. Cox-Aalen proves to be an appealing alternative.

496 VALIDATION OF A FREELY AVAILABLE AND COMPREHENSIVE META-ANALYSIS ADD-IN FOR EXCEL

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Session: Meta Analysis

Presentation: Oral.

Background: The major software packages for meta-analysis of causal – notably intervention - research are generally too expensive for developing countries. Moreover, interactive educational software for students and teachers is largely unavailable. We recently developed the 'MIX' program, an easy-to-maintain, interactive, and educational meta-analysis add-in for Excel, available as free download at <http://www.mix-for-meta-analysis.info>. *Objectives:* To formally establish whether the program's numerical and graphical output is comprehensive and accurate enough for scientific standards. *Design and Methods:* The study was designed as a software validation. Data sets, primarily intervention studies, with substantially different features were analyzed by three investigators with MIX and STATA, using the latter program as golden standard. Additionally, a feature (software options) comparison

was made with modern programs for meta-analysis, such as CMA 2.0, MetaWin 2.1, WEasyMA 2.2, and RevMan 4.2. *Results:* The results of the validation project will be fully reported at the congress. Preliminary results indicate that the MIX program's output is comparable to STATA output. It distinguishes itself from other software by the variety of graphical output, the Excel-based interface, and free availability. *Conclusion and Discussion:* The MIX program appears to provide valid output and may be an attractive, feature-rich alternative to existing meta-analysis software.

507 VALIDATION OF THE OMRON 705CP FOR THE MEASUREMENT OF BLOOD PRESSURE IN THE ANKLE AND FOR ANKLE-ARM INDEX DETERMINATION

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Session: Cardiovascular

Presentation: Oral.

Background: An ankle-arm index (AAI) <0.9 of systolic blood pressure (SBP) as marker of peripheral arterial disease is a predictor of coronary and carotid artery disease. The present gold standard examination with Doppler-ultrasound and sphygmomanometric cuff is subject to observer bias and requires intensive training. For epidemiologic studies, valid and easy-to-use examination methods are needed. *Objective:* To validate the easy-to-use OMRON HEM-705CP for SBP measurements in the ankle and for AAI determination in epidemiologic studies. *Design/Methods:* In a population-based sample of 112 subjects (45–80 years), arm and ankle SBP measurements by the OMRON HEM-705CP and corresponding AAI were compared with those using a hand-held Doppler and sphygmomanometric cuff. Bland-Altman plots of SBP and AAI differences, validation criteria for use in clinical practice and diagnostic values for the detection of an AAI <0.9 were employed. *Results:* OMRON measured higher SBP than Doppler. SBP and AAI differences increasing towards higher SBP levels. Specificity, sensitivity and negative predictive value for the detection of AAI <0.9 were > 99% (positive predictive value was 67%). *Conclusion:* OMRON fails the validation criteria for ankle SBP measurement. However, the ease of use of the device could outweigh the inaccuracy if used as a screening tool for AAI <0.9 in epidemiologic studies.

511 PATHWAYS FROM PARENTAL BIRTH WEIGHT AND PARENTAL PSYCHOPATHOLOGY TO CHILD BIRTH WEIGHT

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Session: Children's health

Presentation: Oral.

Background: Associations exist between: 1) parental birth weight and child birth weight; 2) birth weight and adult psychopathology; and 3) maternal psychopathology during pregnancy and birth weight of the child. This study is the first to combine those associations. *Objective:* To investigate the different pathways from parental birth weight and parental psychopathology to child birth weight in one model. *Design and Methods:* Depression and anxiety scores on 6,507 mothers and 4,764 fathers during 20 weeks pregnancy and birth weights from 6,116 children were available. Path analyses with standardized regression coefficients were used to evaluate the different effects. *Results:* In the unadjusted path analyses significant effects existed between: maternal ($r = .17$) and paternal birth weight ($r = .13$) and child birth weight; maternal birth weight and maternal depression ($r = -.05$) and anxiety

($r = -.06$); and maternal depression ($r = .06$) and anxiety ($r = .06$) and child birth weight. After adjustment for confounders, only maternal ($r = .10$) and paternal ($r = .08$) birth weight and maternal depression ($r = -.02$) remained significantly related to child birth weight. *Conclusion:* After adjustment maternal depression, and not anxiety, remained significantly related to child birth weight. Discussion Future research should focus on the different mechanisms of maternal anxiety and depression on child birth weight.

514 NON-INVASIVE CARDIAC ASSESSMENT IN HIGH RISK PATIENTS (THE GROUND STUDY): RATIONALE, OBJECTIVES AND DESIGN.

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Session: Cardiovascular Risk Factors

Presentation: Oral.

Background: Most patients with peripheral arterial disease (PAD) die from coronary artery disease (CAD). Non-invasive cardiac imaging can assess the presence of coronary atherosclerosis and/or cardiac ischemia. Screening in combination with more aggressive treatment may improve prognosis. *Objective:* To evaluate whether a non-invasive cardiac imaging algorithm, followed by treatment will reduce the 5-year-risk of cardiovascular events in PAD patients free from cardiac symptoms. *Design and Methods:* This is a multicenter randomized controlled clinical trial. Patients with intermittent claudication and no history of CAD are eligible. One group will undergo computed tomography (CT) Calcium Scoring. The other group will undergo CT Calcium Scoring and CT angiography (CTA) of the coronary arteries. Patients in the latter group will be scheduled for a dobutamine stress magnetic resonance imaging (DSMR) test to assess cardiac ischemia, unless a stenosis of the left main (LM) coronary artery (or its equivalent) was found on CTA. Patients with cardiac ischemia or a LM/LM-equivalent stenosis will be referred to a cardiologist, who will decide on further (interventional) treatment. Patients are followed for 5 years. *Conclusion:* This study assesses the value of non-invasive cardiac imaging to reduce the risk of cardiovascular events in patients with PAD free from cardiac symptoms.

530 SYSTEMATIC LITERATURE REVIEW ON KNOWLEDGE ABOUT INFECTION WITH HUMAN PAPILLOMAVIRUS (HPV)

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Session: Meta Analysis

Presentation: Oral.

Background: HPV is the main risk factor for cervical cancer and also a necessary cause for it. Participation rates in cervical cancer screening are low in some countries and soon HPV vaccination will be available. *Objectives:* Aim of this systematic review was to collect and analyze published data on knowledge about HPV. *Design and Methods:* A Medline search was performed for publications on knowledge about HPV as a risk factor for cervical cancer and other issues of HPV infection. *Results:* of individual studies were stratified by age of study population, country of origin, study size, publication year and response proportion. Heterogeneity was described. *Results:* Knowledge between 27 included studies varied

substantially. Thirteen to 57% (closed question) and 0.6 to 1.9% (open question) of the participants knew about HPV as a risk factor for cervical cancer. Women had consistently better knowledge on HPV than men. There was confusion of HPV with other sexually transmitted diseases. *Conclusion and Discussion:* Studies were very heterogeneous, thus making comparison difficult. Knowledge about HPV infections depended on the type of question used, gender of the participants and their professional background. Education of the general public on HPV infections needs improvement, specially men should also be addressed.

532 QUANTIFYING THE SPREAD OF INFLUENZA IN A HOSPITAL SETTING (QUO VADIT)

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Session: Eye Session

Presentation: Oral.

Background: Influenza outbreaks in hospitals and nursing homes are characterized by high attack rates and severe complications. Knowledge of the virus' specific transmission dynamics in health-care institutions is scarce but essential to develop cost-effective strategies. *Objective:* To follow and model the spread of influenza in two hospital departments and to quantify the contributions of the several possible transmission pathways. *Methods:* An observational prospective cohort study is performed on the departments of Internal Medicine & Infectious Diseases and Pulmonary Diseases of the UMC Utrecht during the 2006 influenza season. All patients and regular medical staff are checked daily on the presence of fever and cough, the most accurate symptoms of influenza infection. Nose-throat swabs are taken for PCR analysis for both symptomatic individuals and a sample of asymptomatic individuals. To determine transmission, contact patterns are observed between patients and visitors and patients and medical staff. *Results/Discussion:* Spatial and temporal data of influenza cases will be combined with contact data in a mathematical model to quantify the main transmission pathways. Among others the model can be used to predict the effect of vaccination of the medical staff which is not yet common practice in the studied hospital.

535 INCREASED MORTALITY AMONG WOMEN WHO HAVE EXPERIENCED STILLBIRTHS.

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Session: Reproduction

Presentation: Oral.

Background: The long term maternal sequelae of stillbirths is unknown. *Objectives:* To assess whether women who experienced stillbirths have an excess risk of long term mortality. Study design: Cohort study. *Methods:* We traced Jewish women from the Jerusalem Perinatal Study, a population-based database of all births to West Jerusalem residents (1964–1976) who gave birth at least twice during the study period, using unique identity numbers. We compared the survival to 31–12–2004 of women who had at least one stillbirth (n = 569) to that of women who had only live births (n = 24108) using Cox Proportional Hazards models. *Results:* During a median follow up of 36.2 years, 77 (13.5%) mothers with stillbirths died compared to 1,483 (6.2%) unexposed women; crude hazard ratio (HR) 2.15 (95% CI: 1.71–2.70). The mortality risk remained significantly increased after adjustments for sociodemo-

graphic variables, maternal diseases, placental abruption and pre-eclampsia (HR: 1.42, 95% CI: 1.12–1.80). Stillbirth was associated with increased risk of death from cardiovascular (adjusted HR:1.95, 0.99–3.84), circulatory (1.77, 1.07–2.92) and genitourinary (4.59, 1.41–14.91) causes. *Conclusions:* The finding of increased mortality among mothers of stillbirths joins the growing body of evidence demonstrating long term sequelae of obstetric events. Future studies should elucidate the mechanisms underlying these associations.

543 SOCIAL AND PSYCHOLOGICAL DETERMINANTS OF RESILIENCE IN OLD AGE IN ENGLAND

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Session: Socio-economic status and migrants

Presentation: Oral.

Resilience is one of the essential characteristics of successful ageing. However, very little is known about the determinants of resilience in old age. Our objectives were to identify resilience in the English Longitudinal Study of Ageing (ELSA) and to investigate social and psychological factors determining it. The study design was a cross-sectional analysis of wave 1 of ELSA. Using structural equation modelling, we identified resilience as a latent variable indicated by high quality of life in the face of six adversities: ageing, limiting long-standing illness, disability, depression, perceived poverty and social isolation and we regressed it on social and psychological factors. The latent variable model for resilience showed a highly significant degree of fit (Weighted Root Mean Square Residual=0.035). Determinants of resilience included good quality of relationships with spouse (p = 0.002), family (p = 0.028), and friends (p < 0.001), good neighbourhood (p < 0.001), high level of social participation (p < 0.001), involvement in leisure activities (p = 0.003); perception of not being old (p < 0.001); optimism (p = 0.041), and high subjective probability of survival to an older age (p < 0.001). We concluded that resilience in old age was as much a matter of social engagement, networks and context as of individual disposition. Implications of this on health policy are discussed.

548 OBESITY AND SOCIOECONOMIC INEQUALITIES IN CENTRAL AND EASTERN EUROPE: THE HAPIEE STUDY

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Session: Obesity

Presentation: Oral.

Background: There is extensive literature concluding that SES is inversely related to obesity in developed countries. Several studies in developing populations however reported curvilinear or positive association between SES and obesity. *Objectives:* To assess the social distribution of obesity in men and women in 3 middle-income countries of Eastern and Central Europe with different level of economic development. *Methods:* Random population samples aged 45–69 years from Poland, Russia and Czech Republic were examined between 2002–2005 as baseline for prospective cohort study. We used body-mass index (BMI) and waist/hip ratio (WHR) as obesity measures. We compared age-adjusted BMI and WHR for men and women by educational levels in all 3 countries. *Results:* The data collection was concluded in summer 2005. We collected data from about 29,000 subjects. Lower SES increased obesity risk

in women in all 3 countries (the strongest gradient in the Czech Republic and the lowest in Russia), and in Czech men. There was no SES gradient in BMI in Polish men and positive association between education and BMI in Russian men. *Conclusions:* Our findings strongly agree with previous literature showing that the association between SES status and obesity is strongly influenced by overall level of country economic development.

550 SATISFACTORY ACCURACY OF SELF-REPORTED ANTHROPOMETRICS IN A DUTCH OVERWEIGHT WORKING POPULATION

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Session: Obesity

Presentation: Oral.

Background: Inaccurate measurements of body weight, height and waist circumference will lead to an inaccurate assessment of body composition, and thus of the general health of a population. *Objectives:* To assess the accuracy of self-reported body weight, height and waist-circumference in a Dutch overweight working population. *Design and Methods:* Bland and Altman methods were used to examine the individual agreement between self-reported and measured body weight and height in 1298 overweight workers (67% male; mean age 43.9 +/- 8.6 years; mean Body Mass Index [BMI] 29.5 +/- 3.4 kg/m²). The accuracy of self-reported waist-circumference was assessed in a subgroup of 250 persons (70% male; mean age 44.1 +/- 9.2 years; mean BMI 29.6 +/- 3.0 kg/m²), for whom both measured and self-reported waist circumference was available. *Results:* Body weight was underreported by a mean (standard deviation) of 1.4 (1.9) kg, body height was on average over-reported by 0.7 (1.5) cm. BMI was on average underreported by 0.68 (0.8) kg/m². Waist-circumference was over-reported by 1.1 (4.0) cm. The overall degree of error from self-reporting was between 0.4 and 2.3%. *Conclusion and Discussion:* Self-reported anthropometrics seem satisfactorily accurate for the assessment of general health in a middle-aged overweight working population.

564 METABOLIC SYNDROME INCREASES THE RISK OF BREAST CANCER IN POSTMENOPAUSAL WOMEN.

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Session: Metabolic Syndrome

Presentation: Oral.

The incidence of breast cancer and the prevalence of metabolic syndrome are increasing rapidly in Chile, but this relationship is still debated. The goal of this study is to assess the association between metabolic syndrome and breast cancer before and after menopause. A hospital based case-control study was conducted in Chile during 2005. 170 cases with histologically confirmed breast cancer and 170 age matched controls with normal mammography were identified. Metabolic syndrome was defined by ATPIII and serum lipids, glucose, blood pressure and waist circumference were measured by trained nurses. Data of potential confounders such as, obesity, socioeconomic status, exercise and diet were obtained by anthropometric measures and a questionnaire. Odds ratios (ORs) and 95% confidence intervals (CIs) were estimated by conditional logistic regression stratified by menopause. In postmenopausal women, a significant increase risk of breast cancer was observed in women with metabolic syndrome (OR = 1.90, 95% CI = 1.00–

3.60). The elements of metabolic syndrome strongly associated were high levels of glucose and hypertension. In conclusion, post-menopausal women with metabolic syndrome had 90% of excess risk of breast cancer. These findings support the theory that there is a different risk profile of breast cancer after and before menopause. Metabolic Syndrome; Breast Cancer; Chile

567 PHYSICAL EXERCISE ASSOCIATED WITH RISK OF SPONTANEOUS ABORTION.

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Session: Reproduction

Presentation: Oral.

Background: Physical exercise during pregnancy has numerous beneficial effects on maternal and foetal health. It may, however, affect early foetal survival negatively. *Objectives:* To examine the association between physical exercise and spontaneous abortion in a cohort study. *Design and Methods:* In total, 92,721 women recruited to the Danish National Birth Cohort in early pregnancy, provided information on amount and type of exercise during pregnancy and on possible confounding factors. 3,187 women experienced foetal death before 23 gestational weeks. Hazard Ratios for spontaneous abortion in four periods of pregnancy (-10, 11-14, 15-18, and 19-22 weeks) according to amount (min/week) and type of exercise, respectively, were estimated using Cox regression. Various sensitivity analyses to reveal distortion of the results from selection forces and information bias were made. *Results:* The hazard ratios of spontaneous abortion increased stepwise with amount of physical exercise and were largest in the earlier periods of pregnancy (HRweek 11-14 = 3.4 (CI 2.7-4.3) for 420 min/week, compared to no exercise). Weight bearing types of exercise were strongest associated with abortion, while swimming showed no association. These results remained stable, although attenuated, in the sensitivity analyses. *Discussion:* Handling of unexpected findings that furthermore challenge official public health messages will be discussed.

569 WEIGHT LOSS INCREASES ALL-CAUSE MORTALITY IN A COHORT OF HEMODIALYSIS PATIENTS

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Session: Obesity

Presentation: Oral.

Hemodialysis (HD) patients with a low Body Mass Index (BMI) have an increased mortality risk, but BMI changes over time on dialysis treatment. We studied the association between changes in BMI and all-cause mortality in a cohort of incident HD patients. Patients were followed until death or censoring for a maximum follow-up of 7 years. BMI was measured every 6 months and changes in BMI were calculated over each 6-mo period. With a time-dependent Cox regression analysis, hazard ratios (HR) were calculated for these 6-mo changes on subsequent mortality from all causes, adjusted for the mean BMI of each 6-mo period, age, sex and comorbidity. 712 men and 494 women were included (age: 64±14 years, BMI: 25.1±4.6 kg/m², 7-y mortality: 75%). A loss of BMI > 5% was independently associated with an increased mortality risk (HR: 1.83, 95%-CI: 1.41-2.37), while a loss of 1-5% showed no difference (HR: 0.89, 0.69-1.14) compared to no change in BMI (-1% to +1% change). A gain in BMI of 1-5% showed

beneficial (HR: 0.67, 0.51–0.88), while a gain of BMI > 5% was not associated with a survival advantage (HR: 1.02, 0.69–1.50). In conclusion, HD patients with a decreasing BMI have an increased risk of all-cause mortality.

579 VENOUS THROMBOEMBOLISM PROPHYLAXIS GUIDELINES: A DECISION TREE MODEL TO ESTIMATE THE IMPACT ON COST-EFFECTIVENESS

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Session: Effects and Costs

Presentation: Oral.

Background: Within the TRIPSS-2 project, impact of clinical guidelines (GL) on venous thromboembolism (VTE) prophylaxis was evaluated in a large Italian hospital. GL were effective in increasing the appropriateness of prophylaxis and in reducing VTE. *Objectives:* We performed a cost-effectiveness analysis by using a decision-tree model to estimate the impact of the adopted GL on costs and benefits. *Design and Methods:* A decision-tree model compared prophylaxis cost and effects before and after GL implementation. Four risk profiles were identified (low, medium, high, very high). Possible outcomes were: no event, major bleeding, asymptomatic VTE, symptomatic VTE and fatal pulmonary embolism. VTE patients risk and probability of receiving prophylaxis were defined using data from the previous survey. Outcome probabilities were assumed from literature. Tariffs and hospital figures were used for costing the events. *Results:* GL introduction reduced the average cost per patient from € 190 to 165 (–13%) with an increase in terms of event free patients (+4%). Results are particularly relevant in the very high risk group. *Conclusion:* The implementation of locally adapted GL may lead to a gain in terms of costs and effects, in particular for patients at highest VTE risk.

581 COMPARISON OF TWO OVARIAN STIMULATION PROTOCOLS, GNRH AGONIST VERSUS ANTAGONIST

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Session: Reproduction

Presentation: Oral.

Background: Assisted Reproductive Techniques are used to overcome infertility. One reason of success is the use of ovarian stimulation. *Objectives:* Compare two ovarian stimulation protocols, Gonadotropin-Releasing Hormone Agonists/Antagonists, assessing laboratorial and clinical outcomes, to provide proper therapy option. Identify significant predictors of clinical pregnancy and ovarian response. *Design and Methods:* Retrospective study (Agonist cycles, 203; Antagonist cycles, 177) including IVF/Intracytoplasmic Sperm Injection cycles. Multiple logistic and regression models, with fractional polynomial method were used. *Results:* Antagonist group exhibited lower length of stimulation and dose of recombinant Follicle Stimulating Hormone (rFSH), higher number of retrieved and fertilized oocytes, and embryos. Agonist group presented thicker endometrium, better fertilization, implantation and clinical pregnancy rates. Clinical pregnancy has shown positive correlation with endometrial thickness and use of Agonist; negative correlation with age and number of previous attempts. Retrieved oocytes shown positive correlation with estradiol on day of Human Chorionic Gonadotrophin (HCG) and use of Antagonist; negative

correlation with rFSH dose. *Conclusion:* Patients from Antagonist group are more likely to get more oocytes and quality embryos, despite those from Agonist group are more likely to get pregnant. Other factors affect outcomes: age, basal FSH, estradiol on day of HCG, previous attempts, endometrial thickness and rFSH.

585 SENSITIVITY ANALYSIS OF THE PREVALENCE OF THE METABOLIC SYNDROME IN GERMANY

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Session: Metabolic Syndrome

Presentation: Oral.

Background: Prevalence studies of the metabolic syndrome require fasting blood samples and are therefore lacking in many countries including Germany. *Objectives:* To narrow the uncertainty resulting from extrapolation of international prevalence estimates, with a sensitivity analysis of the prevalence of the Metabolic Syndrome in Germany using a nationally representative but partially non-fasting sample. *Methods:* Stepwise analysis of the German Health Examination Survey 1998, using the National Cholesterol Education Program (NCEP) criteria, hemoglobin A1c (HbA1c), non-fasting triglycerides and fasting time. *Results:* Among 6666 participants aged 18–79 years, the metabolic syndrome prevalence was (i) 13.6% with 13.3% inconclusive cases using the unmodified NCEP criteria, (ii) 17.6% with 9.4% inconclusive cases using HbA1c > 6.1% if fasting glucose was missing, (iii) 23.8% with 0.6% inconclusive cases when additionally using non-fasting triglycerides = 75th percentile stratified by fasting time, and (iv) 21.2% to 23.8% with <1% inconclusive cases using different cutoffs (HbA1c 6.1%, non-fasting triglycerides 200 and 250 mg/dl). *Discussion:* Despite a lower prevalence of obesity in Germany compared to the US, the prevalence of the metabolic syndrome is likely to be in the same order of magnitude. This analysis may help promote healthy life styles by stressing the high prevalence of interrelated cardiovascular risk factors.

590 INTAKE OF FRUITS AND VEGETABLES, TELEVISION WATCHING AND 10-Y WEIGHT GAIN AMONG SPANISH ADULT PEOPLE

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Session: Obesity

Presentation: Oral.

Background: Epidemiologic studies that directly examine fruits and vegetables (F&V) consumption and other lifestyle factors in relation to weight gain are sparse. *Objective:* We examined the associations between the F&V intake and 10-y weight gain among Spanish adult people. *Design/methods:* The study was conducted with a sub-sample of 214 healthy people aged 15 y and over at baseline in 1994, who participated in a population-based nutrition survey in Valencia-Spain. Data on diet, lifestyle factors and body weight (direct measurement) were obtained in 1994 and 2004. Information on weight gain was available for 187 participants in 2004. *Results:* During the 10-y period, participants tended to gain on average 4.61 kg (median = 3.6 Kg). In multivariate analyses, participants with the highest tertile of F&V intake at baseline had a 65% of lower risk of gaining = 3.6 kg compared with those who had the lowest intake tertile after adjustment for sex, age, education, smoking, TV-viewing, BMI, and energy intake (OR = 0.35;95% CI:0.15 0.84;P-trend = 0.02). For every 100 g/d increase in F&V intake, the OR was reduced by 14% (OR = 0.86;0.75–0.99;P-trend=0.036). TV-viewing at baseline was positively associated with weight gain, OR for-1 h-increase = 1.32 (1.01–1.71;P-trend = 0.04). *Conclusions:* Our findings suggest that a high F&V intake and low TV-viewing may reduce weight gain among adults.

594 DIABETES, HYPERGLYCEMIA AND CORONARY CALCIFICATION - RESULTS OF THE HEINZ NIXDORF RECALL STUDY

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Session: Diabetes

Presentation: Oral.

Background: Diabetic patients develop more readily atherosclerosis thus showing greatly increased risk for cardiovascular disease. *Objective:* The Heinz Nixdorf Recall-Study is a prospective cohort-study designed to assess the prognostic value of new risk stratification methods. Here we examined the association between diabetes, previously unknown hyperglycemia and the degree of coronary calcification (CAC). *Methods:* A population-based sample of 4,814 men and women aged 45–74 years was recruited from three German cities between 2000–2003. Baseline examination included amongst others a detailed medical history, blood analyses and electron-beam tomography. We calculated adjusted prevalence ratios (PR), adjusting for age, smoking, BMI and 95%-confidence intervals (95% CI) with log-linear binomial regression. *Results:* The prevalence of diabetes is 8.4% (men: 9.8%, women: 6.7%), for hyperglycemia 5.7% (men: 8.1%, women: 3.4%). Prevalence ratio for CAC in male diabetics without overt coronary heart disease is 1.87 (95% CI: 1.28–2.72), for those with hyperglycemia 1.62 (1.09–2.46). In women the association is even stronger: 2.62 (1.78–3.87) with diabetes, 1.92 (1.11–3.31) with hyperglycemia. *Conclusion:* The data support the concept of regarding diabetic patients as being in a high risk category meaning >20% hard events in 10 years. Furthermore, even persons with elevated blood glucose levels already show higher levels of coronary calcification.

597 SOCIOECONOMIC INEQUALITY IN BIRTH WEIGHT, LBW AND SGA HAS INCREASED IN DENMARK FROM 1981 TO 2001.

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Session: Birthweight

Presentation: Oral.

Background: Birth weight is associated with health in infancy and later in life. Socioeconomic inequality in birth weight is an important marker of current and future population health inequality. *Objective:* To examine the effect of maternal education on birth weight, low birth weight (LBW, birth weight < 2,500 g), and small for gestational age (SGA) in Denmark 1981 to 2001. *Design and Methods:* Data on 1,314,276 singleton live births 1981–2001, and highest completed maternal education in the year preceding birth was obtained from national registries. *Results:* The mean birth weight increased from 3403 g in 1981 to 3534 g in 2001, while the prevalence of LBW and SGA decreased from 4.2% to 2.9%, and 5.9% to 4.1%, respectively. The relative index of inequality (RII) increased for all outcomes from 1981 to 2001 (Birth weight from 97.7 g (95% Confidence Interval 88.4 g, 107.1 g) to 314.4 g (305.7 g, 323.1 g), LBW from an odds ratio of 1.88 (1.72, 2.06) to 3.56 (3.21, 3.94), and SGA from an odds ratio of 1.72 (1.60, 1.86) to 3.38 (3.11, 3.69), respectively). *Discussion:* In conclusion, our results show a substantial increase in the socioeconomic inequality in birth weight, LBW, and SGA in Denmark from 1981 to 2001.

599 ASSOCIATION OF PARAOXONASE 1 AND 2 POLYMORPHISMS AND ENZYME ACTIVITY WITH MYOCARDIAL INFARCTION RISK

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Session: Genetics and genomics epidemiology

Presentation: Oral.

Background: Polymorphisms within the antioxidant enzyme paraoxonase1 and paraoxonase2 encoding genes (PON1 and PON2) have been related to increased risk of myocardial infarction (MI), with discordant results. *Objective:* To assess the association of PON1–192 and PON2–311 polymorphisms and PON1 enzyme activity with MI risk in the Spanish population. *Design and Methods:* A population-based case-control study was designed: 746 consecutive MI patients and 1796 healthy controls were recruited between 1999 and 2000 in 4 regions of Spain. PON1–192 and PON2–311 polymorphisms were determined. PON1 activity was analysed in a random subsample of 510 cases and 672 controls. Classical cardiovascular risk factors were also assessed. *Results:* The adjusted Odds Ratios (OR) of MI for PON1–192QQ and PON2–311SS genotypes (50% and 66% of the population, respectively) were 1.26 (95% Confidence Interval (CI) 1.02–1.55), and 1.25 (95% CI 1.04–1.50), respectively, as compared with R- and C-carriers. For subjects who carried both QQ and SS genotypes, the adjusted OR of MI for polymorphisms increased up to 1.41 (95% CI 1.13–1.75). No relationship between PON1 activity and MI risk was shown after adjusting for confounding factors and genotype group. *Conclusions:* The PON1–192 and PON2–311 polymorphisms are independent risk factors of MI in the Spanish population.

613 UPDATING PROGNOSTIC INFORMATION DURING ADMISSION IN A NEONATAL ICU.

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Session: Pediatrics

Presentation: Oral.

Background: In clinical practice patient data are obtained gradually and health care practitioners tune prognostic information according to available data. Prognostic research does not always reproduce this sequential acquisition of data: instead, 'worst', discharge or aggregate data are often used. *Objective:* To estimate prognostic performance of sequentially updated models. *Methods:* Cohort-study of all very-low-birth-weight-babies (< 1500 g) admitted to the study Neonatal ICU < 2 days after birth (984 eligible from 1991 to 2002) and followed-up until 2 years old (7.8% lost-to-follow-up). Main outcomes: disabling cerebral palsy at 2 years (37, 3.8%) or death (194, 19.7% –95% in the first 4 weeks). Main prognostic determinants: neonatal cerebral lesions identified with cranial ultrasound (US) exams performed per protocol on days 2, 7, 28 and at discharge. Logistic regression models were updated with data available at these different moments in time during admission. *Results:* At days 2, 7 and 28 respectively, main predictor (severe parenchymal lesion) adjusted odds ratio: 18, 31 and 37; US model c-statistic: 0.69, 0.75 and 0.80. *Discussion:* Prognostic models performance in neonatal patients improved from inception to discharge, particularly for identification of the high risk category. Time of data acquisition should be considered when comparing prognostic instruments.

616 MARKOV MODEL TO ANALYSE TIME PATTERNS BASED ON CENSORED DATA

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Session: Modeling

Presentation: Oral.

In epidemiological longitudinal studies one is often interested in the analysis of time patterns of censored history data. For example, how regular a medication is used or how often someone is depressed. Our goal is to develop a method to analyse time patterns of censored data. One of the tools in longitudinal studies is a nonhomogeneous Markov chain model with discrete time moments and categorical state space (for example, use of various medications). Suppose we are interested only in the time pattern of appearance of a particular state which is in fact a certain epidemiological event under study. For this purpose we construct a new homogeneous Markov chain associated with this event. The states of this Markov chain are the time moments of the original nonhomogeneous Markov chain. Using the new transition matrix and standard tools from Markov chain theory we can derive the probabilities of occurrence of that epidemiological event during various time periods (including ones with gaps). For example, probabilities of cumulative use of medication during any time period. In conclusion, the proposed approach based on Markov chain model provides a new way of data representation and analysis which is easy to interpret in practical applications.

625 RISK FACTORS FOR TUBERCULOSIS OUTBREAKS IN THE NETHERLANDS

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Session: Outbreaks

Presentation: Oral.

Background: Tuberculosis (TB) cases that belong to a cluster of the same Mycobacterium tuberculosis DNA fingerprint are assumed to be consequence of recent transmission. Targeting interventions to fast growing clusters may be an efficient way of interrupting transmission in outbreaks. *Objective:* To assess predictors for large growing clusters compared to clusters that remain small within a 2 years period. Design and method Out of the 10567 culture confirmed TB patients diagnosed between 1993 and 2004, 4783 (45%) had unique fingerprints while 5784 were part of a cluster. Of the clustered cases 673 were in a small (2 to 4 cases within the first 2 years) and 83 in a large cluster (more than 4 cases within the first 2 years). Results Independent risk factors for being a case within the first 2 years of a large cluster were non-Dutch nationality (OR = 6.38 95% CI [1.38–29.55]), concurrent pulmonary and extra-pulmonary tuberculosis (OR = 2.99 [1.24–7.22]), more than 5 years residence in the Netherlands (OR = 3.75 [1.80–7.81]), history of exposure to an infectious TB patient (OR = 4.42 [1.50–13.02]) and urban residence (OR = 2.43 [1.20–4.89]). Conclusion TB cases with above mentioned risk factors have increased risk of being part of a tuberculosis outbreak and may need intensified contact investigation.

636 ESTIMATE OF DEATHS ATTRIBUTABLE TO PASSIVE SMOKING IN GERMANY - A SENSITIVITY ANALYSIS

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Session: Smoking

Presentation: Oral.

Background: Passive smoking causes adverse health outcomes such as lung cancer or coronary heart disease (CHD). The burden of

passive smoking on a population level is currently unclear and depends on several assumptions. We investigated the public health impact of passive smoking in Germany. *Methods:* We computed attributable mortality risks due to environmental tobacco smoke (ETS). We considered lung cancer, CHD, stroke, COPD and sudden infant death. Frequency of passive smoking was derived from the national German health survey. Sensitivity analyses were performed using different definitions of exposure to passive smoking. *Results:* In total, 3301 deaths every year in Germany are estimated to be caused by exposure to passive smoking at home (women 2293, men 1008). Most of these deaths are due to CHD (2148) and stroke (774). Additional consideration of passive smoking at workplace increased the number of deaths to 3864. Considering any exposure to passive smoking and also active smokers who report exposure to passive smoking increased the number of deaths further. *Conclusions:* Passive smoking has an important impact on mortality in Germany. Even the most conservative estimate using exposure to ETS at home led to a substantial number of deaths related to passive smoking.

640 RISK OF CANCER AMONG DES DAUGHTERS

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Session: Pharmaco Epidemiology

Presentation: Oral.

DES daughters have a strongly increased risk of clear-cell adenocarcinoma of the vagina and cervix (CCAC) at a young age. Long-term health problems, however, are still unknown. We studied incidence of cancer, other than CCAC, in a prospective cohort of DES daughters (DESnet project). In 2000 13,674 questionnaires were sent to DES daughters registered at the DES Center in Utrecht. Also, informed consent was asked for linkage with disease registries. For this analysis, data of 12,219 responders and non-responders were linked to PALGA, the Dutch nationwide network and registry of histo- and cytopathology. Mean age at the end of follow-up was 41.7 years. A total of 244 incident cancers occurred. Increased standardized incidence rates (SIR) were found for vaginal/vulvar cancers (SIR = 4.1, 95% confidence interval (95% CI) 1.4–9.7), melanoma (SIR = 1.9, 95% CI 1.4–2.6) and breast cancer (SIR = 1.2, 95% CI 1.0–1.4) as compared to the general population. No increased risk was found for invasive cervical cancer, possibly due to effective screening. Results for breast and cervical cancer are consistent with the sparse literature. The risk of melanoma might be due to surveillance bias. Future analyses will include non-invasive cervical cancer, stage specific SIRs for melanoma and adjustment for confounding (sister control group) for breast cancer.

649 THE EFFECTIVENESS OF CONTACT TRACING IN EMERGING EPIDEMICS

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Session: Mathematical modeling of infectious diseases

Presentation: Oral.

Background: Contact tracing plays an important role in the control of emerging infectious diseases in both human and farm animal populations, but little is known yet about its effectiveness. Here we investigate in a generic setting for well-mixed populations the dependence of tracing effectiveness on the probability that a contact is traced, the possibility of iteratively tracing yet asymptomatic infectives, and delays in the tracing process. *Methods and Findings:* We investigate contact tracing in a mathematical model of an

emerging epidemic, incorporating a flexible infectivity function and incubation period distribution. We consider isolation of symptomatic infected as the basic scenario, and determine the critical tracing probability (needed for effective control) in relation to two infectious disease parameters: the reproduction ratio under isolation and the duration of latent period relative to the incubation period. The effect of tracing delays is considered, as is the possibility of single-step tracing vs. iterative tracing of quarantined infectives. Finally, the model is used to assess the likely success of tracing for influenza, smallpox, SARS, and foot-and-mouth disease epidemics. *Conclusions:* We conclude that single-step contact tracing can be effective for infections with a relatively long latent period or a large variation in incubation period, thus enabling backwards tracing of super spreading individuals. The sensitivity to changes in the tracing delay varies greatly, but small increases may have major consequences for effectiveness. If single-step tracing is on the brink of being effective, iterative tracing can help, but otherwise it will not improve much. We conclude that contact tracing will not be effective for influenza pandemics, only partially for FMD epidemics, and very effective for smallpox and SARS epidemics.

650 QUANTIFICATION OF THE TRANSMISSION OF AVIAN INFLUENZA IN HUMAN HOUSEHOLDS

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Session: Mathematical modeling of infectious diseases
Presentation: Oral.

Abstract: Infections of highly pathogenic H5N1 avian influenza in humans underline the need for tracking of the ability of these viruses to spread among humans. Here we propose a method of analysing outbreak data that allows determination of whether and to what extent transmission in a household has occurred after an introduction from the animal reservoir. In particular, it distinguishes between onward transmission from humans that were infected from the animal reservoir (primary human-to-human transmission) and onward transmission from humans who were themselves infected by humans (secondary human-to-human transmission). The method is applied to data from an epidemiological study of an outbreak of highly pathogenic avian influenza (H7N7) in the Netherlands in 2003. We contrast a number of models that differ with respect to the assumptions on primary versus secondary human-to-human transmission.

651 NETWORK MODELS IN EPIDEMIOLOGY

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Session: Mathematical modelling of infectious diseases
Presentation: Oral.

Usually models for the spread of an infection in a population are based on the assumption of a randomly mixing population, where every individual may contact every other individual. However, the assumption of random mixing seems to be unrealistic, therefore one may also want to consider epidemics on (social) networks. Connections in the network are possible contacts, e.g. if we consider sexually transmitted diseases and ignore all spread by other than sexual ways, the connections are only between people that may have intercourse with each other. In this talk I will compare the basic reproduction ratio, R_0 and the probability of a major outbreak of network models and for randomly mixing populations. Furthermore, I will discuss which properties of the network are important and how they can be incorporated in the model.

652 A REPRODUCTIVE POWER MODEL FOR EPIDEMIC OUTBREAK DATA.

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Session: Mathematical modelling of infectious diseases
Presentation: Oral.

In this talk a reproductive power model is proposed that incorporates the following points met when an epidemic disease outbreak is modeled statistically:

- 1) The dependence of the data is handled with a non-homogeneous birth process.
- 2) The first stage of the outbreak is described with an epidemic SIR model. Soon control measures will start to influence the process. These measures are in addition to the natural epidemic removal process. The prevalence is related to the censored infection times in such a way that the distribution function, and therefore the survival function, satisfies approximately the first equation of the SIR model. This leads in a natural way to the Burr-family of distributions.
- 3) The non-homogeneous birth process handles the fact that in practice, with some delay, it is the infected that are registered and not the susceptibles.
- 4) Finally the ending of the epidemic caused by the measures taken is incorporated by modifying the survival function with a final-size parameter in the same way as is done in long-term survival models. This method is applied to the Dutch Classical Swine Fever outbreak from 1997–1998 and the outbreak of H7N7 Avian Influenza in 2003.

POSTERS

2 COMPOSITIONAL AND CONTEXTUAL SOCIOECONOMIC RISK FACTORS FOR SUICIDE: INDIVIDUAL-ECOLOGICAL STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

The social and economic characteristics of geographic areas are associated with their suicide rates. The extent to which these ecological associations are due to the characteristics of the people living in the areas (compositional effects) or the influence of the areas themselves on risk (contextual effects) is uncertain. Denmark's Medical Register on Vital Statistics and its Integrated Database for Longitudinal Labour Market Research were used to identify suicides and 20 matched controls per case in 25–60 year old men and women. Individual and area (municipality) measures of income, marital and employment status were obtained. There were 9,011 suicides and 180,220 controls. After controlling for compositional effects, ecological associations of increased suicide risk with declining area levels of employment and income and increasing levels of people living alone were much attenuated. Individual-level associations with these risk factors were little changed when controlling for contextual effects. We found no consistent evidence that associations with individual level risk factors differed depending on the areas characteristics (cross-level interactions). This analysis suggests the ecological associations reported in previous studies are likely to be due in greater part to the characteristics of the residents in those areas than area-influences on risk, rather than to contextual effects.

3 PSYCHIATRIC ILLNESS, SOCIOECONOMIC AND MARITAL STATUS IN SUICIDE: A CASE-SIBLING-CONTROL STUDY

E.A. Agerbo University of Aarhus, AARHUS, Denmark

Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Suicides cluster in both families and individuals with psychiatric disorders and socioeconomic disadvantages. This study compares these factors between suicide cases, their siblings and population-based controls in an attempt to evaluate both the familial and the individual element of these factors. Nested case-sibling-control study of 985 suicide cases, 1104 siblings and 16619 controls with information from longitudinal Danish registers on psychiatric admission, labour market affiliation, educational attainment, gross income and marital status. The suicide risks obtained from the case-sibling and the case-control analysis, respectively, were of similar magnitude. For example, in the case-sibling analysis the adjusted suicide risk ratios associated with discharge from a psychiatric hospital within the previous 365 days, being unemployed the previous year, having a university education and being single were 42.13 [95% CI 17.75–100.02], 1.78 [1.35–2.36], 0.51 [0.21–1.26] and 2.69 [1.91–3.79], respectively. The corresponding risk ratios obtained from the case-control analysis were 47.91 [35.41–64.83], 1.76 [1.49–2.08], 0.45 [0.26–0.76] and 2.39 [1.87–3.07]. Moreover, the analogous rates between siblings and controls were 1.98 [1.08–3.63], 1.22 [1.06–1.41], 0.65 [0.44–0.95] and 0.89 [0.75–1.06]. Individuals who commit suicide deviate similarly from siblings and controls, although these factors contribute to the familial aggregation of suicides.

7 VITAMIN OR SUPPLEMENT USE AMONG ADULTS, BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 13 STATES, 2001

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: There is a growing interest in using dietary supplements to maintain health and prevent diseases in America. **Objective:** We examined vitamin/supplement (V/S) use and its association with sociodemographic, health behavior and health conditions. **Method:** We used 2001 data from a cross sectional survey among adults in 13 states, The Behavioral Risk Factor Surveillance system. **Results:** Of 45,415 eligible participants, 56.5% (n = 5,652) reported current use of V/S. After adjusting for age, gender, race/ethnicity and education, we found statistically significant association between V/S use and positive health behavior (AOR = 1.46, P < 0.001). We found no association between V/S use and the absence of specific chronic conditions. Also, V/S use increased with age (P < 0.001). **Conclusion:** people who use V/S in the state surveyed were more likely to have positive health behavior. It is important that individuals report quantity and frequency of V/S use when providing medical and diet histories.

11 LACK OF KNOWLEDGE ABOUT INDIVIDUAL'S HIV STATUS AS THE AIDS RISK FACTOR AMONG YOUTH IN DEVELOPING COUNTRIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Issue: The high percentage of AIDS/HIV in the third worlds is reinforced by the factor that majority of youth in third worlds do not know his/her HIV status. **Description:** A self developed validated and reliable questionnaire [r = 0.87] was used to collect 50,000 sample size for the study, selected through simple random sampling technique. The mean age is 25.5 years old. Relative Risk [RR] calculated is 3.1, i.e. RR > 1, indicating that the factor is the risk factor, and the Confidential Interval [CI] for RR at 95% Significant level is 2.61 < 3.1 < 3.90. **Lessons learned:** 70% of the sample population did know his/her HIV status and had had sexual intercourse in the past before, out which 20% had the unprotected intercourse once or more, 25% had protected sex while 25% were not sure of using protection means. While, 20% have knowledge about self HIV status and had had sexual intercourse before. 10% have no knowledge about self HIV status and had no sexual intercourse before. **Conclusions:** The lack of knowledge of individual's HIV status remains the only highest risk factor for the spread of AIDS in the third worlds.

12 PREVALENCE OF AND FACTORS ASSOCIATED WITH ASTHMA IN ADULT MALE LEATHER TANNERY WORKERS OF KARACHI, PAKISTAN

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

This is one of the first study in Pakistan aiming to estimate the prevalence of adult asthma as well as to identify the risk factors of

asthma in leather tannery workers. *Methods:* A cross sectional study was conducted from August 2003 to March 2004 on leather tannery workers of Karachi. Data were collected from 641 workers belonging to 95 tanneries in Korangi industrial area based on convenient sampling. Face to face interviews were performed using a structured questionnaire. *Results:* Prevalence of asthma was 10.8%. The prevalence was higher in illiterate workers compared to the literate ones (OR = 2.13, 95%CI: 1.17–3.88). Pathans were more likely to have asthma compared to Punjabi (OR = 2.69; 95%CI: 1.35–5.36). Smokers (OR = 2.22, 95%CI: 1.16–4.26) and those who never used gloves during work (OR = 3.28; 95%CI: 1.72–6.26) were more likely to have asthma than non-smokers and those who at least rarely used gloves, respectively. Those perceiving allergy to certain substances were at greater risk for asthma compared to non-allergic (OR = 2.26, 95%CI: 1.19–4.29), there was excess risk demonstrated with increasing duration of work only for those who perceived allergy. *Conclusions:* Asthma in tannery workers appears to be high and is associated with educational status, ethnicity, smoking, perceived allergy and glove use.

13 BREAST CANCER RISK FACTORS IN SOUTH OF IRAN: A CASE-CONTROL STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Breast cancer (BC) is the most common form of cancer in Iranian women. *Objectives:* To investigate the risk factors for BC in south of Iran. *Methods:* A case-control study was conducted among 168 women with pathologically confirmed primary BC and 504 age-matched controls from April 2002 to March 2004 in south of Iran by using a short structured questionnaire. Logistic regression analysis was used to obtain odds ratios (ORs) and 95% confidence intervals (CIs). *Results:* Family history of BC in first degree relatives was a significant risk factor (OR 7.09, 95% CI 4.06–12.26). Women with younger age at menarche (OR 4.00, 95% CI 1.82–9.84) and never married women (OR 2.84, 95% CI 1.64–6.43) were found to be at higher risk. Risk was significantly greater in women whose first full-term pregnancy was at age 30 or more (OR 7.79, 95% CI 4.25–9.12). In addition, more than 5 full-term pregnancies would be expected to correlate with an increase in the risk (X² 111.12, $p < 0.05$). In multivariate analysis, history of breast feeding is a significant factor in decreasing risk (OR 0.68, 95% CI 0.12–0.97). *Conclusions:* Some known risk factors for BC may differ in south of Iran as compared with other populations.

16 INCENTIVE SPIROMETRY FOR PREVENTING PULMONARY COMPLICATIONS AFTER CORONARY ARTERY BYPASS GRAFT SYSTEMATIC REVIEW

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Incentive spirometry (IS) is the treatment technique utilizing the incentive spirometer that was developed and introduced to reduce pulmonary complications during postoperative care. *Objectives:* To assess the effectiveness of IS for prevention of postoperative pulmonary complications (PPC) in adults undergoing coronary artery bypass graft (CABG). *Design and Methods:* The reviewers independently evaluated the quality of trials using the guidelines of the Cochrane Handbook and extracted data from included trials. *Results:* 4 trials (443 patients) contributed to this review. People given IS had more atelectasis ($P = 0.05$), and worse pulmonary function (vital capacity ($p < 0.00001$), forced expiratory volume in 1 second ($p = 0.0001$)) and oxygenation ($p = 0.0009$)

when compared with positive airway pressure (PAP) techniques. There was no evidence of a difference in the reduction of pneumonia between IS and PAP ($p = 0.51$). *Conclusions:* Individual small trials suggest that IS is no more effective than other type of prophylactic cardiorespiratory physiotherapy for reduce PPC in patients undergoing CABG. In view of modest number of patients, methodological shortcomings and poor reporting, this results should be interpreted cautiously, and an appropriately powered trial of high methodological rigours is justified to defined those patients who can be expected to derive most benefit from IS for people undergoing CABG.

19 'ACTIVITY-FRIENDLY' NEIGHBORHOODS FOR CHILDREN; HOW DO THEY LOOK LIKE?

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: To date, effects of Dutch urban planning on children's physical activity levels and the successive increase in the prevalence of overweight are unknown. *Objective:* To investigate the cross-sectional association between Dutch neighborhood characteristics and children's physical (in)activity level. *Design and Methods:* The study involved 1228 6- to 11-yr old children from ten Dutch neighborhoods; five received priority for spatial restructuring, the other five were matched on type of buildings, construction period, socioeconomic status, ethnicity, and age distribution. Physical activity was assessed by activity diaries and ActiGraph accelerometers. Neighborhood characteristics were scored using a checklist. Univariate analyses were performed. *Results:* Only 3% of the subjects (22% overweight; 9% obese; 51% girls) met the national physical activity guideline (60 minutes moderate-intensity activity per day). Their physical activity level was higher with the presence of sport grounds, low-rise buildings, pedestrian areas, green facilities, water, and car parks. The presence of intersections, heavy traffic, and trams, was negatively associated with children's physical activity level. *Conclusion and Discussion:* Physical (in)activity levels of 6- to 11-yr old children are associated with several characteristics of Dutch neighborhoods. The study should be repeated after spatial restructuring to investigate its effect on children's physical (in)activity levels.

21 PERCEIVED AGE AS A PREDICTOR OF OLD AGE MORTALITY: A 13-YEAR PROSPECTIVE STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objectives: to examine if in older people perceived age is associated with risk of total mortality independent of chronological age. *Design:* prospective population-based study (Evergreen project) with mortality surveillance for 13 years. *Setting:* face-to-face interview among community-dwelling residents of the city of Jyväskylä, Finland. *Subjects:* 395 men and 770 women aged 65 to 84 years at baseline. *Measures:* perceived physical age and perceived mental age were rated either as younger, the same or older in comparison to subject's chronological age. *Confounders:* chronological age, education, long-term illnesses, self-rated health, depression, and cognitive status. *Results:* The fully adjusted relative risk (RR) of death over 13 years with the perceived younger physical age category as referent was 1.42 (95% confidence interval, 1.00–2.02) in the older and 1.28 (1.03–1.60) and in the same age category. The crude RR of mortality for perceived mental age categories were 1.56

(1.09–2.23) in the older and 1.10 (0.92–1.31) in the same as compared to the younger category. *Conclusions:* perceived age predicted worsening of health as described as mortality. Perceived age may indicate general well-being and faith in the future, potentially reflecting changes in health.

23 GLUTATHIONE S-TRANSFERASES GSTM1 AND GSTT1 POLYMORPHISMS AND ASBESTOSIS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Relatively little is known about the genetic factors that might modify an individual's susceptibility for asbestosis. Reactive oxygen species (ROS) may be involved in the pathogenesis of asbestosis. Glutathione S-transferases (GST) inactivate the electrophiles produced by ROS. The GSTM1 and GSTT1 genes exhibit null polymorphism. The aim of the study is to investigate if the genetic polymorphism of GSTM1 and GSTT1 represents a risk for the development of asbestosis. *Methods:* The study population comprises 249 cases with asbestosis and 265 subjects with no asbestos disease as controls, selected from the cohort of 2080 workers presented at the Board for Recognition of Occupational Diseases between 1998 and 2004. Cumulative exposure for each subject was available. To analyse GSTM1 and GSTT1 null alleles, triplex Polymerase Chain Reaction (PCR) was used. Logistic regression has been used to calculate the risk of getting asbestosis related to cumulative exposure, GSTM1 and GSTT1. *Preliminary results:* Asbestosis was associated with cumulative exposure (OR = 3.96, CI 2.71–5.78) and GSTT1-null genotype (OR = 0.63, CI 0.41–0.97), but not with GSTM1-null genotype (OR = 1.01, CI 0.70–1.4). *Conclusion:* GSTT1-null genotype is associated with a decreased risk for asbestosis. The influence of cumulative exposure, smoking and genetic polymorphism will be further investigated.

25 GENDER DIFFERENCES IN THE RELATION BETWEEN NUMBER OF TEETH AND SYSTOLIC BLOOD PRESSURE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Tooth loss predicts circulatory mortality. The reasons for such association may be related to enhanced atherosclerosis, elevated arterial pressure and more frequent hypertension. *Objectives:* The present study was designed to investigate the possible association between the number of teeth and arterial pressure or hypertension. *Design and Methods:* We used data of 4200 adult subjects (2156 women) collected for the population-based Study of Health in Pomerania. The number of teeth was counted by certified dentists. Hypertension was defined as systolic blood pressure >140 mmHg or diastolic blood pressure >90 mmHg or use of antihypertensive medication. Multivariable analyses were adjusted for relevant confounders. *Results:* The adjusted mean (standard error) systolic blood pressure in men having 0–6 teeth was 149.6 mmHg (1.2 mmHg) compared to 142.7 mmHg (1.2 mmHg) in men having 27–28 teeth ($p < 0.05$). The adjusted odds for hypertension in men with 0–6 teeth compared to men with 27–28 teeth were 1.91 (95%-confidence interval 1.21; 3.01, $p < 0.05$). In women no such relations were found. *Conclusion:* There is an

inverse association of the number of teeth with systolic blood pressure and hypertension in men but not in women. *Discussion:* The present findings partly explain the relation between tooth loss and mortality.

26 PSYCHOSOCIAL WORK EXPOSURES PREDICTORS OF WORK-ROLE FUNCTIONING AFTER CARPAL TUNNEL RELEASE SURGERY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Carpal tunnel syndrome (CTS) is one of the most prevalent and costly upper extremity musculoskeletal conditions in the USA. Evidence of the impact of psychosocial work exposures on return to work (RTW) and worker's functional status upon RTW (i.e., work role functioning or WRF) is limited. *Objectives:* To examine the role of the job strain model on RTW and WRF following CTS surgery. *Design and Methods:* Community-based cohort of 128 CTS patients at 2 months and 122 at 6 months in Maine. A 3-level outcome: (1) not RTW for health reasons, (2) RTW and WRF with limitations, or (3) RTW and successfully WRF. Following the job strain model, the Karasek quadrants, the job strain and the active learning quotients were computed. *Results:* Using ordinal logistic regression, active jobs at two months (OR = 0.22; $p = 0.014$) and high strain jobs at 6 months (OR = 0.14; $p = 0.001$) months, predicted not RTW or poorly WRF. *Conclusions and Discussion:* The findings underscore the role of psychosocial work conditions in RTW and WRF. Active workers may be more likely to remain out of work longer as a strategy to avoid or reduce stressful working conditions. High strain results are in agreement with the job strain model.

28 CROSS-BORDER EPIDEMIOLOGICAL STUDIES AND ACTIVITIES TO DECREASE RISKY BEHAVIOUR ADOLESCENTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

The Euregion Meuse-Rhine (EMR) is an area with different regions, regarding language, culture and law. Organisations and institutions received frequently signals about an increasing and region-related consumption of addictive drugs and risky behaviour of adolescents. As a reaction 11 institutions from 4 regions of the EMR started a cross-border cooperation project 'Risky Behaviour Adolescents in the EMR'. The partners intend to improve the efficiency of prevention programmes by investigating the prevalence and pre-conditional aspects related to risky behaviour, and creating conditions for best-practice-public-health. The project included two phases: Study. Two cross-border (epidemiological) studies were realized: a quantitative study of the prevalence of risky behaviour (46000 pupils) and a qualitative study mapped pre-conditional aspects of risky behaviour and possibilities to preventive programmes. Implementation. This served bringing about recommendations on policy level as well as on prevention level. During this phase the planning and realisation of cross-border prevention programmes and activities started. There is region-related variance of prevalence in risky-behaviour of adolescents in de EMR. Also there are essential differences in legislation and regulation, (tolerated) policy, prevention structures, political and organizational priorities and social acceptance toward stimulants. Cross-border studies and cooperation between institutions have resulted in best-practice-projects in (border) areas of the EMR.

29 USE OF STATINS, RISK OF FRACTURE AND AGE-BAND BIAS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: In 2000 and 2001, two case-control studies were independently conducted to evaluate the association between use of statins and risk of fracture. Both studies used the same study data source, the UK General Practice Research Database (GPRD), but found opposite results. The objective of this study was to determine whether the matching procedure may have been the reason for this. **Methods:** We repeated both study designs in GPRD: a 'nested' case-control dataset (from a selected cohort), and a 'population-based' case-control dataset, sampled from the total GPRD population. Cases and controls were matched by gender, age (5-year band) and general practice. **Results:** The study included 131,855 fracture cases. In the 'nested' case-control dataset, only 37% of the cases were matched by same year of birth, while this was 99% in the 'population-based' dataset. The crude OR for hip fracture in statin users differed between the two designs (0.37 [95% CI 0.27–0.52] in the 'nested' and 0.54 [95% CI 0.39–0.74] in the 'population-based' dataset). But this difference reduced when matching by year of birth, rather than by 5-year band. **Conclusion:** The 5-year age band may have been the cause of contrasting results between the nested and a population based case-control study.

30 USE OF BETA-2 AGONISTS AND RISK OF HIP FRACTURE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Beta-blockers increase bone strength in mice and may reduce fracture risk in humans. Therefore, we hypothesized that inhaled beta-2 agonists may increase risk of hip fracture. **Objective:** To determine the association between daily dose of beta-2 agonist use and risk of hip fractures. **Methods:** A case-control study was conducted among adults who were enrolled in the Dutch PHARMO database (n = 950,000). Cases (n = 6,763) were patients with a first hip fracture. The date of the fracture was the index date. Four controls were matched by age, gender and region. We adjusted our analyses for 10 indicators of asthma/COPD severity, and for disease and drug history. **Results:** Low daily doses (DDs) (<400 ug albuterol eq.) of beta2-agonists (crude OR 1.2, 95% CI 0.8–1.8) did not increase risk of hip fracture, in contrast to high DDs (>1600 ug albuterol eq., crude OR 2.0, 95% CI 0.15–2.7). After extensive adjustment for indicators of the severity of the underlying disease, (including corticosteroid intake), fracture risk in the high DD group decreased to 1.5 (95% CI 1.1–2.1). **Conclusions:** High DDs of beta-2 agonists are linked to increased risk of hip fracture. Extensive adjustments for the severity of the underlying disease is important when evaluating this association.

31 UPOD: CLINICAL PHARMACOEPIDEMIOLOGICAL RESEARCH FROM A LABORATORY PERSPECTIVE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Linkage of laboratory data with other clinical data within a research database would provide valuable data for pharmacoepidemiological research concerning adverse drug reactions (ADR), evaluation of drug treatment, outcomes research and drug-test interference. To develop an infrastructure of relational databases comprising patient-oriented clinical and administrative data for clinical pharmacoepidemiological research from a laboratory perspective. Patient histories regarding laboratory results, medication orders, demographics, discharge diagnoses and therapeutic procedures for all patients that were hospitalised at the UMC Utrecht since January 2004 onwards were disclosed from the hospital information system into databases. Data were checked for completeness and integrity. Methods for updating, linking and questioning the databases were developed. Privacy aspects regarding data handling and identification of patients were considered. The Utrecht Patient Oriented Database (UPOD) was established and can be used for pharmacoepidemiological research. Studies currently conducted within UPOD concern laboratory monitoring for early-detection of heparin-induced thrombocytopenia and the identification of patients with difficult-to-treat asthma with laboratory parameters. UPOD enhance the possibilities for clinical pharmacoepidemiologic research by linking laboratory data to medication data for a large population. Studies within UPOD can contribute to our knowledge with regard to ADR and drug therapy in clinical practice, and finally to patient care.

34 SALIVARY NITRATE / NITRITE AND WATER NITRATE EXPOSURE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Salivary nitrate arises from ingested nitrate and is the main source of gastric nitrite, a precursor of carcinogenic N-nitroso compounds. We examined the nitrate and nitrite levels in saliva of children who used private wells for their drinking water supply. Saliva was collected in the morning, from 150 children aged 7–16 years. Control group (n = 50) drank water containing 0.03–15.5 mg/l (milligrams/litre) nitrate. Exposure groups consisting of subjects (n = 50) who used private wells with nitrate levels in drinking water below 50 mg/l (mean ± standard deviation 20.05 ± 11.42 mg/l) and above 50 mg/l (n = 50) (141.32 ± 80.56 mg/l) respectively. The nitrate and nitrite of saliva samples was determined by high performance liquid chromatographs method. The values of nitrate in saliva samples from exposed groups ranged between 4.57 to 25.94 mg/l (15.33 ± 8.88 mg/l). For control groups, the levels of 0.89 to 14.57 mg/l (7.18 ± 4.54 mg/l) were registered. No differences between levels of salivary nitrite from control and exposed groups were found. Regression analysis on water nitrate concentrations and salivary nitrate showed significant correlations. In conclusion, we estimate that salivary nitrate may be used as biomarkers of human exposure to nitrate.

36 TRIHALOMETHANES IN DRINKING CHLORINATED WATERS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Disinfection of public drinking water supplies produces trihalomethanes. Epidemiological studies have associated chlorinated disinfection by-products with cancer, reproductive and developmental effects. We studied the levels of trihalomethanes (chloroform, dibromochloromethane, bromodichloromethane, bromoform) in drinking water delivered to the population living in some urban areas (n=20). The water samples (n=150) were analysed using gas chromatographic method. Assessment of exposure to trihalomethanes in tap water has been on monitoring data collected over 2–12 months periods and that we averaged over entire water system. Analytical data revealed that total trihalomethanes levels were higher in the summer: mean \pm standard deviation $72.07 \pm 42.88 \mu\text{g/l}$ (micrograms/litre). These organic compounds were present in the end of distribution networks ($9.87 \pm 5.87 \mu\text{g/l}$). It is noted that, sometimes, we found high concentrations of chloroform exceeding the sanitary norm ($100 \mu\text{g/l}$) in tap water (maximum value $41.65 \mu\text{g/l}$). Results of sampling programs showed stronger correlations between chlorine and trihalomethanes value (correlation coefficient $r = 0.821$ to 0.952 , credible 95% interval). In conclusion, the population drank water with the low concentration of trihalomethanes, especially chloroform.

39 PREVALENCE OF CHRONIC ATROPHIC GASTRITIS IN DIFFERENT PARTS OF THE WORLD

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Chronic atrophic gastritis (CAG) is an established precursor of intestinal gastric cancer, but epidemiological data about its occurrence are sparse. **Objectives:** We aimed to give a systematic overview of studies that examined the prevalence of CAG throughout the world. **Design and Methods:** Articles containing data about the prevalence of chronic atrophic gastritis in unselected population samples were identified by searching the MEDLINE database and cross-referencing. **Results:** Forty-one studies providing data on the prevalence of CAG in unselected population samples could be identified. CAG was determined by gastroscopy in 15 studies and by pepsinogen (PG) serum levels in 26 studies. Although results are difficult to compare due to the various definitions of CAG used, a strong increase with age, the lack of major gender differences, and strong variations between populations and population groups (in particular relatively high rates in certain Asian populations) could be observed quite consistently. **Conclusion and Discussion:** In conclusion, CAG is relatively common among older adults throughout the world, but large variations exist. Large scale international comparative studies with standardized, non-invasive methods to determine CAG, such as measurement of serum pepsinogen levels, are needed to provide a coherent picture of the epidemiology of CAG in various populations.

40 PREDICTING FACTORS FOR SERONEGATIVITY OF IGG ANTIBODIES AGAINST MEASLES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Surveying the number of individuals with no protective antibodies and identifying the factors that keep these individ-

uals susceptible are very important in programs for the control of measles because of the strength of transmission of this virus. **Objective:** to identify the biological, social, economic and behavioral characteristics of individuals who are seronegative for measles. **Method:** case-control study. Cases (negative serology) and controls (positive serology) were selected from a survey of IgG antibodies to measles in a sample of the population. Variables regarding seroprevalence and frequency of exposure were evaluated using OR and logistic regression. **Results:** Seronegativity was significantly associated with a history of allergic disease; no prior history of measles; current or past immunodeficiency, and not being born in Salvador. In the multivariate analysis, a statistical association was found for no prior history of measles (OR = 1.93; 1.22–3.06); not being born in Salvador (OR = 2.10; 1.24–3.54); and current immunodeficiency (OR = 7.27; 1.47–35.88). **Conclusions:** Immunization programs are necessary and require prior information on the immunological state of children. Because of the importance of migration in relation to the variations in immunity, specific surveillance should be instituted for this group.

45 PERCEIVED STRESS AND RISK OF ENDOMETRIAL CANCER

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Stress may affect the synthesis and metabolism of estrogens and thereby influence endometrial cancer risk. This association has not previously been addressed in a prospective study. **Objective:** To assess the relation between perceived stress and first-time incidence of primary endometrial cancer. **Design and Methods:** The 6,787 women participating in the Copenhagen City Heart Study were asked about their stress level in 1981–83. These women were prospectively followed up in the Danish nationwide cancer registry until 2000 and less than 0.1 % was lost to follow-up. Cox proportional hazard models were used to analyze data. **Results:** During follow-up 72 women were diagnosed with endometrial cancer. For each increase in stress level on a seven-point stress-scale there was a lower risk of primary endometrial cancer (Hazard ratio = 0.88, 95 % CI: 0.76 to 1.01). This inverse association was particularly strong in normal-weight women (HR = 0.73, 95 % CI: 0.58–0.91) and in women who receive hormone therapy (HR = 0.77, 95 % CI: 0.61 to 0.96). **Conclusion and Discussion:** Stress may affect gonadal synthesis of estrogens and alter the sensitivity of the uterus toward estrogen stimulation. These mechanisms may explain the lower risk of endometrial cancer observed among stressed women in this study.

46 MORTALITY DUE TO LONG-TERM CIGARETTE, CIGAR AND PIPE SMOKING.THE ZUTPHEN STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Although smoking is a known major health threat, the impact of various aspects of long-term smoking remains unclear. **Objectives:** We studied the impact of amount and duration of smoking on mortality, and estimated the effects of various types of

smoking on life expectancy. *Design and Methods:* Subjects consisted of 1373 Dutch men from the Zutphen Study, born between 1900 and 1920. Information on smoking habits was collected longitudinally in 7 surveys carried out between 1960 and 2000. Time-dependent Cox proportional hazard analyses were performed and differences in life expectancies were determined by calculating the area under survival curves. *Results:* Both duration and amount of cigarettes smoked was strongly associated with mortality. Cigarette, cigar and pipe smoking reduced total life expectancy by, respectively, 6.8 (95%CI: 6.6–6.9), 5.1 (4.9–5.3) and 5.8 (5.5–6.1) years. Smoking longer and more increased the number of life-years lost, while life-years were gained by stopping smoking. The effects on morbidity-free life expectancy were smaller. *Conclusion:* All types of smoking, smoking more and longer reduce life expectancy with and without diseases substantially; and stopping smoking has major health benefits.

47 VALIDITY OF THE DYNAPORT® KNEE TEST IN ADULTS WITH NON-TRAUMATIC KNEE COMPLAINTS IN GENERAL PRACTICE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objective: To determine the validity of a performance-based assessment of knee function, DynaPort[RSYMBOL] KneeTest (DPKT), in first-time consulters with non-traumatic knee complaints in general practice. *Methods:* Patients consulting for non-traumatic knee pain in general practice aged 18 years and older were enrolled in the study. At baseline and 6-months follow-up knee function was assessed by questionnaires and the DPKT; a physical examination was also performed at baseline. Hypothesis testing assessed cross-sectional and longitudinal validity of the DPKT. *Results:* A total of 87 patients were included for DPKT of which 86 were available for analysis. The studied population included 44 women (51.2%), median age was 54 (range 18–81) years. At follow-up, 77 patients (89.5%) were available for DPKT. Only 3 out of 11 (27%) predetermined hypotheses concerning cross-sectional and longitudinal validity were confirmed. Comparison of the general practice and secondary care population showed a major difference in baseline characteristics, DynaPort Knee Score, internal consistency and hypotheses confirmation concerning the construct validity. *Conclusion:* The validity of the DPKT could not be demonstrated for first-time consulters with non-traumatic knee complaints in general practice. Measurement instruments developed and validated in secondary care are not automatically also valid in primary care setting.

48 LIFESTYLE, RADIATION AND CANCER RISK

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Although animal studies have described the protective effects of dietary factors supplemented before radiation exposure, little is known about the lifestyle effects after radiation exposure on radiation damage and cancer risks in human. The purpose of this study is to clarify whether lifestyle can modify the effects of radiation exposure on cancer risk. A cohort of 40,000 Japanese atomic-bomb survivors, for whom radiation dose estimates were currently available, had their lifestyle assessed in 1980. They were followed

during 20 years for cancer incidence. The combined effect of smoking, drinking, diet and radiation exposure on cancer risk was examined in additive and multiplicative models. Combined effects of a diet rich in fruit and vegetables and ionizing radiation exposure resulted in a lower cancer risk as compared to those with a diet poor in fruit and vegetables and exposed to radiation. Similarly, those exposed to radiation and who never drink alcohol or never smoke tobacco presented a lower oesophagus cancer risk than those exposed to radiation and who currently drink alcohol or smoke tobacco. There was no evidence to reject either the additive or the multiplicative model. A healthy lifestyle seems beneficial to persons exposed to radiation in reducing their cancer risks.

50 BRINGING CLINICAL TRIALS INTO THE REALITY OF USUAL CARE - RESULTS OF A LONG-TERM ANALYSIS OF SIROLIMUS-ELUTING STENTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Clinical trials have shown significant reduction in major adverse cardiac events (MACE) following implantation of sirolimus-eluting (SES) vs. bare-metal stents (BMS) for coronary artery disease (CAD). *Objective:* To evaluate long-term clinical outcomes and economic implications of SES vs. BMS in usual care. *Methods:* In this prospective intervention study, CAD patients were treated with BMS or SES (sequential control design). Standardized patient and physician questionnaires 3, 6, and 12 months following implantation documented MACE, disease-related costs and patient quality of life (QoL). *Results:* 602 patients treated with SES (mean age 63 ± 9, 87% male), 295 with BMS (mean age 65 ± 10, 79% male). There were no significant baseline differences in cardiovascular risk factors and severity of CAD. After 12 months, 18% SES vs. 30% BMS patients had suffered MACE (p < 0.05). Initial hospital costs were higher with SES than with BMS, but respective 12-month follow-up direct and indirect costs were lower (5,052 ± 642 vs. 6,052 ± 590 Euro and 753 ± 459 vs. 2,013 ± 422 Euro, p = ns). Overall, disease-related costs were similar in both groups (SES 11,765 ± 827, BMS 11,826 ± 760, p = ns). Differences in QoL were not significant. *Conclusions:* As in clinical trials, SES patients experienced significantly fewer MACE than BMS patients during 12-month follow-up with similar overall costs and QoL.

51 SUBGROUP ANALYSES IN INDIVIDUAL PATIENT DATA META-ANALYSES REQUIRE IMPROVEMENT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Meta-analyses that use individual patient data (IPD-MA) rather than published data have been proposed as an improvement in subgroup-analyses. *Objective:* To study

- 1) Whether and how often IPD-MA are used to perform subgroup-analyses
 - 2) Whether the methodology used for subgroup-analyses differs between IPD-MA and meta-analyses of published data (MAP)
- Methods:* IPD-MA were identified in Pubmed. Related article search was used to identify MAP on the same objective. Meta-analyses not performing subgroup-analysis were excluded from further analyses. Differences between IPD-MA and MAP were

analysed, reasons for discrepancies were described. *Results:* Hundredthirty-six IPD-MA and 92 related MAP were identified. IPD-MA comprised 142 and MAP 93 treatment comparisons. In 80% of IPD-MA and 45% of MAP subgroup analyses were presented. For 29 IPD-MA and 33 'matched' MAP, subgroup analytic methods could be compared. The IPD-MA and MAP did not differ with respect to number of subgroups and differed with respect to the use of interaction test, and stratification by trial. *Conclusion:* Most IPD-MA comprised subgroup-analyses, but the main reason for performing an IPD-MA remained the estimation of an overall treatment effect. To optimise the results of subgroup-analyses in IPD-MA, it would be helpful to describe more formally the principles and methods.

54 A DIAGNOSTIC TOOL TO SAFELY EXCLUDE DVT IN PRIMARY CARE: A VALIDATION STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

We recently developed a simple diagnostic rule (including 7 history and physical findings plus D-dimer assay results) to safely exclude the presence of deep vein thrombosis (DVT) without the need for referral in primary care patients suspected of DVT. When applied to new patients, the performance of any (diagnostic or prognostic) prediction rule tends to be lower than expected based on the original study results. Therefore, rules need to be tested on their generalizability. The aim was to determine the generalizability of the rule. In this cross-sectional study, 532 primary care patients with suspicion of DVT were prospectively identified. The 8 rule items were obtained from each patient plus ultrasonography as reference standard. The accuracy of the rule was quantified on its discriminative performance, sensitivity, specificity, negative predictive value, and negative likelihood ratio, with accompanying 95% confidence interval. DVT could be safely excluded in 21% (23% in the original study) of the patients, without referral. None of these patients had DVT (0.7% in the derivation population). In conclusion, the rule appears to be a safe diagnostic tool for excluding DVT in patients suspected of DVT in primary care.

55 POLYMORPHISMS IN MMPS IN RELATION TO ACCELERATED DECLINE IN LUNG FUNCTION IN THE GENERAL POPULATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Matrix Metalloprotease (MMP) 1 and MMP12 degrade extracellular matrix in the lungs. *Objectives:* To study whether single nucleotide polymorphisms (SNPs) in MMP1 and MMP12 are associated with COPD development and accelerated decline in forced expiratory volume in 1 second (FEV1) in the general population. *Methods:* 1390 Caucasians from a cohort followed-up for 25 years (51% male, pack-years (median (range)) 8 (0–161), age 52 (35–79) years, FEV1%predicted 92 (15–137)) were genotyped for MMP1 G-1607GG and MMP12 A-82G and Asn357Ser. COPD was defined as GOLD stage = 2. Differences in SNP prevalence were analyzed for COPD versus normals, and fast-decliners versus non-decliners (respectively highest and lowest 10th percentile FEV1 decline in the population), using Chi-square tests. Genotype-effects on FEV1 decline were analyzed using linear mixed effect models, adjusted for confounders. *Results:* MMP1 or MMP12 SNPs were not associated with COPD development, or

accelerated FEV1 decline. The MMP1 –1607GG allele was significantly more prevalent in fast-decliners compared to non-decliners (58% vs. 43%, N = 125 per group, median decline respectively –56.0 ml/y vs. +15.3 ml/y). *Discussion:* Since the MMP1 G-1607GG SNP was only associated with the 10% fast-decliners, MMP1 may contribute specifically to development of more severe COPD. Funded by the Netherlands Asthma Foundation

59 ENVIRONMENTAL EXPOSURE TO ASBESTOS INCREASES THE RISK OF MESOTHELIOMA IN WOMEN IN THE REGION GOOR

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Long-term exposure to very low concentrations of asbestos in the environment and relation to incidence of mesothelioma contributes to insight into the dose-response relationship and public health policy. Aim: To describe regional differences in the occurrence mesothelioma in the Netherlands in relation to the occurrence in the asbestos polluted area around Goor and to determine whether the increased incidence of pleural mesothelioma among women in this area could be attributed to environmental exposure to asbestos. *Methods:* Mesothelioma cases were selected in the period 1989–2002 from the Netherlands Cancer Register (n = 4781). For the women in the region Goor (n = 30) exposure to asbestos due to occupation, household or environment was verified from the medical files, the general practitioner and next-of-kin for cases. *Results:* In Goor the incidence of pleural mesothelioma among women was 5-fold increased compared with the Netherlands and among men 2-fold. Of the additional 19 cases among women, 11 cases were attributed to the environmental asbestos pollution and in 4 cases this was the most likely cause. The average cumulative asbestos exposure was estimated at 0.1 fiber-years. *Conclusions:* The lifetime environmental asbestos exposure of 0.1 fiber-year resulted in an additional incidence of one case per year among women.

61 INCIDENCE OF MULTIPLE SCLEROSIS IN BELGRADE (SERBIA). 20 YEARS OF FOLLOW-UP

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Population-based Multiple Sclerosis (MS) Registries are widely used to generate data of patients with MS in order to obtain long-term information on relevant epidemiological and clinical determinants of the disease. The aim of this study was to estimate incidence of MS in the population of Belgrade during the period 1985–2004, according to the population-based MS Registry data. In the analysis, age-, sex-, and cause-specific incidence rates, with corresponding 95% confidence intervals (CI), were used. The cumulative incidence was calculated in order to estimate the individual risk of acquiring MS in Belgrade. From 1985 to 2004, 707 patients (245 males and 462 females) were registered in the region of Belgrade, as incident MS cases. The mean age at the onset was 30.21±9.79 years. The average annual standardized incidence rate for the observed period was 2.3/100,000 (95%CI 1.8–2.7), 1.7/100,000 (95%CI 1.4–2.0) for males and 2.8/100,000 (95%CI

2.2–3.4) for females. The highest age-specific incidence rate was registered in the age group 30–34 years (6.3/100,000), as well as, for those with relapsing remitting form of MS (1.6/100,000). In the population of Belgrade, the cumulative probability of acquiring MS was 1:687. During the period studied, the trend of MS incidence was stable.

63 A DECENTRALIZED DRUG BUDGET INCREASE ADHERENCE TO GUIDELINES FOR STATIN PRESCRIBING ? A MULTI-LEVEL APPROACH

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Since the costs of medication are growing in the county of Scania, Sweden, a decentralized drug budget was implemented in the county in January 2004. It was expected that increased local economical responsibility would improve adherence with efficient prescription guidelines. **Objectives:** Focusing on lipid lowering drugs (i.e., Statins), we evaluated the effect of the intervention across a 14-month period. A successful intervention would increase the prevalence and decrease the variance between outpatient health care centres (OHCs) regarding adherence to guidelines. **Design and Methods:** We applied multilevel regression analysis on 91 831 individual prescriptions (level 1) nested within 427 OHCs (level 2), that were nested within 20 administrative areas (AA) (level 3). Temporal trends and gender differences were investigated by random slope analysis. Variance was expressed using median odds ratio (MOR). **Results:** OHCs appeared to be more relevant than administrative areas for understanding physicians' propensity to follow prescription guidelines (MOR_OHC = 2.7 and MOR_AA = 1.5). **Conclusion and Discussion:** As expected, the intervention increased prevalence and decreased variance, but at the end of the observation period practice variation remained high. These results may reflect inefficient therapeutic traditions, and suggest that more intensive interventions may be necessary to promote rational statin prescription.

64 MORTALITY HAS DECREASED BETWEEN 1970 TO 2000 IN SKÅNE, SWEDEN, BUT MUNICIPALITY DIFFERENCES ARE INCREASING AGAIN

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Mortality rates in Skåne, Sweden have decreased in recent years. If this decline has been similar for different geographical areas have not been examined closely. **Objectives:** We wanted to illustrate trends and geographical inequities in all cause mortality between the 33 municipalities in Skåne, Sweden from 1970 to 2000. We also aimed to explore the application of multi-level regression analysis (MLRA) in our study, since it is a relatively new methodology when describing mortality rates. **Design and Methods:** We used linear MLRA with years at the first level and municipalities at the second to model direct age-standardized rates. Temporal trends were examined by random slope analysis. Variance across time was expressed using intra-class correlation (ICC). **Results:** The municipality level was very relevant for understanding temporal differences in mortality rates (ICC = 26 %). In average, mortality decreased by $34/10^4$ along the study period but this trend varied considerably between municipalities. Geographical inequities along the years were U-shaped with lowest variance in the 80s (var = 26). **Conclusion:** Mortality has

decreased in Skåne but municipality differences are increasing again. MLRA is a useful technique for modelling mortality trends and variation among geographical areas.

65 AMBIENT OZONE AND GENERAL PRACTITIONER VISITS FOR LOWER RESPIRATORY SYMPTOMS IN SUMMER IN DIFFERENT PATIENT GROUPS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Ozone has adverse health effects but it is not clear who is most susceptible. **Objective:** Identification of individuals with increased ozone susceptibility. **Methods:** Daily visits for lower respiratory symptoms (LRS) in 6 General Practitioner (GP) offices in the north of The Netherlands (1989–2000, 38000 patients) were related to daily ozone levels in summer. Ozone effects were estimated for patients with asthma, COPD, atopic dermatitis, and cardiovascular diseases (CVD) and compared to effects in patients without these diseases. Generalized additive models adjusting for trend, weekday, temperature, and pollen counts were used. **Results:** The mean daily number of LRS-visits in summer in the GP-offices varied from 1.3 to 8.5. Mean (sd) 8-hour maximum ozone level was 62.6 (30.5) $\mu\text{g}/\text{m}^3$. RRs (95% CI) for a 90 $\mu\text{g}/\text{m}^3$ increase (from 5th to 95th percentile) in the mean of lag 0 to 4 of ozone for patients with/ without disease are: Asthma 1.22 (1.03–1.44)/1.01 (0.91–1.13), COPD 1.13 (0.99–1.30)/1.01 (0.90–1.14), Atopic dermatitis 1.18 (1.03–1.35)/1.02 (0.94–1.11), CVD 1.28 (0.99–1.67)/1.04 (0.93–1.18). For patients with asthma, atopic dermatitis, or CVD the RR is outside the 95%CI of those without disease. **Conclusion:** Patients with respiratory, atopic, or cardiovascular diseases have increased susceptibility to ozone. Funded by Stichting Astma Bestrijding.

67 COST OF ASTHMA IN SPAIN FROM 1998–2002

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Asthma is a costly health condition, its economic effect is greater than that estimated for AIDS and tuberculosis together. Following Global Initiative for Asthma recommendations that require more data about the burden of asthma, we have determined the cost of this illness from 1998–2002. An epidemiological approach based on population studies was made to estimate global as well as direct and indirect costs. Data were obtained mainly from the National Health Ministry database, the National Statistics Institute of Spain and the National Health Survey. The costs were averaged and adjusted to 2002 €. We have found a global burden (including private medicine) of 920 million €. Indirect and direct costs account for 35.4 and 64.6%. The largest components within direct costs were pharmaceutical (29.6%), primary health care systems (8.4%), hospital admissions (5.2%) and hospital non-emergency ambulatory visits (3.2%). Within indirect costs, total cessation of work days (19.4%), permanent labour incapacity (8.5%) and early mortality (3.1%) costs were the main components. Pharmaceutical cost is the first component as in most studies from developed countries, followed by primary health care systems unlike some reports that consider hospital admissions in second place. Finally, direct costs represent 1.3% of the total health care expenditure.

68 ADIPONECTIN IN HUMAN MILK AMONG A POPULATION BASED SAMPLE FROM GERMANY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The adipocytokine adiponectin is present in cord blood, placental and fetal tissues, suggesting its possible role in fetal development. To our knowledge the presence of adiponectin in human milk has not been assessed so far. **Objectives:** We examined the presence and concentrations of adiponectin in human milk and described its associations with adiponectin in maternal serum and cord blood among a large group of mothers and their infants in Germany. **Methods:** Between November 2000 and November 2001 all mothers and their newborns were recruited after delivery at the University of Ulm, Germany. Milk samples were collected 6 weeks post-partum. Adiponectin levels were determined by a commercially available ELISA. **Results:** Overall, 1066 mothers participated in the study. Adiponectin was detectable in all milk samples. Median levels in milk (n = 767), maternal serum (n = 995) and cord blood (n = 986) were 10.9 ng/ml, 82.3 ng/ml, and 304.8 ng/ml, respectively. Milk adiponectin levels were positively associated with adiponectin levels in maternal serum (Spearman's rho: 0.42; p < 0.0001), but not in cord blood. **Conclusions:** For breastfed neonates human milk is an additional source of adiponectin, whose role in the infant's development requires further investigation.

71 AIDS CASES AND SURVIVAL AMONG INJECTING DRUG USERS IN SAO PAULO STATE, BRAZIL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Injecting drug users (IDU) have played an important role in the spread of HIV in Europe, United States and Latin America. **Objectives:** To estimate AIDS survival time among IDU compared to other exposure categories per Aids-case definition in Sao Paulo State, Brazil. **Design and methods** Sao Paulo State 73923 AIDS cases diagnosed during the 1992–1995 and 1998–2001 periods for people aged 13 and older. Kaplan-Meier survival time. **Results:** For sexual contact included patients diagnosed by asymptomatic Brazilian CD4 < 350 mm³ and death definitions, the estimated first quarter survival time improved from 2 months in 1992–1995 to 62 months in 1998–2001; taking into account only symptomatic Aids-case definitions (CDC/modified and/or Paho/Caracas) the improvement was from 4 months to 19 months. For IDU, taking into account only symptomatic Aids-case definition, the improvement was from 4 months to 9 months. **Conclusion and Discussion:** The survival improvement in Sao Paulo State was due to the introduction of antiretroviral therapy with universal access; and to earlier diagnosis associated with the introduction in 1998 of CD4 < 350 mm³ Aids-case definition with superior sensitivity. IDU, specifically, were diagnosed later and presented the highest hazard ratio and the slightest survival time improvement.

74 ASSOCIATION BETWEEN PHENOTYPICAL CHARACTERISTICS AND THE RISK OF UVEAL MELANOMA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: It is well known that fair phenotypical characteristics are a risk factor for cutaneous melanoma. The aim of our study was to investigate the analogous associations between phenotypical characteristics and uveal melanoma. **Design/methods:** In our case-control study we compared incident uveal melanoma patients with population controls to evaluate the role of phenotypical characteristics like iris-, hair- and skin color and other risk factors in the pathogenesis of this tumor. A total of 455 patients and 827 controls matched on sex, age and region were interviewed. Conditional logistic regression was used to calculate odds ratio (OR) and 95% confidence intervals (95% CI). **Results:** Risk of uveal melanoma was increased among people with light iris color (OR = 1.9 95% CI 1.4–2.7) and light skin color was slightly associated with an increased risk of uveal melanoma (OR 1.4 95% 1.1–1.4). Hair color, tanning ability, burning tendency and freckles as a child showed no increased risk. Results of the combined analysis of eye- and hair color, burning tendency and freckles showed that only light iris color was clearly associated with uveal melanoma risk. **Conclusion:** Among potential phenotypical risk factors only light iris- and skin color were identified as risk factor for uveal melanoma.

76 TIME TRENDS IN RISK FACTORS FOR MOTHER-TO-CHILD TRANSMISSION OF HEPATITIS C VIRUS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Between-study variation in estimates of the risk of HCV mother-to-child transmission (MTCT) and associated risk factors may be due to methodological differences or changes in population characteristics over time. **Objective:** To investigate the effect of sample size and time on risk factors for MTCT of HCV. **Design and Methods:** Heterogeneity was assessed before pooling data. Logistic regression estimated odds ratios for risk factors. **Results:** The three studies included 1633 mother-child pairs born between 1992 and 1998, 346 born between 1986 and 2000, and 1758 between 1999 and 2003. There was no evidence of heterogeneity of the estimates for maternal HCV/HIV co-infection and mode of delivery (Q = 2.16, p = 0.34 and Q = 1.42, p = 0.49, respectively). In pooled analysis the proportion of HCV/HIV co-infected mothers significantly decreased from 54% before 1994 to 10% since 2002 (p < 0.00001). The pooled adjusted odds ratios for maternal HCV/HIV co-infection and elective caesarean section delivery were 2.80 (95%CI 1.99–3.95), p < 0.001 and 1.11 (95%CI 0.79–1.57), p = 0.53 respectively. There was no evidence that the effect of risk factors for MTCT changed over time. **Conclusion:** Although certain risk factors have become less common, their effect on MTCT of HCV has not changed substantially over time.

77 DIETARY PATTERNS AND SURVIVAL IN DUTCH OLDER WOMEN

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The need to gain insight into prevailing eating patterns and their health effects is evident. *Objective:* To identify dietary patterns and their relationship with total mortality in Dutch older women. *Methods:* Principal components analysis on 22 food groups was used to identify dietary patterns among 5,427 women (60–69 y) included in the Dutch EPIC-Elderly cohort (follow-up ~8.2 y). Mortality ratios for three major principle components were assessed using Cox proportional hazard analysis. *Results:* The most relevant principal components were a 'Mediterranean-like' pattern (high in vegetable oils, pasta/rice, sauces, fish, and wine), a 'Traditional Dutch dinner' pattern (high in meat, potatoes, vegetables, and alcoholic beverages) and a 'Healthy Traditional' pattern (high in vegetables, fruit, non-alcoholic drinks, dairy products, and potatoes). In 44,667 person years 277 deaths occurred. Independent of age, education, and other life style factors only the 'Healthy Traditional' pattern score was associated with a lower mortality rate, women in the highest tertile experienced a 30 percent reduced mortality risk. *Conclusion:* From this study a Healthy Traditional Dutch diet, rather than a Mediterranean diet, appears beneficial for longevity and feasible for health promotion. This diet is comparable to other reported 'healthy' or 'prudent' diets that have been shown to be protective.

78 RELIABILITY AND VALIDITY OF BURN-SPECIFIC QUALITY OF LIFE INSTRUMENTS IN THE NETHERLANDS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Recently, two burn-specific quality of life questionnaires were developed: the Health Outcomes Burn Questionnaire (HOBQ) for young children (0–4 years) and the American Burn Association/Shriners Hospital for children Burn Outcomes Questionnaire (BOQ) for children aged 5–18 years. To assess feasibility, reliability and validity of the Dutch version of the HOBQ and the BOQ. Questionnaires were adapted into Dutch and tested in children with a primary admission to a burn centre in March 2001–February 2004. Parents of 413 (aged 0–4) and 294 (aged 5–15) children were sent a questionnaire, as were 113 adolescents (aged 10–15). To assess validity, generic outcome instruments were included (Infant Toddler Quality of Life Questionnaire (ITQOL) or the Child Health Questionnaire (CHQ) and the EuroQol-5D). Response rate was 48–53%. Internal consistency of HOBQ and BOQ-scales was good (Cronbach's alpha's >0.7 in all but two scales). Test-retest results showed no differences in 70–92% of scales. High correlations between HOBQ- and BOQ-scales and conceptually equivalent generic outcome instruments were found. The majority of HOBQ (7/10)

and BOQ scales (11/12) showed significant differences between children with a long versus short length of stay. The Dutch HOBQ and BOQ can be used to evaluate functional outcome after burns in children.

79 CAESAREAN SECTIONS AND MATERNAL MORTALITY ASSOCIATED WITH MODE OF DELIVERY IN SAO PAULO, BRAZIL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Caesarean section rates are rising in many countries. *Objectives:* To evaluate caesarean section in both public and private sectors; and maternal mortality associated with mode of delivery in the public sector in Sao Paulo. *Design and Methods:* Public and private sectors 610,630 births for 2003; and 1,153,034 deliveries and 314 maternal deaths in the public sector for 2001–2003. The study estimated caesarean section rates and odds ratios for caesarean section in association with maternal characteristics in both public and private sectors; and maternal mortality associated with mode of delivery in the public sector, adjusted for hypertension, other disorders, problems and complications, as well as maternal age. *Results:* The caesarean section rate was 32.9% in the public sector, and 80.4% in the private sector. The odd ratio for caesarean section was 2.6 (95%CI: 2.6–2.7) for women with 12 or more years of education. The odd ratio for maternal mortality associated with caesarean section in the public sector was 3.3 (95%CI:2.6–4.3). *Conclusion and Discussion:* Sao Paulo presented high caesarean section rates. Caesarean section compared to vaginal delivery in the public sector presented higher risk for mortality even when adjusted for hypertension, other disorders, problems and complications, as well as maternal age.

81 QUESTIONNAIRE VALIDATION: THE CURRENT STATISTICAL PRACTICE MAY BIAS RESULTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: There is wide agreement that questionnaires used in epidemiological studies should be validated. Less clarity exists about appropriate statistical methods and interpretation of validation studies. *Objectives:* To compare and investigate the statistical validation methods most frequently used in practice with those recommended in the theoretically oriented literature. *Methods:* With PubMed we identified the validation studies for physical activity questionnaires published in the years 2000–2005. Using three platforms, a review of the theoretical literature, own simulations, and a validation study performed by ourselves, we worked out relevant limitations, advantages, and new important aspects of the most frequently used statistical methods. *Results:* Correlation coefficients are the common approach in validation studies, found in 41 of 46 reviewed publications (89.1%). Methods recommended by Bland and Altman were found in only 10 publications (21.7%). We show that serious bias in questionnaires can be revealed by Bland-Altman methods but may remain undetected by correlation coefficients. We refute the argument that correlation coefficients properly investigate whether questionnaires rank subjects sufficiently well. *Conclusions:* The commonly used correlation approach can yield misleading conclusions in validation studies. A more frequent and proper use of the Bland-Altman methods would be desirable to improve epidemiological data quality.

84 MONITORING A CANCER PREVENTION PROGRAM: SUCCESSFUL CHANGES IN CERVICAL CANCER SCREENING IN THE NETHERLANDS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Screening performance relies on quality and efficiency of protocols and guidelines for screening and follow-up. Evidence of low attendance rates, over-screening of young women and low smear specificity gathered by the early 1990's in the Dutch cervical cancer screening program called for an improvement. Several protocols and guidelines were redefined in 1996, with emphasis on assuring that these would be adhered to. We assessed improvement since 1996 by changes in various indicators: coverage rates, follow-up compliance and number of smears. Information on all cervix uteri tests in the Netherlands registered until 31st March 2004 was retrieved from the nationwide registry of histo- and cytopathology (PALGA). Five-year coverage rate in the age group 30–60 years rose to 77%. The percentage of screened women in follow-up decreased from 19% to 3%. Fourteen percent more women with abnormal smears were followed-up, and the time spent in follow-up decreased. A 20% decrease in the annual number of smears made was observed, especially among young women. In conclusion, the 1996 changes in protocols and guidelines, and their implementation have increased coverage and efficiency of screening, and decreased the screening-induced negative side effects. Similar measures can be used to improve other mass screening programmes.

85 DETERMINANTS OF THE MAIN TRANSMISSION ROUTES OF HEPATITIS B IN HIGH AND LOW ENDEMIC REGIONS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: It is common knowledge that in low endemic countries the main transmission route of hepatitis B infection is sexual contact, while in high endemic regions it is perinatal transmission and horizontal household transmission in early childhood. *Objectives:* To get insight into what determines the main transmission route in different regions. *Design and Methods:* We used a formula for the basic reproduction number R_0 for hepatitis B in a population stratified by age and sexual activity to investigate under which conditions $R_0 > 1$. Using data extracted from the literature we investigated how R_0 depends on fertility rates, rates of horizontal childhood transmission and sexual partner change rates. *Results:* We identified conditions on the mean offspring number and the transmission probabilities for which perinatal and horizontal childhood transmission alone ensures that $R_0 > 1$. Those transmission routes are then dominant, because of the high probability for children to become chronic carriers. Sexual transmission dominates if fertility is too low to be the driving force of transmission. *Conclusion:* In regions with high fertility rates hepatitis B can establish itself on a high level of prevalence driven by perinatal and horizontal childhood transmission. Therefore, demographic changes can influence hepatitis B transmission routes.

87 MATERNAL USE OF ORAL CONTRACEPTIVES AND RISK OF FETAL DEATH

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The artificial oestrogen Diethylstilboestrol is known to be fetotoxic. Thus, intrauterine exposure to other artificial sex hormones may increase the risk of fetal death. *Objective:* To study if use of oral contraceptive 4 months prior to or during pregnancy is associated to an increased risk of fetal death. *Design and Methods:* A cohort study of 92 719 pregnant women who were recruited into the Danish National Birth Cohort during the years 1996–2002 and interviewed about exposures during pregnancy, either during the first part of their pregnancy ($n = 90\ 167$) or following a fetal loss ($n = 2552$). Cox regression analyses with delayed entry were used to estimate the risk of fetal death. *Results:* In total 1102 (1.2%) women took oral contraceptives during pregnancy. Use of Combined oestrogen and progesterone Oral Contraceptives (COC) or Progesterone only Oral Contraceptives (POC) during pregnancy were not associated with increased hazard ratios of fetal death compared to non-users, HR 1.01 (95% CI 0.71–1.45) and HR 1.37 (95% CI 0.65–2.89) respectively. Neither use of COC nor POC prior to pregnancy was associated with fetal death. *Conclusion:* Use of oral contraceptive 4 months prior to conception or during pregnancy is not related to an increased risk of fetal death.

91 IS WATER FLUORIDATION EFFECTIVE TO REDUCE INEQUITIES IN DENTAL HEALTH IN DEVELOPING COUNTRIES?

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Few studies have been performed to assess if water fluoridation reduces social inequalities among groups of different socioeconomic status, and none of them was conducted in developing countries. *Objectives:* To assess socioeconomic differences between Brazilians towns with and without water fluoridation, and to compare dental caries indices among socioeconomic strata in fluoridated and non-fluoridated areas. *Design and Methods:* A countrywide survey of oral health performed in 2002–3 and comprising 34,550 children aged 12 years provided information about dental caries indices in 249 Brazilian towns. Socioeconomic indices, the coverage and the fluoride status of the water supply network of participating towns were also appraised. Multivariate regression models were performed. Inequalities in dental outcomes were compared in towns with and without fluoridated tap water. *Results:* Better-off towns tended to present a higher coverage by the water supply network, and were more inclined to add fluoride. Fluoridated tap water was associated with an overall improved profile of caries, concurrent with an expressively larger inequality in the distribution of dental disease. *Conclusion:* Suppressing inequalities in the distribution of dental caries requires an expanded access to fluoridated tap water; a strategy that can be effective to foster further reductions in caries indices.

92 FAMILY SOCIOECONOMIC TRAJECTORIES FROM CHILDHOOD TO ADOLESCENCE AND DENTAL CARIES AND ASSOCIATED ORAL BEHAVIOURS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Few studies have investigated the effect of socioeconomic position at different stages of life on oral health outcomes. **Objective:** To investigate the role of family socioeconomic trajectories from childhood to adolescence on dental caries and associated behavioural factors. **Design and Methods:** A population-based birth cohort was carried out in Pelotas, Brazil. A sample (n = 888) of the population of subjects born in 1982 were dentally examined and interviewed at aged 15. Dental caries index, care index, toothbrushing, flossing, and pattern of utilization of dental services were the outcomes. These measures were compared among four different family income trajectories. **Results:** Adolescents who were always poor showed, in general, a worse dental caries profile, whilst adolescents who never were poor had a better dental caries profile. Adolescents who had moved from poverty in childhood to non-poverty in adolescence and those who had moved from non-poverty in childhood to poverty in adolescence had similar dental profiles to those who were always poor except for pattern of utilization of dental services which was higher in the first group. **Conclusion:** Poverty in at least one stage of the lifespan has a harmful effect on dental caries, oral behaviours and utilization of dental services.

93 MULTILEVEL DETERMINANTS AFFECTING INEQUALITIES OF DENTAL CARIES EXPERIENCE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

We assessed contextual and individual determinants of dental caries in the Brazilian context. A country-wide survey of oral health informed the dental status of 34,550 twelve-year-old schoolchildren living in 250 towns in 2003. A multilevel model fitted the adjustment of untreated caries prevalence to individual (socio-demographic characteristics of examined children) and contextual (geographic characteristics of participating towns) covariates. Being black (OR = 1.6; 95% CI: 1.5–1.7), living in rural areas (OR = 1.9; 1.7–2.0) and studying in public schools (OR = 1.7; 1.6–1.9) increased the odds of having untreated decayed teeth. The multilevel model identified the fluoride status of water supplies (B = -0.3), the proportion of households linked to the water network (B = -0.3) and the human development index (B = -0.2) as town-level covariates of caries experience. Better-off Brazilian regions presented an improved profile of dental health, besides having a less unequal distribution of dental treatment needs between blacks and whites, rural and urban areas, and public and private schools. Dental caries experience is prone to socio-demographic and geographic inequalities. Monitoring contrasts in dental health outcomes is relevant for programming socially appropriate interventions aimed both at overall improvements and at the targeting of resources for groups of population presenting higher levels of needs.

95 DECREASED INCIDENCE OF PROSTATE CANCER AFTER SKIN CANCER: A PROTECTIVE ROLE OF UV-RADIATION?

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Ultraviolet radiation (UVR) is the main cause of non-melanoma skin cancer but has been hypothesised to protect against development of prostate cancer (PC). If this is true, skin cancer patients should have lower PC incidence than the general population. **Objectives:** To study the incidence of PC after a diagnosis of skin cancer. **Design Methods:** Using the Eindhoven Cancer Registry, a cohort of male skin cancer patients diagnosed since 1970 (2565 squamous cell carcinoma (SCC), 9295 basal cell carcinoma (BCC) and 1419 melanoma (CM)) was followed up for incidence of invasive PC. Observed incidence rates of PC amongst skin cancer patients were compared to those in the reference population, resulting in Standardised Incidence Ratios (SIR). **Results:** SCC (SIR 0.88 (95%CI: 0.64; 1.2)) and BCC (SIR 0.79 (95%CI: 0.65;0.94)) showed a decreased incidence of PC, CM did not. Patients with BCCs occurring in the chronically sun-exposed head and neck area (SIR 0.79 (95%CI: 0.64; 0.97)) had significantly lower PC incidence rates. **Conclusion Discussion:** Although numbers of SCC and CM were too small to obtain unequivocal results, this study partly supports the hypothesis that UVR protects against PC and also illustrate that CM patients are different from NMSC patients in several aspects.

96 INCIDENCE AND FACTORS ASSOCIATED TO BIOLOGICAL THYROID DYSFUNCTION IN THE SU.VI.MAX STUDY, FRANCE, 1994–2002

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Introduction: Hypo- and hyperthyroidism have been associated to various symptoms and metabolic dysfunctions in men and women. Incidences of these diseases have been estimated in a cohort of middle-aged adults in France. **Methods:** The SU.VI.MAX (Supplémentation en Vitamines et Minéraux Antioxydants) cohort study included 12741 volunteers followed-up for eight years since 1994–1995. The incidence of hypo- and hyperthyroidism was estimated retrospectively from scheduled questionnaires and the data transmitted by the subjects during their follow-up. Factors associated to incident cases have been identified by Cox proportional hazards models. **Results:** Among the 5166 subjects free of thyroid dysfunction at inclusion, 95 incident cases were identified. After an average follow-up of 7.5 years, the incidence of hyper- and hypo-thyroidism was 0.5% in men, 2.3% in 35–44 year old women, and 3.6% in 45–60 year old women. No associated factor was identified in men. In women, age and alcohol consumption (> 15 grams/day) increased the risk of hypo- or hyperthyroidism, while a high urinary thiocyanate level in 1994–1995 would be a protective factor. **Conclusion:** The incidences of hypo and hyperthyroidism observed in our study as well as the associated risk factors found are in agreement with the data of studies performed in other countries.

97 LIFE STYLE-RELATED FACTORS FOR LUNG CANCER RISK: A REVIEW OF THE LITERATURE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Lung cancer is the most frequent malignant neoplasm world-wide. In 2000, the number of new lung cancer cases was estimated at 1.2 million, which makes over 12% of all new cases of neoplasm registered all round the globe. It is also the leading cause of cancer deaths. **Objective:** The objective of this paper is to provide a systematic review of life-related factors for lung cancer risk. **Methods:** Data sources were MEDLINE from January 1950 to December 2005, title in the field. Search terms included: lung cancer, tobacco smoke, education, diet, alcohol consumption or physical activity terms. Book chapters, monographs, relevant news reports, and Web material were also reviewed to find articles. **Results:** The results of the literature review suggest that smoking is a major, unquestionable factor of lung cancer risk. Exposure to environmental tobacco smoke (ETS) and education could also play a role in the occurrence of the disease. Diet, alcohol consumption and physical activity level are other important but less extended determinants of lung cancer. **Conclusions:** Effective prevention programs against some of the life style-related factors for lung cancer, especially against smoking must be developed to minimize potential health risks and prevent the future cost of health.

101 SURGERY IN PATIENTS WITH NON-SMALL CELL LUNG CANCER STAGE I AND II 80 YEARS AND OLDER IN THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: For patients with stage I or II Non Small Cell Lung Cancer (NSCLC) surgery is the only curative treatment. Aim: To describe treatment of NSCLC stage I/II in patients aged 80 years and older in the Netherlands and to determine the influence of comorbidity on choice and outcome of treatment. **Methods:** Patients with NSCLC stage I and II diagnosed in the period 1995–2002 were retrieved from the Netherlands Cancer Registry (n = 9947). For patients aged ≥ 80 in the regions of the Comprehensive Cancer Centres Stedendriehoek Twente and South (n = 179), additional data (co-morbidity, complications after surgery and follow-up) were gathered. Cox-regression analyses were used. **Results:** The proportion resections declined from 80% of patients < 60 to 30% of patients aged ≥ 80 years, whereas primary radiotherapy increased from 7% to 36%. In the two regions 25 patients (14%) underwent resection. Co-morbid conditions did not influence the choice of the therapy. 75% had complications. Postoperative mortality was 20%. In multivariate analysis, only treatment had an independent effect. Two year survival was 58% for patients undergoing surgical resection and 27% for those receiving radiotherapy ($p < 0.05$). **Conclusion:** Number of co-morbid conditions did not influence choice of treatment, postoperative complications, and survival in patients with NSCLC ≥ 80 years.

102 BREASTFEEDING LOWERS OVERWEIGHT RISK AT 7 YEARS THROUGH LOWER WEIGHT GAIN IN FIRST YEAR OF LIFE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Breastfed children appear to have a lower weight gain in the first year of life. However, it is unclear how breastfeeding influences body mass index (BMI) after the weaning period. **Objective:** We studied the association between breastfeeding and BMI at 1 year and BMI development from 1 to 7 years. **Methods:** We used data of 2179 Dutch children born in 1996/1997 who participated in the Prevention and Incidence of Asthma and Mite Allergy (PIAMA) birth cohort study. Parental reported weight, height and duration of breastfeeding were used. The association between breastfeeding and BMI at 1 year was analyzed by linear regression and a random coefficient analysis was used to study breastfeeding and BMI development. **Results:** Breastfeeding (> 16 weeks versus no breastfeeding) was statistically significantly negatively associated with BMI at 1 year after adjustment for gender, birth weight and maternal BMI, $\beta = -0.23$ (SE = 0.09). The BMI model showed that after 1 year the effect of breastfeeding was negligible if BMI at 1 year was taken into account. BMI at 1 year was a strong predictor for the development of BMI. **Conclusion:** These results suggest that the protective effect of breastfeeding on later BMI acts through a lower BMI at 1 year.

105 INTERNATIONAL VARIATION IN RESECTION RATES AND POSTOPERATIVE MORTALITY FOR CARCINOMA OF THE OESOPHAGUS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

The epidemiology of oesophageal cancer has changed in recent decades. The incidence has increased sharply, mainly comprising men, adenocarcinoma and tumours of the lower third of the oesophagus. The Eurocare study suggested large variation in survival between European countries, primarily related to early mortality. To study potential explanations, we compared data from the Rotterdam and Thames Cancer Registry. Computer records from 18,320 patients diagnosed with oesophageal cancer in the period 1993–2003 were analysed by age, gender, histological type, tumour subsite, period and region. There was a large variation in resection rates between the two regions, 31% for Rotterdam versus 14% for Thames ($p < 0.001$). Resection rates were higher for men, younger patients, adenocarcinoma and distal tumours. Postoperative mortality (POM) was defined as death within 30 days of surgery and was 7.4% on average. POM increased with age from 3.3% for patients younger than 60 years to 12.6% for patients older than 70 years. POM was significantly lower in high-volume hospitals (> 20 operations per year), 8.7% versus 2.4% ($p < 0.001$). This study shows a large variation in treatment practice between the Netherlands and the United Kingdom. Potential explanations will need to be studied in detail.

107 TRENDS, STRUCTURE AND POTENTIAL UNDERESTIMATION OF INFANT MORTALITY (IM) IN NORTH-WEST RUSSIA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Russia has experienced tremendous decline in life expectancy after break up of the USSR. Surprisingly, IM has also been decreasing. Less is known on the structure of IM in different regions of Russia. The official IM data may be underestimated partly due to misreporting early neonatal deaths (END) as stillbirths (SB). END/SB ratio considerably exceeding 1:1 indicates misreporting. We present the trends and structure of IM in Arkhangelsk oblast (AO), North-West Russia from 1980 to 2004 as obtained from the regional statistical committee. IM decreased from 22.3 to 10.1 per 1000 live births. Cause-specific death rates (per 100,000) decreased from 251 to 7.0 for infectious diseases, from 745 to 56 for respiratory causes, from 141 to 56 for traumas, from 384 to 285 for inborn abnormalities but did not change for conditions of the perinatal period (501 in both 1980 and 2004). The END/SB ratio increased from 1 to 1.5. In 2004, IM from infections and respiratory causes in the AO are much lower than in Russia in general. The degree of misreporting END as SB in the AO is lower than in Russia in general. Other potential sources of underestimation of IM in Russia will be discussed.

109 INCREASE IN SEXUALLY TRANSMITTED INFECTIONS (STI) OBSERVED BY A SENTINEL NETWORK OF PHYSICIANS IN BELGIUM

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The resurgence of STI in Europe end '90 has emphasized the need for information about the determinants of STI. **Objectives:** To identify subpopulations particularly at risk for STI and to determine incidence trends. **Methods:** Network of gynaecologists, dermatologists, general practitioners, urologists, STI clinics, student clinics and sexual education centres. Between 2000–2005, STI patients were registered yearly during 4-monthly periods (October–January); in 2004 and 2005, registration extended until March. In registration included: Chlamydia, gonorrhoea, trichomonas, herpes, syphilis, Human Papilloma Virus, Pelvic Inflammatory Disease, pediculosis and Lymphogranuloma Venereum. **Results:** From October 2004 until March 2005, 326 STI patients (174 male, 152 female) were registered. Half (51%) of men mentioned homo/bisexual orientation, 42% heterosexual orientation. Syphilis was most frequent in men who have sex with men (MSM), HPV in heterosexual men, Chlamydia in women. Fifty-four percent of MSM with syphilis were HIV positive. The number of MSM diagnosed with syphilis increased throughout the different registration periods ($p < 0.001$). **Conclusion:** The observed syphilis increase in MSM and the high proportion of HIV co-infection is alarming. In conclusion, stimulating safe sex and early tracing and treatment of STI are recommended.

114 THE INFLUENCE OF MALOCCLUSION IN THE ADOLESCENT'S SELF-IMAGE. A CROSS-SECTIONAL STUDY NESTED IN A BIRTH COHORT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Epidemiological studies that investigated malocclusion and different physical aspects in adolescents are rare in the literature. **Objective:** We studied the impact of malocclusion on adolescents' self-image regardless of other physical aspects. **Design and Methods:** A cross-sectional study nested in a cohort study was carried out, in Pelotas, Brazil. A random sample of 900 15 years-old adolescents was selected. The World Health Organization (1987) criteria were used to define malocclusion. Interviews about self-reported skin colour and appearance satisfaction were administered. The body mass index was calculated. Gender, birth weight and socioeconomic characteristics were obtained from the birth phase of the cohort study. Poisson regression models were performed. **Results:** The prevalence of moderate or severe malocclusion was 31.6% [95%CI 28.5;34.7] in the whole sample without significant difference between boys and girls. A higher statistically significant difference of appearance dissatisfaction was identified in girls (46.5%) than in boys (29.8%). A positive association between malocclusion and appearance dissatisfaction was observed only in girls, after adjusting for other physical and socioeconomic characteristics. **Conclusions:** Malocclusion influenced appearance dissatisfaction only in young women.

115 ELDERLY FUNCTIONAL STATUS IN A SMALL TOWN IN SOUTHERN BRAZIL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Factors for healthy aging with good functional capacity and those which increase the risk of death and disability need to be identified. **Objectives:** We studied the prevalence of low functional capacity and its associations in a small city in Southern Brazil. **Design and Methods:** A population based cross sectional study was carried out with a random sample size of 345 elderly people. A home-applied questionnaire including socioeconomic, demographic, house conditions, socioeconomic self-perception characteristics was applied. The low functional capacity was defined as the difficulty in the performance of 6 or more activities or inability to carry out 3 of those activities according to scale proposed by Rikli and Jones. Descriptive statistics, association using chi-square test as well as the multiple logistic regression analysis were performed. **Results:** The response rate was 92.7%, with a low functional prevalence of 37.1% [95%CI 32.0;42.2]. After adjustment for confounding variables, the factors associated to low functional capacity were: to be over 70 year old (OR 8.6[4.0;18.8]), to be female (OR 2.1[1.2;3.6]) and those who related worse socioeconomic status (OR 3.4[1.7;7.0]). **Conclusions:** A high proportion of elderly citizens present low functional capacity. Health programmes which delay the upcoming of such incapacities could contribute towards a healthier ageing process.

116 SPATIAL DISTRIBUTION OF TRICHIURIASIS IN A SMALL AREA, RIO DE JANEIRO, BRAZIL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Introduction: Assessment of trichiuriasis spatial distribution is important to evaluate sanitation conditions. Our objective was to identify risk areas for the *Trichuris trichiura* infection. *Methods:* Cross sectional study was held in 19 census tracts of Duque de Caxias county, Rio de Janeiro, Brazil. Collection and analysis of fecal specimens and a standardized questionnaire were carried out in order to evaluate socio-economic and sanitation conditions in a sample of 1,546 children between 1 and 9 years old. Geostatistics techniques were used to identify risk areas for trichiuriasis. *Results:* The mean age of the studied population was 4.4 years old, which 52% were females and 48% were males. The prevalence of *Trichuris trichiura* in the sample was 17%. Children whose mothers studied for 4 years or less had odds ratio (OR) = 1.9 than children whose mothers studied for more than 4 years old. Children who were living in houses without water supply had OR = 2.6 comparing to children living in houses with water supply. The spatial analysis identified risk areas for infection. *Conclusion:* The results show association between socio-economic conditions and the proliferation of *Trichuris trichiura* infection. The identification of risk areas can guide efficient actions to combat the disease.

117 EFFECT OF DIABETES MELLITUS ON THE HEALTH-RELATED QUALITY OF LIFE OF THE PALESTINIAN DIABETIC REFUGEES IN GAZA STRIP

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Refugee life and diabetes mellitus can affect the health-related quality of life (HRQOL). *Objective:* To assess how both aspects influence HRQOL of the diabetic refugees in Gaza strip. *Methods:* Overall 591 subjects filled a self-administered questionnaire including World Health Organization Quality of Life questionnaire (WHOQOL-BREF) and some socio-demographic information. The sample consisted of three frequency matched groups for gender and sex, 197 each. First group were refugees with diabetes mellitus, second refugees without diabetes and third diabetes patients with no refugee history. The response rate was 87% on average. Global score consisting of all four domains of WHOQOL-BREF was dichotomized by the value of 50 and logistic regression was used for the analysis. *Results:* Crude odds ratios (OR) for lower quality of life were 17.2 (95% CI 10.4–28.3) for diabetes refugees compared to diabetes non-refugees and 19.4 (11.7–32.2) compared to non-diabetes refugees. After adjusting for age, gender, education, employment, income status and number of persons depending on the respondents OR was 11.2 (6.1–20.5) and 35.3 (17.7–70.4), respectively. Additionally, adjusting for length of diabetes and complications reduced the OR to 5.6 (2.4–13.4) for diabetes refugees compared to diabetes non-refugees. *Conclusion:* Quality of life is highly reduced in refugees with diabetes.

122 OVERVIEW OF CURRENT EPIDEMIOLOGICAL EVIDENCE ON EXPOSURE TO PESTICIDES AND CHILDREN HEALTH

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Pesticides have a significant public health benefit by increasing food production productivity and decreasing diseases. On the other hand, public concern has been raised about the potential health effects of the exposure to pesticides on the developing fetus and child. *Objectives:* To review the available literature to find an epidemiological studies dealing with the exposure to pesticides and children health. *Design and Methods:* Epidemiological studies were identified during search of the literature basis. Following health effects were taken into account: adverse reproductive and developmental disorders, childhood cancer, neurodevelopmental effects and the role of pesticides as endocrine disrupters. *Results:* Pesticides were associated with wide range of reproductive disorders. The association between exposure to pesticides and the risk of childhood cancer and neurodevelopmental effects was found in several studies. Epidemiological studies have been limited by lack of specific pesticide exposure, exposure based on job title, small size of examined groups. *Conclusions:* In the light of existing although still limited evidence of adverse effects of pesticide exposure it is necessary to reduce the exposure. The literature review suggests a great need to increase awareness of people who are occupationally or environmentally exposed to pesticides about its potential negative influence on their children.

123 ADDITIONAL BENEFIT OF QUESTIONS ABOUT NEED OF INFORMATION AND SUPPORT IN A HEALTH QUESTIONNAIRE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

In order to match local health policy more with the needs of citizens, the Municipal Health Service Utrecht started the project 'Demand-orientated prevention policy'. One of the aims was to explore the needs of the Utrecht citizens. The local health survey from 2003 contained questions about needs of information and support with regard to disorders and lifestyle. Do these questions about needs give other results compared to questions about prevalence of health problems? In total 2284 Utrecht citizens aged 16 to 54 years returned the health questionnaire (response rate 55%). Most needs were observed on subjects concerning overweight and mental problems, and were higher among women, Moroccans, Turks, low educated people and citizens of deprived areas. The prevalence of disorders and unhealthy lifestyles did not correlate well to the needs (majority correlation coefficients: <0.30). Most striking, of the Utrecht population 30% were smokers and 20% excessive alcohol drinkers, while needs related to these topics were low. Furthermore, higher needs among specific groups did not always correspond to higher prevalences of related health problems in these groups. These results show the importance of including questions about needs in a health survey, because they add additional information to questions about prevalences.

124 STATIN THERAPY AND REDUCED RISK OF PNEUMONIA IN SENIOR PATIENTS WITH DIABETES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Recent studies associated statin therapy with better outcome in patients with pneumonia. Because of an increased risk of pneumonia in patients with diabetes we aimed to assess the effects of statin use on pneumonia occurrence in diabetic patients managed in primary care. **Methods:** We performed a case-control study nested in 142,174 patients with diabetes. Cases were defined as patients with a diagnosis of pneumonia. For each case, up to 4 controls were matched by age, gender, practice, and index date. Patients were classified as current statin user when the index date was between the start and end date of statin therapy. **Results:** Statins were currently used in 1.1 % of 4,719 cases and in 2.1% of 15,322 controls (crude OR: 0.51, 95% CI 0.37–0.68). After adjusting for potential confounders, statin therapy was associated with a 51% reduction in pneumonia risk (adjusted OR: 0.49, 95% CI 0.35–0.68). The association was consistent among relevant subgroups (stroke, heart failure, and pulmonary diseases) and independent of age or use of other prescription drugs. **Conclusions:** Use of statins was significantly associated with reduced pneumonia risk in diabetic patients and may apart from lipid lowering properties be useful in prevention of respiratory infections.

125 SMOKING CESSATION DECREASES THE RISK TO DEVELOP COPD; A 25 YR FOLLOW-UP STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Introduction: Cigarette smoking is the most important risk factor for COPD development. Therefore, smoking cessation is the best preventive measure. **Aim:** To determine the beneficial effect of smoking cessation on COPD development. **Methods:** Incidence of COPD (GOLD stage ≥ 1) was studied in smokers without COPD who quit or continued smoking during 25 yr of follow-up. We performed logistic regression analyses on pairs of observations. Correlations within a subject and time, and time between 2 successive surveys were taken into account. **Results:** In total, 448 males (64.2 %) and 250 females contributed 1514 paired observations. Smoking cessation resulted in a significantly reduced risk to develop COPD (Odds ratio [OR] = 0.55, 95% confidence interval [CI] = 0.34–0.89), independent of sex (OR [male] = 2.08, 95%CI = 1.41–3.08), airway hyperresponsiveness (OR = 2.32, 95% CI = 1.69–3.17), age (OR ranges from 0.53 [< 30 yr], 95% CI = 0.34–0.85 to 2.12 [> 60 yr], 95% CI = 1.20–3.77), $> = 35$ packyears (OR = 1.67, 95%CI = 1.12–2.50) and chronic cough and/or phlegm symptoms (OR = 1.24, 95%CI = 0.87–1.77). No interaction was observed between smoking cessation and the other variables. **Conclusion:** Smoking cessation reduces the risk to develop COPD considerably, irrespective of age and packyears. To reduce COPD incidence, the greatest effort should be put into smoking cessation intervention programs. (funded by Stichting Astma Bestrijding).

127 PREVALENCE AND SEVERITY OF DENTAL CARIES IN SCHOOLCHILDREN OF PORTO, PORTUGAL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objectives: To describe the prevalence and severity of dental caries in adolescents of the city of Porto, Portugal, and to assess socio-economic and behavioral covariates of dental caries experience. **Methods:** A sample of 700 thirteen-year-old schoolchildren underwent dental examination. Results from the dental examination were linked to anthropometric information and to data supplied by two structured questionnaires assessing nutritional factors, socio-demographic characteristics and behaviors related to health promotion. Dental caries was appraised in terms of the DMFT index, and two dichotomous outcomes, one assessing the prevalence of dental caries (DMFT = 1); the other assessing the prevalence of a high level of dental caries (DMFT = 4). **Results:** Consuming soft drinks derived from cola two or more times per week, attending a public school, being girl and having parents with low educational attainment were identified as risk factors both for having dental caries and for having a high level of dental caries. **Conclusion:** The improvement of oral health status in the Portuguese context demands the implementation of policies to reduce the frequency of sugar intake, and could benefit from an overall and longstanding expansion of education in society.

128 BEHAVIOURAL RISK FACTORS IN TWO GENERATIONS OF MIGRANTS: TRENDS OF CONVERGENCE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Migrant mortality does not conform to a single pattern of convergence towards rates in the host population. To better understand how migrant mortality will develop, there is a need to further investigate how the underlying behavioural determinants change following migration. **Objective:** We studied whether behavioural risk factors among two generations of migrants converge towards the behaviour in the host population. **Design and Methods:** Cross-sectional interview-data were used including 299 Moroccan and 476 Turkish migrants, aged 15–30. Questions were asked about smoking, alcohol consumption, physical inactivity and weight/height. Age-adjusted prevalence rates among first and second generation migrants were compared with prevalence rates in the host population. **Results:** Converging trends were found for smoking, physical inactivity and overweight. For example, we found a higher prevalence of physical inactivity in first generation Turkish women as compared to ethnic Dutch (OR = 1.78(1.22–2.62)), whereas among second generation no differences were found (OR = 0.82(0.57–1.17)). However, this trend was not found in all subgroups. Additionally, alcohol consumption remained low in all subgroups and did not converge. **Conclusion and Discussion:** Behavioural risk factors in two generations of migrants seem to converge towards the prevalence rates in the host population. Although, some groups and risk factors showed a deviant pattern.

129 INDICATORS OF REFERRAL IN CONSULTERS WITH NON-TRAUMATIC COMPLAINTS OF ARM, NECK AND SHOULDER IN GENERAL PRACTICE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background/relevance: Arm-neck-shoulder complaints are common in general practice. For referral in these complaints, only guidelines exist for shoulder complaints and epicondylitis. Besides, other factors can be important. *Objective:* What factors are associated with referral to physiotherapy or specialist in non-traumatic arm-neck-shoulder complaints in general practice, during the first consultation? *Design/methods:* 31 general practitioners (GPs) recruited consultants with new arm, neck or shoulder complaints. Data on complaint-, patient-, GP-characteristics and management were collected. The diagnosis was categorised into: shoulder specific, epicondylitis, other specific or non-specific. Multilevel analyses (adjustment for treating GP) were executed in Procgenmod to assess associated variables ($p < 0.05$). *Results:* During the first consultation, 23% was referred for physiotherapy and 5% for specialist care. Indicators of reference to physiotherapy were: long duration of complaint, recurrent complaint and GP located in a little/not urbanised area. While having shoulder specific or other specific diagnoses was negatively associated. Indicators of reference to specialist care were: having other specific diagnosis, long duration of complaint, musculoskeletal co-morbidity, functional limitations and consulting a less experienced GP. *Conclusion/discussion:* Most referrals were to physiotherapy and only a minority to specialist care. Mainly diagnosis and other complaint variables indicate on 'who goes where'. Besides GP-characteristics can play a role.

130 CORE HEALTH INDICATORS IN MÉGAPOLIS AREA - 'RUHR-CITY' IN GERMANY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The Ruhr area has for 170 years been a synonym for a mégapolis of heavy industry with a high population density. Presently, 40% of the population of the state of North Rhine-Westphalia live there, i.e. more than five million people. *Objectives:* For the first time, social and health indicators of NRW's health indicator set were brought together for this mégapolis area. *Design and Methods:* New standard tables were constructed for the central area of 'Ruhr-City' including seven cities with more than 2000 inhabitants/km² and the peripheral zone with eight districts and cities. For the pilot phase, four socio-demographic and four health indicators were recalculated. Comparability of the figures was achieved by age standardization. The results obtained were submitted to a significance test by identifying 95% confidence intervals. *Results:* The centre of 'Ruhr-City' is characterised by elderly, unemployed, foreign, low-income citizens living closely together. Infant mortality lies above NRW's average, male life expectancy is 1.34 years lower and female life expectancy 0.90 years lower than life expectancy in NRW (without 'Ruhr-City'). Several avoidable deaths' rate in the Ruhr area are significantly higher than the average in NRW. Specific intervention strategies are required to improve the health status in 'Ruhr-City'.

132 STRATEGIES TO ENHANCE SMOKING CESSATION IN GENERAL PRACTICE: RESULTS OF A CLUSTER-RANDOMIZED TRIAL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: General practitioners (GPs) have a fundamental role to play in tobacco control, since they reach a high percentage of the target population. *Objectives:* To evaluate specific strategies to enhance promotion of smoking cessation in general practice. *Design and Methods:* In a cluster-randomized trial, 82 medical practices were randomized following a 2x2 factorial design. 577 Patients aged 36–75 years who smoked at least 10 cigarettes per day (irrespective of their intention to stop smoking) were recruited. The intervention included (TI) the provision of a two-hour physician group training in smoking cessation methods plus direct physician payments for every participant not smoking 12 months after recruitment; and (TM) provision of the same training plus direct participant reimbursements for pharmacy costs associated with nicotine replacement therapy or bupropion treatment. *Results:* In the mixed logistic regression model, no effect was identified for intervention TI (odds ratio (OR) = 1.26, 95% confidence interval (CI) 0.65–2.43), but intervention TM strongly increased the odds of cessation (OR = 4.77, 95% CI 2.03–11.22). *Conclusion and Discussion:* The cost-free provision of effective medication along with improved training opportunities for GPs may be an effective measure to enhance smoking cessation promotion in general practice.

134 VARIATION OF SMOKING PREVALENCE IN SIX EUROPEAN COUNTRIES, COMPARISON OF HEALTH SURVEY DATA

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

In Europe, little research on international comparison of health surveys has been accomplished, despite a growing interest in this field. Smoking prevalence is chosen to explore data comparability. We aim to illustrate methodological problems encountered when comparing data from health surveys and investigate international variations in smoking behaviour. We examined a sample 89.754 individuals aged 16 and more, from six European health surveys performed in 2000–2002. Problems met during the comparisons are described. We took the example of current smoking as an indicator allowing a valid comparison of the prevalences. The differences in age and sex distribution between countries were adjusted through direct standardisation. Additionally, multivariate analysis will assess variations in current smoking between countries, when controlling for sex, age, and educational level. Methodological problems concern comparability of socioeconomic variables. The percentage of current smokers varies from 29% to 43%. Smoking patterns observed by age groups, sexes and educational level are similar, although rates per country differ. Further results will determine if the variations in smoking related to socioeconomic status are alike. This international comparison of health surveys

highlights methodological problems encountered when comparing data of several countries. Furthermore, variations in smoking may call for adaptations in public health programs.

135 EVALUATION OF A MEDIA CAMPAIGN TO PROMOTE PROBLEM AWARENESS OF EXCESSIVE ADOLESCENT ALCOHOL USE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

From research it appears that adolescent alcohol use in the Achterhoek is much higher than in the rest of the Netherlands and rapidly increasing. Excessive alcohol use has consequences for health and society. Parents play an important role in preventing excessive adolescent alcohol use, but are not aware of the problem and consequences. For this reasons the municipalities in the Achterhoek launch an alcohol moderation programme, starting with a regional media campaign to increase problem awareness among parents. The objective of this study is to assess the impact of this media campaign in the Achterhoek. Three successive independent cross-sectional telephone surveys, interviewing approximately 350 respondents each, will be conducted before, during and after the campaign. Respondents will be questioned on knowledge and awareness of excessive adolescent alcohol use, its consequences and the role child raising can play. Also the reach and appreciation of the different activities of the campaign will be investigated. *Results:* of the surveys before and during the implementation will be known by May 2006. With these first findings the unawareness of the problem among parents and partly the reach and appreciation of the campaign can be assessed.

139 A POPULATION-BASED BIRTH-COHORT STUDY WITHIN THE GRONINGEN EXPERT CENTER FOR KIDS WITH OBESITY (GECKO DRENTHE)

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Obesity is a growing problem, increasingly so in children and adolescents. Overweight is partly 'programmed' during pregnancy, but few comprehensive studies looked prospectively into the changes of body composition and metabolic factors from birth. *Objectives:* The aim of the population-based birth-cohort study within GECKO is to study the etiology and prognosis of overweight and the metabolic syndrome during childhood. *Design and Methods:* The GECKO Drenthe will be a population based observational birth-cohort study, which includes all children born from April 2006 to April 2007 in Drenthe, one of the northern provinces of The Netherlands. During the first year of life, the study includes repeated questionnaires, extensive anthropometric measurements and blood measurements at birth (cord blood) and at the age of eleven months. *Results:* The number of babies born in the Drenthe province is about 5.500 per year. The results from a feasibility study conducted in February 2006 will be presented. *Conclusion:* GECKO Drenthe is a unique project that will contribute to the understanding of the development of obesity in childhood and its tracking into adulthood. This will enable early identification of children at risk and opens the way for timely and tailored preventive interventions.

142 DETERMINANTS OF OBESITY AND OVERWEIGHT AMONG URBAN SCHOOL CHILDREN IN SOUSSE, TUNISIA

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Tunisia is facing an epidemiologic transition with the extension of chronic diseases that share common risk factors. Obesity is a leading risk factor and happens to occur frequently in early life. *Objective:* To study the prevalence and the risk factors of obesity and overweight among urban schoolchildren in Sousse, Tunisia. *Methods:* Cross sectional study of a Tunisian sample of schoolchildren aged between 13 and 17 years living in the urban area of Sousse, Tunisia. A representative sample of 1600 school children selected by multistage cluster sampling procedure. Measurements: weight and height, blood pressure measured by electronic system, fasting blood lipids. Questionnaire assessment was used for family history of cardiovascular disease, smoking habits, physical activity and diet. *Results:* The multivariate regression analysis adjusted on age and gender showed that physical inactivity (OR = 2.01; CI95%=[1.13-3.54]), hyper-triglyceridemia (OR = 7.06; CI95%=[2.42-20.54]), hypertension (OR = 3.56; CI95%=[2.23-5.68]) and family history of heart disease (OR = 1.49; CI95%=[1.03-2.17]) were significantly associated with schoolchildren obesity. Smokers had a non significant greater risk for obesity than non smokers (OR = 1.11; p = 0.76). *Conclusion:* Improvement of health-related behaviours and a focus on promotion of physical activity among schoolchildren should be priorities in achieving weight control and subsequent related diseases.

146 VALIDATION OF THE BRIEF VERSION OF WHO'S QUALITY OF LIFE INSTRUMENT (WHOQOL-BREF) IN HUNGARY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Quality of life (QOL) measurements are acknowledged as very important in the evaluation of health care. *Objectives:* We studied the validity and the reliability of the Hungarian version of the WHOQOL-BREF among people living in small settlements. *METHOD:* A questionnaire-based cross-sectional study was conducted in a representative sample (n = 814) of persons aged 35 years and over in South-East-Hungary, in 2004. Data were analysed by the SPSS 13.0. The internal consistency was evaluated using Cronbach's alpha; for comparison of the QOL scores amongst the various groups the two-tailed t-tests were used; convergent validity was assessed by Spearman coefficients. *Results:* The male:female ratio was 48.3 to 51.7%, and the average age 59.68 (SD:14.37) years. The domain scores were 14.14 (SD:3.08) for the physical, 14.19 (SD:2.42) for psychological, 14.15 (SD:3.03) for the social, and 14.01 (SD:2.08) for the environment domains. The Cronbach's alpha values ranged from 0.73 to 0.87 across domains. The WHOQOL-BREF seemed to be suitable to distinguish healthy and unhealthy people. The scores for all domains correlated with the self-evaluated health, and overall quality of life (p < 0.01). *Conclusion:* Our study supported that the WHOQOL-BREF provided a valid, reasonable and useful determination of the QOL of people living in Hungarian villages.

151 DIRECT COSTS OF ARTERIAL HYPERTENSION IN SPAIN IN 2003

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Further than a cardiovascular disease, arterial hypertension (AHT) is the main cardiovascular risk factor. In Spain, the AHT prevalence reaches 47%, placed in the third position after Germany and Finland in affecters percentage. Although its high morbi-mortality, the AHT is a forecast factor. The treatment's objective (pharmacological and life style modifications) of hypertensive patients is not only to reduce blood pressure levels to optimum levels but also to treat all modifiable vascular risk factors. **Objective:** Economic impact evaluation of direct costs due to AHT pathology (CIE9-MC 401-405) in Spain in 2003, according to autonomous region. **Design and Methods:** Descriptive and transversal study of costs estimation in the period between January to December 2003 in Spain according to autonomous region. The study is based on data available from the National Health Ministry database and the National Statistics Institute of Spain. **Results:** The National Health Service assigned 2000 million € to AHT treatment. 73,4% of the total cost is owe to pharmaceutical service expenses, 23,2% to primary health care and a 3,4% to hospital admissions. **Conclusion and Discussion:** The costs generated by AHT are mainly due to the pharmaceutical service. The costs distribution is modified according to the geographical region.

154 DIFFERENCES IN TREATMENT AND SURVIVAL OF CERVICAL CANCER IN TWO REGIONS IN THE NETHERLANDS 1989-2002

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Over the last decades, for low-stage cervical cancer less surgical treatment and for high-stage cervical cancer chemoradiotherapy was recommended in the national guidelines. **Objectives:** To describe changes and variation in treatment and survival in cervical cancer in the regions of the Comprehensive Cancer Centre Stedendriehoek Twente (CCCST) and South (CCCS) in The Netherlands. **Design and Methods:** 1736 newly diagnosed cervical cancer cases were selected from both cancer registries in the period 1989-2002. Patient characteristics, tumour characteristics, treatment and follow-up data were collected from the medical records. **Results:** In FIGO stages IA2-IB2 the percentage hysterectomy decreased from 90% in 1989-1993 to 77% in 1999-2002 ($p < .05$) and survival improved comparing 1989-1993 with 1999-2002 (HR 0.7, $p > .05$). FIGO stages III-IVB had mostly received radiotherapy only (60%). No differences in survival between years of diagnosis were found. In the CCCS-region more chemoradiotherapy was given in these stages (11% versus 5% in the CCCST-region in the whole period). **Conclusion and Discussion:** The national guidelines are well implemented for the treatment of FIGO stages I-IIA but not for FIGO stages IIB-IVB. Changes in survival may be expected in different time periods related to the introduction of new treatment strategies in the whole of the Netherlands.

156 DEPRESSION IN TYPE 2 DIABETES: CONSEQUENCE RATHER THAN CAUSE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The reason for the increased prevalence of depression in type 2 diabetes (DM2) is unknown. **Objective:** We investigated whether depression is associated with metabolic dysregulation or that depression is rather a consequence of having DM2. **Methods:** Baseline data of the Utrecht Health Project were used. Subjects with cardiovascular disease were excluded. 4,203 subjects (age: 38.0 +/- 12) were classified into four mutually exclusive categories: normal fasting plasma glucose (FPG < 5.6 mmol/l), impaired FPG (> = 5.6 and < 7.0 mmol/l), undiagnosed DM2 (FPG > = 7.0 mmol/l), and diagnosed DM2. Depression was defined as either a score of 25 or more on the depression subscale of the Symptom Check List-90 or use of antidepressants. **Results:** Subjects with impaired fasting glucose and undiagnosed DM2 had no increased prevalence of depression. Diagnosed DM2 patients had an increased prevalence of depression (OR = 2.11 (1.08-4.11)) after adjustment for gender, age, body mass index, smoking, alcohol consumption, physical activity, education level and number of chronic diseases. **Conclusions:** Our findings suggest that depression is not related to disturbed glucose homeostasis. The increased risk of depression in diagnosed DM2 only, suggests that depression is rather a consequence of the psychosocial burden of diabetes.

157 THE USE OF BREAST CONSERVING SURGERY AND RADIOTHERAPY IN THE NETHERLANDS, 1990-2001

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Breast-conserving surgery (BCS) followed by radiotherapy (BCS-RT) is a safe treatment option for the large majority of patients with tumours less than 5 cm. **Aim:** The use of BCS and BCS-RT in pT1 (?2 cm) and pT2-tumours (2-5 cm) was investigated in the Netherlands in the period 1990 and 2001. **Methods:** From the Netherlands Cancer Registry patients were selected with invasive pT1 (?2.0 cm) or pT2 (2.1-5.0 cm) tumours, without metastasis at time of diagnosis. Trends in the use of BCS and RT after BCS were determined for different age groups and regions. **Results:** In the period 1990-2001 52,937 pT1-tumours and 36,285 pT2-tumours were diagnosed. The %BCS in pT1-tumours increased in all age groups. It remained lowest in patients 80 years and older (32% in 2001). In pT2-tumours a decrease was observed in patients 80 years and older (from 23% to 17% in 2001). In both pT1 and pT2-tumours the %BCS-RT increased in patients 80 years and older to respectively 59% and 44%. Between regions and hospitals large differences were seen in %BCS and %BCS-RT. **Conclusion:** Multidisciplinary treatment planning, based on specific guidelines, and patient education could increase the use of BCS combined with RT in all age groups.

158 ACUTE PESTICIDE POISONING AMONG CUTFLOWER FARMERS: A FOLLOW-UP STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

This is a follow-up study on the adverse health effects associated with pesticide exposure among cut-flower farmers. Survey questionnaires and detailed physical and laboratory examinations were administered to 114 and 102 respondents, respectively, to determine pesticide exposure, work and safety practices, and cholinesterase levels. Results showed that pesticide application was the most frequent activity associated with pesticide exposure, and entry was mostly ocular and dermal. Majority of those exposed were symptomatic. On physical examination, 90 or 88.2 % of those examined were found to have abnormal peak expiratory flow rate (PEFR). Eighty-two percent had abnormal temperature, followed by abnormal general survey findings (e.g. cardiorespiratory distress). 51% had cholinesterase levels below the mean value of 0.7 ? ph/hour, and 25.5% exhibited a more than 10% depression in the level of RBC cholinesterase. Certain hematological parameters were also abnormal, namely hemoglobin, hematocrit, and eosinophil count. Using Pearson's r, factors strongly associated with illness due to pesticides include using a contaminated piece of fabric to wipe sweat off (p.=0.01) and reusing pesticide containers to store water (p.=0.01). The greatest adverse effect of those exposed is an abnormal cholinesterase level which confirms earlier studies on the effect of pesticides on the body.

159 THE RATE OF SPONTANEOUS ABORTIONS IN FEMALE WORKERS FROM THE WOOD-PROCESSING INDUSTRY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Objectives: This pair-study was performed to find out the rate of spontaneous abortions in female workers exposed to organic solvents from the wood-processing industry. **Methods:** The level of organic solvents was assessed within the workplaces during a 10-year period. 366 exposed female workers from the wood-processing industry were examined. The occupational and non-occupational data associated with their fertility were obtained by applying a standard epidemiological computed questionnaire. The reference group consisted of female workers non-exposed to hypo-fertilizing agents, residing in the same locality. The rate of spontaneous abortions was evaluated in both groups as an epidemiological fertility indicator. **Results:** Within the studied period, the organic solvents levels exceeded several time the maximal admissible concentrations in all workplaces. The long-term exposure to organic solvents caused a significant increase in rate of spontaneous abortions compared to the reference group (p < 0.05). The majority of abortions (85%) have happened in the first trimester of pregnancy. **Conclusions:** The long-term exposure to organic solvents may cause low fertility on female workers because of the spontaneous abortions. It is advised to reduce the organic solvents level in the air of all workplaces, as well as to stop working the pregnant women in exposure to organic solvents.

160 CLOSTRIDIUM DIFFICILE AND E. COLI COLONIZATION IN EARLY LIFE ARE ASSOCIATED WITH AN INCREASED RISK OF ALLERGY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Aberrant gut microbiota composition early in life may contribute to allergies in infants. **Objectives:** We examined the composition of the intestinal microbiota of infants and the risk of subsequently developing eczema, airway disease (wheezing) and allergic sensitisation (specific IgE) within the first two years of life. **Design and Methods:** Faecal samples of 957 one-month-old infants, participating in the Dutch KOALA Birth Cohort Study, were analysed for Bifidobacteria, Lactobacilli, Bacteroides, Clostridium difficile and Escherichia coli. Information about allergy in the first two years of life and potential confounders was collected by repeated questionnaires for all infants. Venous blood samples (for specific IgE determination) at age two years were available for 583 infants. **Results:** Infants colonised with Clostridium difficile had a higher risk of developing eczema (odds ratio [OR] = 1.40, 95% confidence interval [CI]: 1.02–1.91), wheezing (OR = 1.73, 95% CI: 1.08–2.77) and allergic sensitisation (OR = 1.54, 95% CI: 1.02–2.31). Colonisation with Escherichia coli was associated with an increased risk of eczema (OR = 1.87, 95% CI: 1.15–3.04). The other bacteria under study were not associated with the development of allergy. **Conclusion and Discussion:** In conclusion, this study supports the hypothesis that differences in the gut microbiota composition precede the development of allergies.

163 URBAN SPACE AND ISCHEMIC HEART DISEASE MORTALITY IN ELDERLY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Introduction: Rio de Janeiro city (RJ) presents a fast aging of the population with changes in morbi-mortality. Cardiovascular diseases are the first cause of death in elderly population. More than a half of ischemic heart diseases (IHD) cases occur in aged people (> 60 years old). **Objective:** Describe the spatial distribution of IHD mortality in the elderly population in RJ and associations with socio-demographics variables. **Methods:** Data were gathered from Information on Mortality System of the Ministry of Health and the 2000 Demographic Census of the Foundation of the Brazilian Institute for Geography and Statistics. The geographic distributions of the standardized coefficient of mortality due to IHD and socio-demographics variables, by districts, in 2000 were analyzed in ArcGis 8.0. Spatial autocorrelation of IHD was assessed by the Moran and Geary indices. A conditional autoregressive model was used to evaluate the association between IDH and socio-demographics variables. **Results:** Association between IDH mortality and income, educational level, family type and to possess computer, videocassette and microwave was found. **Conclusion:** Spatial analysis of the IDH mortality and socio-demographics factors influence are fundamental to subsidize more efficient public policies in sense to prevention and control of this important injury of health.

165 PROGNOSTIC FACTORS FOR METASTATIC DISEASE AFTER ISOLATED LOCO-REGIONAL RECURRENCES IN EARLY STAGE BREAST CANCER

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Purpose: To evaluate the prognostic impact of isolated loco-regional recurrences on metastatic progression among women treated for invasive stage I or II breast cancer (within phase III trials concerning the optimal management of breast cancer). *Patients and Methods:* The study population consisted of 3,602 women primary surgically treated for early stage breast cancer, enrolled in EORTC trials 10801, 10854, or 10902, by breast conservation (55%) and mastectomy (45%) with long time of follow-up (median: 10.2 range: 0.2–17.4). Data were analysed in a multi-state model by using multivariate Cox regression models, including a state-dependent covariate. *Results:* After the incidence of the loco-regional recurrence, a positive nodal status at baseline is a significant prognostic risk factor for distant metastases. The effects of the young ages at diagnosis and larger tumour size, become less significant after the incidence of loco-regional recurrences. The presence of a loco-regional recurrence in itself is a significant prognostic risk factor for distant metastases after loco-regional recurrences. The effect of the time to the loco-regional recurrence is not a significant prognostic factor. *Conclusion:* The presence of local recurrence is an important risk factor for outcome in patients with early breast cancer.

168 SMALL FOLLICLES LARGELY DETERMINE OVARIAN RESPONSE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The relationship between the antral follicles and ovarian reserve tests (ORT) to determine ovarian response in IVF is extensively studied. We studied the role of follicle size distribution in the response on the various ORTs in a large group of subfertile patients. *Methods:* In a prospective cohort study, female patients were included if they had regular ovulatory cycles, subfertility for >12 months, > = 1 ovary and > = 1 patent ovarian tube. Antral follicles were counted by ultrasound and blood was collected for FSH, including a clomiphene challenge test (CCCT), Inhibin B, and estradiol before and after administration of Puregon[RSYMBOL]. (EFORT test). Statistical analysis was performed using SPSS 12.0 for Windows. *Results:* Of 740 eligible patients, 489 participated. Mean age was 32.6 years and mean duration of subfertility was 21.7 months. Age, baseline FSH, CCCT and EFORT correlated with the number of small follicles (2–5 mm) but not with large follicles (6–10 mm). Regression analysis confirmed that the number of small follicles and average follicle size contributed to ovarian response after correction for age, while large follicles did not. *Conclusion:* small antral follicles are responsible for the hormonal response in ORT and may be suitable to predict ovarian response in IVF.

169 DENGUE AND DENGUE HEMORRHAGIC FEVER EPIDEMICS IN BRAZIL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: dengue epidemics account annually for several million cases and deaths worldwide. The high endemic level of dengue fever and its hemorrhagic form (DHF) correlates to extensive house infestation by *Aedes aegypti* and multiple viral serotype human infection. *Objective:* To describe dengue incidence evolutionary patterns and spatial distribution in Brazil. *Methods:* it is a review study that analyzed serial case reports registered since 1981 until 2003. *Results:* It was shown that defined epidemic waves followed the introduction of every serotype (DEN 1 to 3), and reduction in susceptible people possibly responded for downward case frequency. *Conclusions and Discussion:* An incremental expansion of affected areas and increasing occurrence of DHF with high lethality were noted in recent years. In contrast, efforts based solely on chemical vectorial combat have been insufficient. Moreover, some evidence demonstrated that educational action do not permanently modify population habits. In this regard it was stated that while vaccine is not available, further dengue control would depend on potential results gathered from basic interdisciplinary research and intervention evaluation studies, integrating environmental changes, community participation and education, epidemiological and virological surveillance, and strategic technological innovations aimed to stop transmission.

170 INSUFFICIENT PATIENT KNOWLEDGE ON PSORIASIS TREATMENTS REPRESENTS A BARRIER TO PARTICIPATION IN DECISION-MAKING

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Patient participation in treatment decisions can have positive effects on patient satisfaction, compliance and health outcomes. *Objectives:* Study objectives were to examine attitudes regarding participation in decision-making among psoriasis patients and to evaluate the effect of a decision-aid for discussing treatment options. *Methods:* A 'quasi experiment' was conducted in a large dermatological hospital in Italy: a questionnaire evaluating the decision-making process and knowledge on treatments was self-completed by a consecutive sample of 231 psoriasis patients after routine clinical practice and by a second sample of 171 patients exposed to a decision-board. *Results:* In routine clinical practice 67.9% of patients wanted to be involved in treatment decisions, 28.4% wanted to leave decisions entirely to the doctor and 3.7% preferred making decisions alone. 17.9% and 25.3% of the control and decision-board group had good knowledge level. At multivariate analysis good knowledge on treatments increased the likelihood of preferring an active role (OR = 2.21; 95%CI 1.3–3.9; p = 0.006). The decision-board only marginally improved patient knowledge and doctor-patient communication. *Conclusion and Discussion:* In conclusion, large proportions of patients want to participate in decision-making, but insufficient knowledge can represent a barrier. Further research is needed for developing effective instruments for improving patient knowledge and participation.

171 IMPACT OF ACTION AGAINST Aedes Aegypti: A PROSPECTIVE STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: the only available means of controlling infections caused by the dengue virus is the elimination of its principal urban vector (*Aedes aegypti*). Brazil has been implementing programs to fight the mosquito; however, since the 1980's the geographic range of infestation has been expanding steadily, resulting in increased circulation of the virus. **Objective:** To evaluate the effectiveness of the dengue control actions that have been implemented in the city of Salvador. **Methods:** prospective design, serologic inquiries were made in a sample population of residents of 30 urban 'sentinel areas'. The seroprevalence and one year seroincidence of dengue are estimated and the relationship between intensity of viral circulation and the standards of living and vector density is analysed. **Results:** There were high overall seroprevalence (67.7%) and seroincidence (70.6%) for the circulating serotypes (DENV-1 and DENV-2). The effectiveness of control measures appears to be low, and although a preventable fraction of 29.7% was found, the incidence of infections in these areas was still very high (55.4%). **Conclusions and discussions:** it is necessary to revise the technical and operational strategies of the infection control program in order to attain infestation levels that are low enough to interrupt the circulation of the dengue virus.

174 CANCER MORTALITY AMONG MIGRANTS IN THE NETHERLANDS: CONVERGENCE TOWARDS THE NATIVE DUTCH POPULATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

This study investigates the difference in cancer mortality risks between migrant groups and the native Dutch population, and determines the extent of convergence of cancer mortality risks according to migrants' generation, age at migration and duration of residence. Data were obtained from the national population & mortality registries in the period 1995–2000 (75860 person years, 173461 cancer deaths). We used Poisson regression to compare the cancer mortality rates of migrants originating from Turkey, Morocco, Surinam, Netherlands Antilles/Aruba to the rates for the native Dutch. **Results:** All-cancer mortality among all migrant groups combined was significantly lower compared to the native Dutch population (RR = 0.55 CI: 0.52–0.58). Mortality rates for all cancers combined were higher among 2nd generation migrants, among those with younger age at migration, and those with longer duration of residence. This effect was particularly pronounced in lung cancer and colorectal cancer. For most cancers, mortality among 2nd generation migrants remained lower compared to the native Dutch population. Surinamese migrants showed the most consistent pattern of convergence of cancer mortality. **Conclusions:** The generally low risk of cancer mortality for migrants showed some degree of convergence but the cancer mortality rates did not yet reach the levels of the native Dutch population.

175 NOTIFICATION OF LEGIONNAIRES' DISEASE PATIENTS TO AUTHORITIES SHOULD BE DONE BY DIAGNOSTIC LABORATORIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Legionnaires' disease (LD) is a notifiable disease in the Netherlands. LD cases are reported to authorities for national surveillance. Supplementary, a national LD Outbreak Detection Program (ODP) is installed in the Netherlands. These two registration systems have their own information exchange process and databases. **Objectives:** Surveillance systems are known to suffer from incompleteness of reported data. Co-existence of two databases creates the opportunity to investigate accuracy and reliability in a national surveillance system. **Design and Methods:** Comparison was made between the outcome 'diagnosis by culture' in both databases and physical presence of *Legionella* strains in laboratories for 174 patients. Accuracy is described using the parameters sensitivity and correctness. For reliability, Cohen's kappa coefficient (κ) was applied. **Results:** Accuracy and reliability were significantly higher in the ODP database, but not optimal in both databases when compared to data in laboratories. The ODP database was moderately reliable ($\kappa = 0.56$; 95%CI 0.43–0.69), the surveillance database slightly ($\kappa = 0.14$; 95%CI 0.02–0.27). **Conclusion:** Our findings suggest that diagnostic notification data concerning LD patients are most accurate and reliable when derived directly from diagnostic laboratories. **Discussion:** Involvement of data-entry persons in outbreak detection results in higher reliability. Unreliable data may have considerable consequences during outbreaks of LD.

176 POLISH YOUNG PHYSICIANS AND THEIR PROFESSIONAL PLANS - SHOULD WE EXPECT THE MASS EMIGRATION?

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

The aim of the study was to investigate the medical students' plans to emigrate, quantify the scale of migration in the near future and to build a profile of the possible emigrants. Data were collected based on anonymous questionnaire delivered to random group of 367 medical students (Katowice). We used the binary logistic regression and multivariate analysis to identify the differences between groups preferring to go abroad or stay in Poland. 85% respondents confirmed that considerate the emigration; 35.3% of them declared they are very likely to move and further 10.7% is certain. 23.9% of those considering emigration confirmed having taken practical steps towards moving. Binary logistic regression showed no difference between people who were certain or almost certain to go and those who were not considering going for most baseline characteristics: hometown size, socio economic background and having family tradition of the medical profession ($p = 0.19$). Only marks' mean differentiates between the two groups: 4.01 for those who will definitely stay vs 3.7 for students who will definitely move ($p = 0.02$). The multivariate analysis gave similar results. **Conclusions:** Most of the students consider the emigration, but the declarations of will to departure are more frequent among those with the worse marks.

180 FALLS INCIDENCE AND RISK FACTORS AMONG ELDERLY PATIENTS. A STUDY IN AN ITALIAN GENERAL PRACTICE SETTING

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Falls incidence in home resident elderly people varies from 30% to 40%. Falls induce loss of self-sufficiency and increase mortality and morbidity. *Objectives:* to evaluate falls incidence and risk factors in a group of general practice elderly patients. *Design:* prospective cohort study with 1 year follow-up *Methods:* Eight hundreds elderly (>75 years) were visited by 18 practitioners for a baseline assessment. Information on current pathologies and previous falls in the last six months was collected. Functional status was evaluated using: Short Portable Mental State Questionnaire, Geriatric Depression Scale, Activities of Daily Living (ADL), Instrumental Activities of Daily Living, total mobility Tinetti score. Falls were monitored through 2 phone-interviews at 6 and 12 months. Data were analyzed through logistic regression. *Results:* Twenty-eight percent of the elderly fell in the whole period. Sixty percent of falls were not reported to the practitioner. Independent predictors for falls were ADL score (ADL < 5: OR = 1.88; 95% CI 1.04–3.38) and previous falls (OR = 1.60; 95% CI 1.02–1.52). Tinetti score was significantly associated to falls only in univariate analysis. *Conclusions:* Practitioners can play a key-role in identifying at-risk subjects and managing prevention interventions. Falls monitoring and a continuous practice of comprehensive geriatric assessment should be encouraged.

181 HOSPITALIZATION AND POOR ORAL HEALTH. AN ITALIAN STUDY AMONG A DISADVANTAGED ELDERLY POPULATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Oral health represents an important indicator of health status. Socio-economic barriers to oral care among elderly are considerable. In the Lazio Region, a public health program for oral rehabilitation was implemented to offer dentures to elderly people with social security. *Objectives:* To compare hospitalisation between elderly enrolled in the program and a control group. *Design and Methods:* For each elderly enrolled in the program living in Rome, three controls, matched for sex and age, were selected from Rome Municipality Register. Hospital admissions in the two-year period before enrollment were traced by record-linkage with the hospital discharge register. *Results:* Totally, 2,935 admissions occurred. The annual admissions rate was 218 per 1000 elderly among controls and 329 in the program group (incidence rate ratio: IRR = 1.50; 95% CI 1.40–1.63). When comparing diagnosis-specific rates, significant excesses were observed in the program group for respiratory diseases (men: IRR = 2.62 [95% CI 1.83–3.74]; women: IRR = 4.68 [95% CI 2.76–8.07]) and cardiovascular diseases (men: IRR = 1.49 [95% CI 1.24–1.79]; women: IRR = 1.64; [95% CI 1.29–2.08]) *Conclusions:* Our analysis evidences an excess in the hospitalization of a disadvantaged elderly population with a poor oral health. Further research is required to evaluate the independent effect of oral health on chronic diseases.

185 HERPES SIMPLEX VIRUS TYPE 1 AND TYPE 2 IN THE NETHERLANDS: PREVALENCE AND RISK FACTORS IN THE GENERAL POPULATION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Herpes Simplex Virus (HSV) type 1 and 2 are important viral Sexually Transmitted Diseases (STI) and can cause significant morbidity. In the Netherlands, data about prevalences in the general population are hampered. *Objective:* Description of the seroprevalences of HSV-1 and HSV-2 and associated factors in the Netherlands. *Design and Methods:* A Population based Serum bank survey in the Netherlands with an age-stratified sample was used (1995–1996). Antibodies against HSV-1 and HSV-2 were determined using ELISA. A questionnaire was used to get information on demographics and risk factors. A logistic regression adjusting for age and full multiple regression were done to establish risk factors. *Results:* Questionnaires and sera were available for 7166 persons. Both HSV-1 and HSV-2 seroprevalence increased with age. Seroprevalence of HSV-1 was 59.5% and was amongst others associated with female sex and being divorced. Seroprevalence of HSV-2 was 8.4% and was amongst others associated with being divorced and a history of STI. *Conclusion:* Seroprevalence is higher in certain groups like teenagers, women, divorced people and those with a history of STI. Prevention should be focused on those groups. More research is needed on prevention methods, which can be used in the Netherlands, like screening or vaccination.

186 BACTERIOLOGICAL MONITORING OF THE AIR IN HOSPITALS IN SKOPJE, PROGRAM FOR HOSPITAL INFECTION CONTROL (1999–2005)

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: There are various attitudes concerning the frequency of bacteriological monitoring of working surface and air in hospitals, ranging from once a year to several monitorings per year. The purpose of this study is to present the results of the epidemiological supervision and bacteriological investigation of the air in the hospitals in Skopje, in accordance with the Program for hospital infection control and prevention 'Sluzben list No 17' from 1998. *Method and Materials:* The semi-quantitative method was used. The initial and final information were elaborated by the Department of Epidemiology and the Department of Microbiology. *Results:* Controls were made in hospitals where there is a considerable risk of hospital infection. On the territory of Skopje, from 1999 to 2005, 207 epidemiological supervisions in 14 hospitals were made and 3841 samples from working surface and 1379 samples for air research were taken. The hospital air (95) 6.9% is considerably polluted. 43 (45.2%) samples were incorrect because of the substantial amount of bacteria. *Conclusion:* Epidemiological supervision, reports of the results, control of the method of disinfecting, and training of the hospital staff were the core concerns of this Program.

189 ACCURATE PREDICTION OF THE NEED FOR INVASIVE TREATMENT IN BPH PATIENTS IS NOT POSSIBLE. A BOOTSTRAP VALIDATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Frequently, statistically significant prognostic factors are reported with suggestions that patient management should be modified. However, the clinical relevance of such factors is rarely quantified. *Objectives:* We evaluated the accuracy of predicting the need for invasive treatment among BPH patients managed conservatively with alpha1-blockers. *Methods:* Information on eight prognostic factors was collected from 280 patients treated with alpha1-blockers. With PHM regression coefficients a risk score for retreatment was calculated for each patient. The analyses were repeated on 1000 groups of 280 patients sampled from the original case series. These bootstrap results were compared to the original results. *Results:* Three significant predictors of retreatment were identified. The 20% of patients with the highest risk score had an 18-month risk of retreatment of only 20%. Analyses of less than half of all the bootstrap samples resulted in the same three significant prognostic factors. The 20% of patients with the highest risk score in each of the 1000 samples experienced a highly variable risk of retreatment of 0% to 42%. *Conclusions:* Four of the five high risk patients would be overtreated with a modified policy. Internal validation procedures may warn against the invalid translation of statistical significance into clinical relevance.

190 POLYMORPHISMS IN THE E-CADHERIN (CDH1) GENE PROMOTER AND THE RISK OF BLADDER CANCER

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: E-cadherin expression is frequently lost in human epithelium derived cancers, including bladder cancer. For two genetic polymorphisms in the region of the E-cadherin gene (CDH1) promoter, a reduced transcription has been reported: a C/A single nucleotide polymorphism (SNP) and a G/GA SNP at 160 bp and 347 bp, respectively, upstream of the transcriptional start site. *Objective:* We studied the association between both polymorphisms and the risk of bladder cancer. *Methods:* 174 patients with bladder cancer and 326 population controls were genotyped for the -160 C/A and the -347 G/GA promoter polymorphisms using PCR-RFLP. *Results:* A significantly increased risk for bladder cancer was found for A allele carriers compared to the homozygous C allele carriers (OR 1.58; 95% CI: 1.06–2.35). The risk for the heterozygous and homozygous A allele carriers, was increased approximately 1.5 and 2-fold, respectively. The association was stronger for more aggressive tumors. We did not find any association between the -347 G/GA SNP and bladder cancer. *Conclusion:* This study indicates that the -160 C/A SNP in the E-cadherin gene promoter is a low-penetrance susceptibility factor for bladder cancer.

193 TYPE, CONTEXT AND CAUSE OF INJURIES: REPETITIVE AND SINGLE INJURY PATIENTS COMPARED

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Health problems, whether somatic, psychiatric or accident-related cluster within persons. The Study of Allostatic Load as a Unifying Theme (SALUT) aims to identify risk factors that are shared by different pathologies and that could explain this clustering. Studying patients with repetitive injuries might be helpful to identify risk factors that are shared by accident-related and other health problems. *Objectives:* To study injury characteristics in repetitive injury (RI) patients as compared to single injury (SI) patients. *Methods:* The presented study included 196 RI patients and 558 SI patients. Medical records provided information about injury characteristics and patients were asked for possible causes and context. *Results:* RI patients suffered significantly more from contusions than SI patients (25% vs 16%). Regarding the context, SI patients were significantly more injured in traffic (28% vs 23%). In both groups most injuries were attributed to 'mere bad luck' (RI 44%, SI 49%), closely followed by 'clumsiness or inattention' (RI 39%, SI 44%). RI patients pointed out aggression or substance misuse significantly more often than SI patients (17% vs 7%). *Conclusion:* RI patients seem to have more 'at risk' behavior (i.e. aggression, impulsivity), which will increase their risk for psychiatric health problems.

194 BREASTFEEDING AND ECZEMA IN THE KOALA BIRTH COHORT STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Breastfeeding may have a protective effect on infant eczema. Bias as a result of methodological problems may explain the controversial scientific evidence. *Objective:* We studied the association between duration of breastfeeding and eczema when taking into account the possible influence of reverse causation. *Design and Methods:* Information on breastfeeding, determinants and outcomes at age one year was collected by repeated questionnaires in 2834 mother infant-pairs participating in the KOALA study (535 cases of eczema). To avoid reverse causation, a period-specific-analysis was performed in which only 'at risk' infants were considered. *Results:* No statistically significant association between the duration of breastfeeding (> 12 weeks versus formula feeding) and the risk of eczema in the first year was found (OR 2.07 95%CI 0.69–6.22). After excluding from the analysis all breastfed infants with symptoms of eczema reported in the same period as breastfeeding, also no statistical significant association was found for the duration of breastfeeding and eczema between 4 and 12 months (OR 1.45 95%CI 0.34–6.25). *Conclusion and Discussion:* In conclusion, no evidence was found for a protective effect of breastfeeding duration on eczema. This conclusion was strengthened by risk period-specific-analysis which made the influence of reverse causation unlikely.

196 CONNECTED FOR HEALTH: PUBLIC USE OF THE INTERNET FOR MENTAL HEALTH INFORMATION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The internet can be used to meet health information needs, provide social support, and deliver health services. The anonymity of the internet offers benefits for people with mental health problems, who often feel stigmatized when seeking help from traditional sources. **Objectives:** To identify the prevalence of internet use for physical and mental health information among the UK population. To investigate the relationship of internet use with current psychological status. To identify the relative importance of the internet as a source of mental health information. **Design and Methods:** Self-completion questionnaire survey of a random sample of the UK population (n = 1800). Questions included demographic characteristics, health status (General Health Questionnaire), and use of the internet and other information sources. **Results:** 59% of internet users had sought health information online, and 18% had sought mental health information. Use was higher among those with current psychological problems. Only 12% of respondents identified the internet as one of the most accurate sources of mental health information, compared with 24% who identified it as one of the sources they would use. **Conclusions:** Health service providers must recognise the increasing use of the internet in healthcare, even though it is not always regarded as being accurate.

198 INDIVIDUAL FALLS PREVENTION BY A TRAINED NURSE IN PRIVATE HOMES OF OLD AGED PERSONS – FIRST RESULTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Old age is a significant risk factor for falls. Approximately 45% of people older than 80 are falling at least once a year, mostly in the own homes. Resulting hip fractures cause at least partial immobility in 40–50% of the affected persons. Almost 20% are sent to nursing homes afterwards. In Mecklenburg-West Pomerania, ageing of the population proceeds particularly fast. To prevent falls and the loss of independent living a falls prevention module was integrated in a community-based study conducted in cooperation with a general practitioner (GP). In the patients homes' a trained nurse performed a test to estimate the falls risk of each patient and a consultation how to reduce risk, e.g. eye sight check, gymnastic exercise. In the feasibility study 11 (55%) out of 20 patients (average age 74 years), agreed to a visiting of each room of their homes in search for tripping dangers. The evaluation was assisted by a standardized, computer-based documentation. The prevention module received a considerable acceptance despite the extensive home visiting. Within one month the patients started to transfer advice into practice. During the first follow up visits of the nurse three patients reported e.g. to have started gymnastics and/or wear stable shoes.

201 EPIDEMIOLOGY OF ISONIAZID AND RIFAMPIN RESISTANCE AMONG MYCOBACTERIUM TUBERCULOSIS BY CONVENTIONAL METHOD AND PCR

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The emergence of drug resistant M. tuberculosis (MTB) is an increasing problem in both developed and developing countries. **Objectives:** investigation of isoniazid (INH) and rifampin (RIF) susceptibility patterns among MTB isolates from patients. **Design and Methods:** In total 80 sputum samples were collected. Smears were prepared for acid fast staining and all the isolates were identified as M. tuberculosis by preliminary cultural and biochemical tests. The isolates were examined for INH and rifampin resistance using conventional MIC method and PCR technique by using specific INH (Kat G) and rifampin (rpo B) resistant primers. **Results:** Seven isolates were resistant to both INH and rifampin by MIC method. In PCR technique, 5 and 6 out of 7 above mentioned strains showed resistant to INH and rifampin respectively. **Conclusion:** The epidemiology of drug resistance is 8.7% in region of study which is significant. **Discussion:** conventional MIC method despite being time consuming is more sensitive for evaluation of drug resistance, However, PCR as a rapid and sensitive technique is recommended additionally to conventional method for having quicker results to start treatment and disease control management.

202 THE INFLUENCE OF DESIGN CHARACTERISTICS OF FOOD FREQUENCY QUESTIONNAIRES ON THEIR VALIDITY TO ASSESS ENERGY INTAKE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background and Objectives: We studied in literature which design characteristics of food frequency questionnaires (FFQs) influence their validity to assess both absolute and relative levels of energy intake in adults with western food habits, and to rank them according to these intakes. This information is required in harmonizing FFQs for multi centre studies. **Design and Methods:** We performed a review of studies investigating the validity or reproducibility of FFQs, published since 1980. The included studies validated FFQs against doubly labeled water (for energy expenditure) as a gold standard, or against food records or 24 hour recalls for assessing relative validity (for energy intake). The design characteristics we studied were the number of food items, the reference period, the administration mode, and inclusion of portion size questions. **Results: and conclusion:** For this review we included 35 articles representing the validation of 37 questionnaires. Three questionnaires were validated against DLW, ten against urinary N and 25 against 24-hour recalls or food records. In conclusion a positive linear relationship ($r = 0.57$, $p < 0.0001$) was observed between the number of items on the FFQ and the reported mean energy intake. Details about the influence of other design characteristics on validity will be discussed at the conference.

203 ETHANOL INTAKE AND LUNG CANCER RISK IN THE EUROPEAN PROSPECTIVE INVESTIGATION INTO CANCER AND NUTRITION (EPIC)

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: High ethanol intake may increase the risk of lung cancer. *Objectives:* To examine the association of ethanol intake with lung cancer in EPIC. *Design and Methods:* Information on baseline and past alcohol consumption, lifetime tobacco smoking, diet, and anthropometrics of 478,590 participants was collected between 1992 and 2000. Cox proportional hazard regression was used to examine the association of ethanol intake at recruitment (1119 cases) and mean lifelong ethanol intake (878 cases) with lung cancer. *Results:* Non-consumers at recruitment had a higher lung cancer risk than low consumers (0.1–4.9 g/day) [HR = 1.22, 95% CI 0.99–1.50]. Lung cancer risk was lower for moderate ethanol intake at recruitment (5.0–14.9 g/day) compared with low intake (HR = 0.76, 95% CI 0.63–0.90); no association was seen for higher intake. Compared with lifelong low consumers, lifelong non-consumers did not have a higher lung cancer risk (HR = 1.01, 95% CI 0.67, 1.50) but lifelong moderate consumers had a lower risk (HR = 0.80, 95% CI: 0.66–0.97). Lung cancer risk tended to increase with increasing lifelong ethanol intake (=60 vs. 0.1–4.9 g/day HR = 1.29, 95% CI: 0.93–1.74). *Conclusion:* While lung cancer risk was lower for moderate compared with low ethanol intake in this study, high lifelong ethanol intake might increase the risk.

204 LOW PERINATAL OMEGA-3 FATTY ACID SUPPLY INCREASES THE RISK OF ATOPIC ECZEMA IN THE FIRST YEAR OF LIFE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: One of the hypotheses to explain the increasing prevalence of atopic diseases (eczema, allergy and asthma) is imbalance between dietary intake of omega-6 and omega-3 fatty acids. *Objectives:* We evaluated the role of perinatal fatty acid (FA) supply from mother to child in the early development of atopy. *Design and Methods:* FA composition of breast milk was used as a marker of maternal FA intake and placental and lactational FA supply. Breast milk was sampled 1 month postpartum from 312 mother-infant pairs in the KOALA Birth Cohort Study, the Netherlands. The infants were followed for atopic symptoms (repeated questionnaires on eczema and wheezing) and sensitisation at age 2 (specific serum IgE against major allergens). Multivariate logistic regression analysis was used to adjust for confounding factors. *Results:* High levels of omega-3 long chain polyunsaturated FAs were associated with lower incidence of eczema in the first year (odds ratio for the highest vs lowest quintile 0.31, 95% confidence interval 0.12–0.81; trend over quintiles P = 0.007). Wheeze and sensitisation were not associated with breast milk FA composition. *Conclusion and Discussion:* The results support the omega-6/3 hypothesis. We suggest that anti-inflammatory activity of omega-3 eicosanoid mediators is involved but not allergic sensitisation.

205 EVALUATING THE DIFFERENCES AMONG ITALIAN REGIONS OF INFARCTION IN-HOSPITAL FATALITY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Acute Myocardial Infarction (AMI) is among the main causes of death in Italy and is characterized by high fatality associated with a fast course of the disease. Consequently timeliness and appropriateness of the first treatment are paramount for a positive recovery. *Objectives:* Investigate the differences among Italian regions of AMI first treatment and in-hospital deaths. *Design and Methods:* Following the theoretical care pathway (from onset of AMI to hospitalization and recovery or death), regional in-hospital deaths are decomposed into the contributions of attack rate, hospitalization and in-hospital fatality. Hospital discharges, death and population data are provided by the Official Statistics. *Results:* Generally in Northern and Central regions there is an excess of observed in-hospital deaths, while the opposite occurs in Southern regions. *Conclusion:* In Northern and Central regions the decomposition method suggests a more frequent and severe illness, generally accompanied by a higher availability of hospitals; exceptions are Lombardia and Lazio, where some inefficiencies in the hospital system are highlighted. In most Southern regions the decomposition confirms a less frequent and less severe illness; exceptions are Campania and Sicilia, where only the less severe patients reach the hospital and then recover, while the others die before reaching the hospital.

207 CORRELATIONS BETWEEN ARTERIAL CALCIFICATION IN DIFFERENT VESSEL BEDS; THE ROTTERDAM STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Atherosclerotic lesions have typical histological and histochemical compositions at different stages of their natural history. The more advanced atherosclerotic lesions contain calcification. *Objective:* We examined the prevalence of and associations between calcification in the coronary arteries, aortic arch and carotid arteries assessed by multislice computed tomography (MSCT). *Methods:* This study was part of the Rotterdam Study, a population-based study of subjects aged 55 years and over. Calcification was measured and quantified in 600 subjects. Correlation coefficients were computed using Spearman's correlation coefficients. *Results:* The prevalence of calcification increased with age throughout the vascular bed. In subjects aged 80 and over, up to 100% of men had calcification in the coronary arteries and up to 100% of women had calcification in the aortic arch. In men, the strongest correlation was found between calcification in the aortic arch and the carotid arteries ($r=0.60$, $P<0.001$). In women, the relations were somewhat lower, the strongest correlation was found between calcification in the coronary arteries and the carotid arteries ($r = 0.47$, $P<0.001$). *Conclusion and Discussion:* In conclusion, the prevalence of calcification was generally high and increased with increasing age. The study confirms the presence of strong correlations between atherosclerosis in different vessel beds.

208 DETERIORATION OF HEALTH SLOWED DOWN AT RETIREMENT AGE IN A GERMAN HEALTH SURVEY BUT NOT IN A CALIFORNIA HEALTH SURVEY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Health status deteriorates with age and can be affected by transition from active work to retirement. *Objective:* To assess the effect of retirement on age related deterioration of health. *Methods:* Secondary analysis of the German Health Survey (Bundesgesundheitsurvey 1998) and California Health Interview Survey (CHIS 2003). Subjective health was assessed by a single question regarding respondent's health status from 1 = excellent to 5 = poor. Locally weighted regression was used for exploratory analysis and b-splines for the effect estimation in regression models. *Results:* Subjective health decreased in an obviously non-linear manner with age. In both cases the decrease could be reasonably approximated by two linear segments, however the pattern was different in the German and California sample. In Germany, the change point of the slope describing deterioration of health was located at 59.0 years (95% CI 54.0–64.0), with a decrease of 0.018 (0.016–0.019) points per year of age below and of 0.005 (–0.001–0.011) above the change point. In California, the change point was located at 40.4 years (37.6–43.2), with a decrease of 0.002 (–0.001–0.004) points per year below and of 0.016 above the change point. *Conclusion:* Health is affected in a potentially different way by retirement in Germany and in California.

209 PHYSIOTHERAPY MORE EFFECTIVE THAN GENERAL PRACTITIONERS' CARE ALONE IN PATIENTS WITH SCIATICA?

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objective: To assess the effectiveness of physiotherapy compared to general practitioners' care alone, in patients with acute sciatica. *Design, Setting and Patients:* A randomised clinical trial in primary care with a 12-months follow-up period. 135 patients with acute sciatica (recruited 2003 – 2004) were randomised in two groups: 1) intervention group received physiotherapy (active exercises), and 2) control group received general practitioners' care only. Main outcome measures The primary outcome was patients' global perceived effect. Secondary outcomes were severity of leg and back pain, severity of disability, general health and absence from work. The outcomes were measured at 3, 6, 12 and 52 weeks after randomisation. *Results:* At 3 months follow-up, 70% of the intervention group and 62% of the control group reported improvement (RR 1.1; 95% CI 0.9 to 1.5). At 12 months follow-up, 79% of the intervention group and 56% of the control group reported improvement (RR 1.4; 95% CI 1.1; 1.8). No significant differences in secondary outcomes were found at short-term or long-term follow-up. *Conclusion:* At 12 months follow-up, evidence was found that physiotherapy added to general practitioners' care is more effective in the treatment of patients with acute sciatica than general practitioners' care alone.

211 TIME TRENDS OF INCIDENCE, MORTALITY, AND RELATIVE SURVIVAL OF INVASIVE SKIN MELANOMA IN LITHUANIA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Only little is known about the epidemiology of skin melanoma in the Baltic States. *Objectives:* The aim of this study was to provide insights into the epidemiology of skin melanoma in Lithuania by analyzing population-based incidence (1978–2002) and mortality (1990–2002) time trends and relative survival based on 3485 skin melanoma. *Methods:* We calculated age-standardized incidence and mortality rates (cases per 100,000) using the European Standard Population and calculated period estimates of relative survival. For the period 1993–2002, 76% of all registered cases were checked by reviews of the medical charts. *Results:* About 97% of the 2013 cases of the period 1993–2002 were reported to the cancer registry indicating a high quality of cancer registration of skin melanoma in Lithuania. The incidence rates increased from 1978 (men: 1.7, women: 2.3) to 2002 (men: 5.0, women: 7.0). Mortality rates increased from 1990 (men: 1.2, women: 1.7) to 2002 (men: 2.3, women: 2.2). Relative 5-year relative survival rates among men were 10% lower than among women. The overall difference in survival is mainly due to a more favorable survival among women aged 60–74 years. *Conclusions:* Overall prognosis is less favorable among men most likely due to diagnoses at later stages.

213 TIME TRENDS OF INCIDENCE, MORTALITY, AND RELATIVE SURVIVAL OF INVASIVE SKIN MELANOMA IN LITHUANIA

A.S. Stang¹, A. Stang¹, S. Valiukeviciene², B. Aleknaviciene³, J.K. Kurtinaitis⁴ ¹University of Halle-Wittenberg, HALLE (SAALE), Germany ²Clinic of Skin and Veneral Diseases, KAUNAS, Lithuania ³Institute of Oncology, Vilnius Universit, VILNIUS, Lithuania ⁴Lithuania Cancer Registry, VILNIUS, Lithuania

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216 UNIVERSAL RISK FACTORS FOR MULTIFACTORIAL DISEASES; RATIONALE AND DESIGN OF THE LIFELINES PROJECT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Multifactorial diseases share many risk factors, genetic as well as environmental. To investigate the unresolved issues on etiology of and individual susceptibility to multifactorial diseases, the research focus must move from single determinant – outcome relations to modification of universal risk factors. **Objectives:** The aim of the LifeLines project is to study universal risk factors and their modifiers for multifactorial diseases. Modifiers can be categorized into factors that determine the effect of the studied risk factor (eg gen-expression), those that determine the expression of the studied outcome (eg previous disease), and generic factors that determine the baseline risk for multifactorial diseases (eg age). **Design and Methods:** LifeLines is carried out in a representative sample of 165.000 participants from the northern provinces of the Netherlands. Apart from questionnaires and clinical measurements, a biobank is constructed (blood, urine, DNA). Lifelines will employ a three-generation family design (proband design with relatives), which has statistical advantages, enables unique possibilities to study social characteristics, and offers practical benefits. **Conclusion:** LifeLines will contribute to the understanding of how disease-overriding risk factors are modified to influence the individual susceptibility to multifactorial diseases, not only at one stage of life but cumulatively over time: the lifeline.

219 TREND FOR DECREASED MORTALITY IN SEVERE OBESITY: AN ITALIAN MULTICENTRIC COHORT STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Obesity-related mortality is a major public health problem, but few studies have been conducted on severely obese individuals. **Objectives:** We assessed long-term mortality in treatment-seeking, severely obese persons. **Design and Methods:** We enrolled 4837 persons in six centres for obesity treatment in four Italian regions, with body mass index (BMI) at first visit = > 40 kg/m² and age = > 18. After exclusion of duplicate registrations and persons with missing personal or clinical data, 4662 persons were followed up; as 164 (3.5%) could not be traced, 4498 persons (972 men, 3526 women) were retained for analysis. **Results:** There were 484 (153 men, 331 women) deaths; the standardized mortality ratios (SMRs) and 95% confidence intervals were 278 (236–326) among men and 210 (188–234) among women. Mortality increased with increasing BMI, but the trend was not monotonic in men. Lower SMRs were observed among persons recruited more recently. Excess mortality was inversely related to age attained at follow-up. **Conclusions and Discussion:** The harmful, long-term potential of severe obesity we documented confirms observations from studies carried out in different nutritional contexts. The decrease in mortality among most recently recruited persons may reflect better treatment of obesity and of its complications.

221 REGIONAL DIFFERENCES IN SURVIVAL OF FINNISH CANCER PATIENTS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: In Finland, every cancer patient should have equal access to high quality care provided by the public sector. Therefore no regional differences in survival should be observed. **Objectives:** The aim of the study was to find any regional differences in survival, and to elaborate whether possible differences could be explained, e.g., by differences in distributions of prognostic factors. **Design and Methods:** The study material consisted of 159,000 patients diagnosed in 1993 to 2000 with cancer at one of the 15 major primary sites. The common closing date was 31 Dec. 2001. Finland was divided into five university hospital regions. Stage, age at diagnosis and sex were used as prognostic factors. The relative survival rates for calendar period window, 1998–2001, were tabulated using period method and modelled. **Results:** Survival differences between the regions were not significant for most primary sites. For some sites, the differences disappeared in the modelling phase after adjusting for the prognostic factors. For a few of the primary sites (e.g., carcinoma of the ovary), regional differences remained after modelling. **Conclusion:** We were able to highlight certain regional survival differences. Ways to improve the equity of cancer care will be considered in collaboration with the oncological community.

223 DISORDERED MINERAL METABOLISM INCREASES THE RISK OF CARDIOVASCULAR MORBIDITY IN DIALYSIS PATIENTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The prevalence of cardiovascular disease (CVD) is extremely high in dialysis patients. Disordered mineral metabolism, including hyperphosphatemia and hypercalcaemia, contributes to the development of CVD in these patients. **Objectives:** To assess associations between plasma calcium, phosphorus and calcium-phosphorus product levels and risk of CVD-related hospitalization in incident dialysis patients. **Design and Methods:** In NECOSAD, a prospective multi-centre cohort study in the Netherlands, we included 1629 consecutive patients new on haemodialysis or peritoneal dialysis between 1997 and 2004. Risks were estimated using adjusted time-dependent Cox regression modeling. **Results:** Mean age was 60 ± 15 years, 61% was male, and 64% was treated with haemodialysis. CVD was the cause of hospitalization in 159 haemodialysis patients (26% of hospitalizations) and in 60 peritoneal dialysis patients (22%). Most common cardiovascular morbidities were peripheral vascular disease and coronary artery disease in both patient groups. In haemodialysis patients risk of CVD-related hospitalization increased with elevated plasma calcium (Hazard Ratio: 1.8; 95% CI: 1.1 to 2.9) and calcium-phosphorus product levels (1.8; 95% CI: 1.2 to 2.7). In peritoneal dialysis patients, we observed similar effects that were not statistically significant. **Conclusion:** Tight control of plasma calcium and calcium-phosphorus product levels might prevent CVD-related hospitalizations in dialysis patients.

230 HEALTH SURVEILLANCE AMONG AN ISRAELI NURSES COHORT

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Nurses are at health risk due to the nature of their work. Analysis of morbidity among nurses was conducted to provide insight concerning the relationship between their occupational exposure and health response. *Methods:* Self reported medical history, was collected from an Israeli female-nurses cohort (n = 395, 50+ years old) and their siblings (n = 180, age matched +/-7 years) using a structured questionnaire. To compare disease occurrence between the two groups we used chi-square tests and hazard ratio (HR) was calculated by Cox-regression to account for age of onset. *Results:* Cardiovascular diseases were more frequent among the nurses compared to the controls: heart diseases 14.2% vs. 6.1, p = .0052 (HR = 2.02, p = .0329); hypertension 43.8% vs. 23.3%, p < .0001 (HR = 1.78, p = .0008). The frequency of hyperlipidemia was 40.3% among the nurses, and only 12.2% among the controls. (HR = 3.31, p = .0001). For the following chronic diseases the occurrence were significantly higher among the nurses and the HRs were significantly higher than 1: thyroid, HR = 2.21; liver, HR = 10.37. Total cancer and diabetes rates were similar in the groups (HR ~ 1). *Conclusions:* The results suggest an association between working as a nurse and the existence of risk factors for cardiovascular diseases. The specific related determinants of their work should be further evaluated.

231 EFFECTS OF FIRST VASCULAR ACCESS AND NEPHROLOGIST REFERRAL TIMING ON MORTALITY AMONG CHRONIC DIALYSIS PATIENTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Early referral (ER) to a nephrologist and arteriovenous fistulae as first vascular access (VA) reduce negative outcomes in chronic dialysis patients (CDP). *Objectives:* To evaluate the effect of nephrologist referral timing and type of the first VA on mortality. *Design and Methods:* Prospective cohort study of 2260 incident CDP notified to Lazio Dialysis Registry (Italy) in 2002–2004. Late referral (LR) was a patient not referred to nephrologists within 6 months before starting dialysis. We dichotomized VA as fistulae versus catheters. To estimate mortality hazard ratios (HR) a multivariate Cox model was performed. *Results:* We observed 22.3% LR subjects and 24.8% catheters as first VA; proportion of catheters was 41.2% vs. 20.1% (p < 0.001) for LR and ER, respectively. We found a higher mortality HR for patient with a catheter as first VA both for ER (HR = 1.58; 95% C.I. = 1.22–2.06) and LR (HR = 2.56; 95% C.I. = 1.92–3.43); the interaction between referral and VA was slight significant (p = 0.13). *Conclusions:* The originality of our study was to investigate the influence of nephrologist referral timing and VA on CDP mortality using a population registry, area-based: we found that a catheter as first VA has an independent effect for mortality and modifies the effect of referral timing on this outcome.

232 FAMILY HISTORY PREDICTS VENOUS THROMBOSIS IN THE ABSENCE OF KNOWN RISK FACTORS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Patients with idiopathic venous thrombosis (VT) without known genetic risk factors but with a positive family history might carry yet unknown genetic defects. To determine the role of unknown hereditary factors in unexplained VT we calculated the risk associated with family history. In the Multiple Environmental and Genetic Assessment of risk factors for VT (MEGA) study, a large population-based case-control study, we collected blood samples and questionnaires on acquired risk factors (surgery, immobilisation, malignancy, pregnancy and hormone use) and family history of 2463 patients and 2926 control subjects. Overall, positive family history was associated with an increased risk of VT (OR (95% CI): 2.4 (2.0–2.9)), especially in the absence of acquired risk factors (OR (95% CI): 2.8 (2.2–3.6)). Among participants without acquired factors but with a positive family history, prothrombotic defects (factor V Leiden, prothrombin 20210A, protein C or protein S deficiency) were identified in 80 out of 236 (34%) patients compared to 22 out of 143 (15%) control subjects. After excluding participants with acquired or prothrombotic defects, family history persisted as a risk factor (OR (95% CI): 2.4 (1.7–3.3)). In conclusion, a substantial fraction of thrombotic events is unexplained. Family history remains an important predictor of VT.

233 ALCOHOL CONSUMPTION IS INVERSELY ASSOCIATED WITH HIGH DENSITY LIPOPROTEIN CHOLESTEROL (HDL) IN CORONARY PATIENTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Alcohol may have a beneficial effect on coronary heart disease (CHD) through elevation of high-density lipoprotein cholesterol (HDL) or other alterations in blood lipids. Data on alcohol consumption and blood lipids in coronary patients are scarce. *Objectives:* To assess whether alcohol consumption and intake of specific types of beverages are associated with blood lipids in older subjects with CHD. *Design and Methods:* Blood lipids (total cholesterol, HDL, LDL cholesterol, triglycerides) were measured in 1052 myocardial infarction patients aged 60–80 years (78% male), as part of the Alpha Omega Trial. Intake of alcoholic beverages, total ethanol and macro and micronutrients were assessed by food-frequency questionnaire. *Results:* Seventy percent of the subjects used lipid-lowering medication. Mean total cholesterol was 5.14 mmol/L and HDL was 1.28 mmol/L. In men but not in women, ethanol intake was positively associated with HDL (difference of 0.095 mmol/L for = 15 g/d vs. 0 g/d, p = 0.022) after adjustment for diet, lifestyle, and CHD risk factors. Also, liquor consumption was weakly positively associated with HDL in men (p = 0.042). *Conclusion and Discussion:* Moderate alcohol consumption may elevate HDL in (treated) myocardial infarction patients. This is probably due to ethanol and not to other beneficial substances in alcoholic beverages.

234 VALIDITY OF SILICOSIS EARLY DETECTION AND ITS INFLUENCE ON RISK ESTIMATION IN EPIDEMIOLOGY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Objective: Early detection and diagnosis of silicosis among dust exposed workers is based mainly on the presence of rounded opacities on radiographs. It is thus important to examine how reliable the radiographic findings are in comparison to pathological findings. *Methods:* A systematic literature search via Medline was conducted. Validity of silicosis detection and its influence on risk estimation in epidemiology was evaluated in a sensitivity analysis. *Results:* 4 studies on comparison between radiographic and pathological findings of silicosis were identified. The sensitivity of radiographic diagnosis of silicosis (ILO 1/1) varied between 39% and 71%, and specificity between 60% and 99%. Under the realistic assumption of silicosis prevalence between 2% and 8% in dust exposed workers, 23% to 56% of silicosis identified may be falsely diagnosed. The sensitivity analysis indicates that invalid diagnostics alone may lead to the finding of an increased risk of lung cancer among patients with silicosis. It may also lead to findings of 1% to 4% of radiographic silicosis even when there is no case of silicosis. However, the risk of silicosis could also be underestimated if the prevalence of silicosis exceeds 10%. *Conclusion:* Epidemiological studies based on patients with silicosis should be interpreted with caution.

236 SPATIAL DIFFUSION PATTERNS OF THE FIRST DENGUE EPIDEMIC IN SALVADOR, BAHIA, BRAZIL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Introduction: Epidemics of dengue occurring in various countries have stimulated investigators to seek innovative ways of improving current knowledge on the issue. *Objective:* To identify the characteristics of spatial-temporal diffusion of the first dengue epidemic in a major Brazilian city (Salvador, Bahia). *Methods:* Notified cases of dengue in Salvador in 1995 were georeferenced according to census sector (CS) and by epidemiological week. Kernel density estimation was used to identify the spatial diffusion pattern. *Results:* Of the 2006 CS in the city, cases of dengue were registered in 1400 (70%). Spatial distribution showed that in 1995 practically the entire city had been affected by the virus, with a greater concentration of cases in the western region, comprising CS of high population density and predominantly horizontal dwellings. *Conclusion and Discussion:* The pattern found showed characteristics of a contagious diffusion process. It was possible to identify the epicenter of the epidemic from which propagation initiated. The speed of progression suggested that even if a rapid intervention was initiated to reduce the vector population, it would probably have little effect in reducing the incidence of the disease. This finding confirms the need for new studies to develop novel technology for prevention of this disease.

242 PREVALENCE OF OPIATE AND COCAINE USE IN LIGURIA REGION (ITALY) USING CAPTURE-RECAPTURE METHOD

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Knowing the size of drug user hidden populations in a community is important to plan and evaluate public health interventions. *Objectives:* The aim of this study was to estimate the prevalence of opiate and cocaine users in Liguria Region by using the covariate capture-recapture method applied to four data sources. *Methods:* We performed a cross-sectional study in the resident population aged 15–54 years (780.995 people at 2001 census). During 2002 individual cases identified as opiate or cocaine primary users were flagged by four sources (drug dependence services, social service at prefectures, therapeutic communities, hospital discharges). Poisson regression models were fitted, adjusting for dependence among sources and for heterogeneity in catchability among categories of the two examined covariates: age (15–29 and 30–54 years) and gender. *Results:* The prevalence of opiate or cocaine users was 2.0% (95% C.I., 1.5 – 2.8%) and 2.1% (95% C.I. = 0.6 – 8.5%) respectively. *Conclusions:* The estimated prevalence of opiate and cocaine users is consistent with that found in inner London: 1.6% and 1.9% respectively (Hickman M., 2004; Hope V.D., 2005). The covariate capture-recapture method applied to four data sources allowed identifying a large cocaine-using population and resulted appropriate to determine drug user hidden populations.

243 IS THE YIELD OF DIABETES SCREENING INFLUENCED BY GP AND PRACTICE CHARACTERISTICS? THE ADDITION-NETHERLANDS STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: In 2002–2004 we performed a population based diabetes screening programme. *Objectives:* To investigate whether the yield of screening is influenced by GP and practice characteristics. *Methods:* A questionnaire containing items on the GP (age, gender, employment, specialty in diabetes, applying insulin therapy) and the practice (setting, location, number of patients from ethnic minority groups, specific diabetes clinic, involvement of practice assistant and practice nurse in diabetes care, cooperation with a diabetes nurse) was sent to 106 general practitioners (GPs) in 79 practices in the southwestern region of the Netherlands. Multiple linear regression analysis was performed. Outcome measure was the ratio screen detected diabetic patients/known diabetic patients per practice (SDM/KDM). *Results:* SDM/KDM was independently associated with higher age of the GP (regression coefficient 0.20; 95% confidence interval 0.07 to 0.34), urban location (–4.60; –6.41 to –2.78) and involvement of the practice assistant in diabetes care (2.27; 0.49 to 4.06). *Conclusion:* A lower yield of screening, assumably reflecting a lower prevalence of undiagnosed diabetes, was found in practices of younger GPs and in urban practices. A lower yield was not associated with an appropriate practice organization nor with a specialty of the GP in diabetes.

244 TIME TRENDS OF CHILDHOOD CANCER INCIDENCE IN GERMANY AND TOTAL EUROPE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Since few years increased incidence rates for childhood cancer were reported from industrialized countries. These findings were discussed controversial, because increases could be caused by changing of potential risk factors. **Objectives:** The question is: Are observed increasing rates due to actual changes in incidence rates or mainly caused by changes in registration practice or artefacts? **Methods:** For Europe, data from the ACCIS project (pooled data from 32 European population-based cancer registries, performed at IARC, Lyon; responsible: E. Steliarova-Foucher) (1978–1997), and for Germany, data of the German Childhood Cancer Registry available from 1980 onwards were used. **Results:** ACCIS data (based on 75,000 cases) show significantly increased data with an overall average annual percentage change of about 1 % and it is seen for mainly all diagnostic subgroups. For Germany, increases are seen for neuroblastoma (due to screening programmes) and brain tumours (due to improved registration). For acute leukaemia the observed increase is explained by changes in classification. **Conclusion and Discussion:** The increased incidence for Europe can only partly be explained by registration artefacts or improved diagnostic methods. The observed patterns suggest that an actual change exists. In Germany, from 1980 till now the observed increased rates could be explained by artefacts.

248 SOCIAL CLASS CONTRIBUTES MORE THAN EDUCATION OR INCOME TO SOCIOECONOMIC DIFFERENCES IN FEMALE SUICIDE MORTALITY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Suicide is the fourth most common cause of death among working age Finns. Among men socioeconomic status is strongly and inversely associated with suicide mortality, but little is known about socioeconomic differences in female suicide. We studied the direct and indirect effects of different socioeconomic indicators – education, occupation-based social class and income – on suicide among Finnish women aged 25–64. Also the effect of main economic activity was studied. We used individual level data from the 1990 census linked to the death register for the years 1991–2001. Altogether over 14 million person-years were included and 2137 suicides were committed. Age-adjusted RII conducted using Poisson-regression model was 1.72 (95% CI 1.47–2.03) for education, 1.97 (1.68–2.30) for social class and 2.13 (1.82–2.49) for income. However, almost all of the effect of education was mediated by social class. Fifteen per cent of social class was explained by education and 40 per cent was mediated by income. The effect of income on suicide was mainly explained by economic activity. In conclusion, net of other indicators occupation-based social class is a strong determinant of socioeconomic differences in female suicide mortality, and actions aimed at preventing female suicide should target this group.

250 NOVEL EXPLANATION FOR THE ASSOCIATION BETWEEN C-REACTIVE PROTEIN PLASMA LEVELS AND RISK FOR CARDIOVASCULAR EVENTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

C-reactive protein levels (CRP) in the range between 1 and 5 mg/L independently predict the risk of future cardiovascular events. Besides being a marker of atherosclerotic processes, high-normal CRP levels may also be a sign of a more pronounced response to everyday inflammatory stimuli. The aim of our study is to assess the association between response to everyday stimuli and the risk of myocardial infarction. We will perform a population based case-control study including a total of 600 persons. Cases (n = 100) are first myocardial infarction (MI) patients. Controls (n = 100) are partners of the patients. Offspring of the MI patients (n = 200) are included because disease activity and the use of medication by the MI patients may influence the inflammatory response. In order to assess the inflammatory response in MI patients the mean genetically determined inflammatory response in the offspring will be assessed and used as a measure for the inflammatory response in the MI patients. The offspring is free of disease and medication use. Partners of the offspring (n = 200) are the controls for the offspring. Influvac vaccine will be given to assess CRP concentration, i.e. inflammatory response, before and after the vaccination.

251 DOES THE DECREASE IN RESPIRATORY SYMPTOMS IN DUTCH CHILDREN CONTINUE: THE RESULTS OF A RESPIRATORY COMPLAINTS MONITOR

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

After an increase in the past decade, a survey in the year 2001 showed a slight decrease in the prevalence of respiratory symptoms in children living in the south-east of the Netherlands. The prevalence of recent wheeze decreased between 1989 and 2001 from 13.4% to 9.1%. Also, the prevalence of shortness of breath with wheeze decreased between 1997 and 2001 from 7.9% to 5.5%. To investigate whether this decrease is continuing, a 5th consecutive survey is undertaken. The 2005/6 survey will be conducted in the same way as the surveys in 1989, 1993, 1997 and 2001. Parents of all 5–6 year old children, 10–11 year old children and 14 year old children (all three groups consist of approximately 1800 children) eligible for a routine physical examination in 2005/2006 will be asked to complete a questionnaire (ISAAC) on the child's respiratory health. To investigate factors that influence the prevalence of respiratory symptoms several topics such as treatment, indoor and outdoor environment were added to the questionnaire. In spring of 2006 the first results of this study are expected.

252 THE EFFECT OF OCCUPATIONAL ELECTROMAGNETIC FIELDS EXPOSURE ON MYOCARDIAL INFARCTION RISK

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Ischemic heart disease risk may be influenced by long-term exposure to electromagnetic fields (EMF) in vulnerable subjects, but epidemiological data is inconsistent. **Objectives:** We studied whether the long-term occupational exposure to EMF is related to an increased myocardial infarction (MI) risk. **Design and Methods:** We conducted a prospective case-control study, which involved 1042 MI cases and 2341 controls. EMF exposure in 48 cases and 63 controls was assessed subjectively. The effect of EMF exposure on MI risk was estimated using multivariate logistic regression. **Results:** After adjustment for age, smoking, blood pressure, body mass index and psychological stress the odds ratios for EMF exposure < 10 years was 2.74; 95 % CI 0.62–12.07, for EMF exposure 10–20 years - 2.08; 95 % CI 0.91–4.76 and for EMF exposure > 20 years - 2.05; 95 % CI 1.24–3.39. **Conclusion:** Long-term occupational exposure to EMF may increase the risk of MI. Our crude estimates of EMF exposure might have impact on excess risk because of nondifferential misclassification in assigning exposure.

253 THE ASSOCIATION BETWEEN NOISE EXPOSURE AND MYOCARDIAL INFARCTION RISK

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: It has been suggested that noise exposure is associated with ischemic heart disease risk, but epidemiological evidence is still limited. **Objectives:** We studied whether road traffic noise exposure increases the risk of myocardial infarction (MI). **Design and Methods:** We conducted population-based prospective case-control study, which involved 1042 MI cases and 2341 controls. We measured traffic-related noise levels at the 117 electoral districts and linked these levels to residential addresses. We used multiple logistic regression to assess effect of noise exposure on MI risk. **Results:** After adjustment for age, smoking, blood pressure, body mass index, and psychological stress the risk of MI was higher for the men exposed to 70–75 dBA (OR 1.17; 95 % CI 0.99–1.39) and to > 75 dBA (OR 1.30; 95 % CI 0.88–1.92). OR for continuous exposure parameter was 1.16; 95 % CI 1.00–1.39. **Conclusion:** Our results indicate a relationship between traffic noise exposure and MI risk. However these findings may be attributable also to other environmental risk factors.

254 IS DEPRESSION FOLLOWING ACUTE MYOCARDIAL INFARCTION INDEPENDENTLY PROGNOSTIC?

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Some studies have suggested that patients, depressed following acute myocardial infarction (MI), experience poorer survival. However, i) other studies show no significant association, when adjusted for recognized prognostic indicators and ii) some

'natural' responses to MI may be recorded in questionnaires as indicators of depression. **Method:** Depression was assessed in MI patients, by interview on two measures (GWB and SF36) 1–2 weeks after discharge, clinical data were abstracted from patients' medical records and vital status was assessed at 2–4 years. Survivals of depressed, marginally depressed and normal patients were calculated by Kaplan Meier method and comparisons made by log rank and Cox proportional hazard modelling. **Results:** Crude survival at 3 years in 2137 patients was higher for depressed and marginally depressed (13%) than for normals (10%), although not significantly. In multivariate analysis, four patient characteristics contributed significantly to survival: age ($p < 0.001$), previous MI (< 0.001), diabetes (< 0.001) and sex (< 0.05); other potential explanatory variables, including hypertension, infarct severity and depression were excluded by the model. **Conclusion:** These findings, taken together with previous analysis of 2318 patients (Heart 2000), show depression, on four different scales (in the two studies) not to be prognostic, after adjustment for other clinical factors.

260 NORTH-TO-SOUTH GRADIENT IN LIPID PEROXIDATION IN EUROPE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The low coronary heart disease (CHD) incidence in southern Europe could result in lower low density lipoprotein cholesterol oxidation (oxLDL). **Objective:** The aim of this study was to compare oxLDL levels in CHD patients from several European countries. **Methods:** A cross-sectional multicenter study included 796 stable CHD male subjects aged 25 to 74 years from Northern (Finland and Sweden), Central (Germany), and Southern Europe (Greece and Spain). Lipid peroxidation was determined by plasma oxLDL. **Results:** The score of adherence to Mediterranean diet, antioxidant intake, alcohol intake, and lipid profile were significantly associated with oxLDL. OxLDL levels were higher in Northern (60.9 U/L) than in Centre (54.4 U/L) and Southern populations (53.8 U/L), $p = 0.01$, in the adjusted models. The probability of Northern Europe to have the highest oxLDL levels was 95.5%, and 98.9, % in logarithm of triglyceride-adjusted and fully adjusted models, respectively. The probability of this order to hold after adjustment for country was 78.4%. **Conclusion:** A gradient on lipoperoxidation from north to central and southern Europe is very likely to exist, and parallels that observed in the CHD mortality, and incidence rates. Southern populations may have more favourable environmental factors against oxidation than northern Europe.

261 SOCIOECONOMIC STATUS AND RISK OF CONGENITAL ANOMALIES

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Whereas socioeconomic status (SES) has been established as a risk factor for a range of adverse health outcomes, little literature exists examining socio-economic inequalities in the prevalence of congenital anomalies. **Objectives:** To investigate the

relationship between the SES and the risk of specific congenital anomalies, such as neural tube defects (NTD), oral clefts (OC) and Down's syndrome (DS). *Design and Methods:* A total of 485 cases of congenital anomaly and 970 non-malformed control births were collected between 2002 and 2003 from the Italian archive of the certificates of delivery care. As a measure of SES, cases and controls were given a value for a 4 level deprivation index. Data were analysed using a logistic regression model. *Results:* We found 31 cases of DTN, 287 cases of SOF and 167 cases of DS. The risk of having a baby with NTD was significantly higher for women of low SES (OR = 2.7; C.I.: 1.1–7.3), as well as for OC (OR = 1.7; C.I.: 1.3–2.3). No significant evidence for SES variation was found for DS. *Conclusion and Discussion:* Our data suggest risk factors linked to SES, such as nutritional factors, lifestyle, and access to health services, may play a role in the occurrence of some malformations.

262 A CLUSTER RANDOMISED CONTROLLED TRIAL OF A CONTINUING EDUCATION PROGRAMME -SMOKING CESSATION INTERVENTION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: General practitioners (GP) are well-regarded by their patients and have the opportunity to play an active role in providing cessation advice. *Objectives:* This study was run to examine whether a public health programme based on a carefully adapted programme of continuing education can increase GPs' use of cessation advice and increase the success rates of such advice. *Methods:* The particular context due to a randomization of GP leads us to consider a cluster randomization trial. Marginal models, estimated by GEE and mixed generalized linear models are used for this type of design. *Results:* The cessation rate is relatively high for all smokers enrolled in the trial (n = 1075): a total of 313 smokers were ex-smokers at one year (29.1%). Patients who were seen by trained GPs were more likely to successfully stop smoking than those seen by the control GPs (31.3% vs 24.4%). Motivated subjects, aged over 40, lower HAD anxiety scores, and confidence in their ability to stop smoking, were predictive of successful cessation at one year follow-up. *Conclusions:* Cluster analysis indicated that factors important to successful cessation in this population of smokers are factors commonly found to influence cessation.

264 EQUAL EFFECTS OF OFF-PUMP AND ON-PUMP CORONARY ARTERY BYPASS SURGERY (WORK IN PROGRESS)

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: and purpose Conventional meta-analysis showed no difference in primary outcome for coronary bypass surgery without (offpump) or with (onpump) the heart-lung machine. Secondary outcome parameters such as transfusion requirements or hospitalization days favored offpump surgery. Combined individual data analysis improves precision of effect estimates and allows accurate subgroup analyses. *Objective:* Our objective is to obtain accurate

effect estimates for stroke, myocardial infarction, or death, after offpump versus onpump surgery, by meta-analysis on pooled individual patient data. *Method and Results:* Bibliographic database search identified eleven large trials (> 100 patients). The obtained data for 9 trials data included 1933 patients. Primary endpoint was composite (n = 117), secondary endpoints were death (n = 34), stroke (n = 24) and myocardial infarction (n = 75). Hazard ratio for event-free survival after offpump vs onpump (95% CI) was: composite endpoint 0.94(0.66;1.36), death 1.12(0.57;2.20) myocardial infarction 1.07(0.68;1.69), stroke 0.84(0.38;1.88). After stratification for diabetes, gender and age the results slightly favored offpump for high-risk groups. Hazard ratios remained not statistically significant. *Conclusion:* No clinical or statistical significant differences were found for any endpoint or subgroup. Offpump coronary bypass surgery is at least equal to conventional coronary bypass surgery. Offpump surgery therefore is a justifiable option for cardiac surgeons for cardiac bypass surgery.

266 PRE-SCHOOL PERTUSSIS BOOSTER-VACCINATION REDUCES TRANSMISSION FROM TARGETED AGE-GROUP TO UNVACCINATED INFANTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

In 1996–1997 an outbreak of pertussis occurred, mostly among vaccinated children. Since then the incidence has remained high. Therefore, a fifth dose with acellular booster vaccine for 4-year-olds was introduced in October 2001. The impact of this vaccination on the age-specific pertussis incidence was assessed. Mandatory notifications and hospitalisations were analysed for 2002–2004 and compared with previous years. Surveillance data show 'epidemic' increases of pertussis in 1996, 1999, 2001 and 2004. The total incidence/100,000 in 2004 (59.8) was higher than in the previous epidemic year 2001 (50.0). Nevertheless, the incidence of notifications and hospitalisations in the age-groups targeted for the booster-vaccination had decreased with respectively 72% and 86% compared to 2001. In contrast, the incidence in adolescents and adults almost doubled. Unlike other countries that introduced a pre-school booster, the incidence of hospitalised infants <6 months also decreased (31% compared with 2001). As expected, the booster-vaccination for 4-year-olds has decreased the incidence among the target-population itself. More importantly, the decreased incidence among infants <6 months suggests that transmission from siblings to infants has also decreased. In further exploration of the impact of additional vaccination strategies (such as boosting of adolescents and/or adults) this effect should not be ignored.

268 A CASE-CONTROL STUDY ON ACUTE RESPIRATORY TRACT INFECTIONS IN GENERAL PRACTITIONER PATIENTS IN THE NETHERLANDS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Acute respiratory infections (ARI) are responsible for considerable morbidity in the community, but little is known about the presence of respiratory pathogens in asymptomatic individuals. We

hypothesized that asymptomatic persons could have a sub clinical infection and so act as a source of transmission. Between 2000 and 2003 all patients with ARI who visited their sentinel general practitioner were reported to estimate the incidence of ARI in Dutch general practices. A random selection of them (cases) and an equal number of asymptomatic persons visiting for other complaints (controls) were included in a case-control study. Nose/throat swabs of participants were tested for a broad range of pathogens. The overall incidence of ARI was 545 per 10,000 person years, suggesting that in the Dutch population an estimated 900,000 persons annually consult their general practitioner for respiratory complaints. Viruses were detected in 58% of the cases, β -haemolytic streptococci group A in 11% and mixed infections in 3%. Besides, pathogens were detected in approximately 30% of controls, particularly in the youngest age groups. This study confirms that most ARI are viral and supports the reserved policy of prescribing antibiotics. Furthermore, we demonstrated that asymptomatic persons might be a neglected source of transmission.

270 DIAGNOSTIC MODEL FOR EARLY DETECTION OF SENSITIZATION TO WHEAT AND AMYLASE ALLERGENS AMONG BAKERS IN THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The baking and flour producing industries in the Netherlands agreed on developing a health surveillance system to reduce the burden of and improve prognosis of occupational allergic diseases. **Objectives:** To develop and validate a diagnostic model for sensitization to wheat and fungal amylase allergens, as triage instrument to detect occupational allergic diseases. **Design and Methods:** A diagnostic regression model was developed in 391 bakers from a cross-sectional study with IgE serology to wheat and or amylase allergens as the reference standard. Model calibration was assessed with Hoshmer-Lemeshow goodness of fit test; discriminative ability using area under receiver operating characteristic curve (AUC); and internal validity using bootstrapping procedure. External validation was conducted in 200 other bakers. **Results:** The diagnostic model consisted of four questionnaire items (history of asthma, rhinitis, conjunctivitis, and work-related allergic symptom) showed good calibration ($p = 0.7$) and discriminative ability (AUC 0.73; 95% CI 0.67 to 0.79). Internal validity was reasonable (correction factor of 0.85 and optimism corrected AUC of 0.70). External validation showed good calibration ($p = 0.9$) and discriminative ability (AUC 0.73; 95% CI 0.63 to 0.83). **Conclusions and discussion:** This easily applicable diagnostic model for sensitization to flour and enzymes shows reasonable diagnostic accuracy and external validation.

271 HEALTH SURVEILLANCE AMONG BAKERS IN THE NETHERLANDS: EARLY DETECTION OF OCCUPATIONAL ALLERGIC DISEASES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: In the Netherlands the baking and flour producing industries (3,000 small bakeries, 80 industrial bakeries, and 50 flour manufactures) agreed to reduce the high rate (up to 30%) of occupational related allergic diseases. **Objectives:** To conduct health surveillance for early detection of occupational allergic

diseases by implementing a diagnostic model as triage instrument. **Design and Methods:** In the preparation phase, a validated diagnostic regression model for sensitization to wheat and or a-amylase allergens was converted into score chart for use in occupational health practice. Two cut off points of the sum scores were selected based on diagnostic accuracy properties. In the first phase, a questionnaire including the diagnostic predictors from the model was applied in 10,000 bakers. Surveillance simulation was done in 4194 bakers recently enrolled in the surveillance. Workers with high questionnaire scores were referred for advanced medical examination. **Results:** Implementing the diagnostic questionnaire model yielded 59%, 23%, and 18% bakers in the low, intermediate, and high score groups. Workers with high scores showed the highest percentage of occupational allergic diseases. **Conclusions and discussion:** With proper cut off points for referral, the diagnostic model could serve as triage instrument in health surveillance to early detect occupational allergic diseases.

273 THE PREDOMINANT INFLUENCE OF HDL CHOLESTEROL ON THE INCIDENCE OF CORONARY EVENTS IN SPAIN

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The prevalence of cardiovascular risk factors in Spain is high but myocardial infarction incidence is lower than in other countries. **Objective:** To determine the role of basic lipid profile on coronary heart disease (CHD) incidence in Spain. **Methods:** A cohort of 5,732 healthy Spanish individuals aged 35 to 74 years was followed for 5 years. The end-points were fatal and non-fatal myocardial infarction, and angina. **Results:** The 180 participants who developed a coronary end-point were significantly older (62 vs 56), more often diabetic (30% vs 16%), smoker (39% vs 24%) and hypertensive (65% vs 44%) than the rest, and their average total and HDL-cholesterols (mg/dl) were: 233 vs 232 (NS) and 47 vs 54, ($p < 0.001$), respectively. CHD incidence among individuals with low HDL levels (< 40 in men/ < 46 in women) was higher than in the rest: 11.7‰/year-1 vs 7.3‰/year-1 ($p < 0.05$) in men, and 8.8‰/year-1 vs 3.2‰/year-1 ($p < 0.001$) in women. HDL-cholesterol was the only lipid related variable significantly associated with CHD: hazard ratio for 1 mg/dl increase was 0.98 (95% CI:0.96–0.99) in men, and 0.96 (95% CI:0.93–0.98) in women, after adjusting for classical risk factors. **Conclusion:** HDL-cholesterol is the only classical lipid variable associated with CHD incidence in Spain.

275 INFANT MORTALITY DURING RECENT ECONOMIC CRISIS PERIODS IN BRAZIL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: It is widely recognized that health service interventions may reduce infant mortality/IMR rate which usually occurs alongside with economic growth. However, there are reports showing that IMR decrease under adverse economic and social conditions, indicating the presence of other unknown determinants. **Objective:** This study aims to analyze temporal tendency of infant mortality in Brazil during a recent period (1980 to 1998) of economic crisis. **Methods:** Temporal series study using data from the Mortality Information System, censuses (IBGE) and epidemiological information (FUNASA). Applying ARIMA – Autoregressive

Integrated Moving Average, it was described series parameters and, Spearman correlation coefficients were used to evaluate the association between infant mortality coefficient and some determinants. *Results:* The infant mortality showed a declining tendency (-59.3%) and strong correlation to the majority of the indicators analyzed. However, only correlation between infant mortality coefficient and total fecundity and birth rates differed significantly within decades. *Conclusions/Discussion:* Fecundity variation was responsible to the persistence of mortality decline during the eighties. In the next period those indicators of life conditions, mostly health care, could be more important.

277 BENCHMARKING NATIONAL SURVEILLANCE SYSTEMS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Across European Union (EU) member states, considerable variation exists in the structure and performance of surveillance systems for communicable disease prevention and control. *Objectives:* The study aims to support the improvement of surveillance systems of communicable diseases in Europe while using benchmarking for the comparison of national surveillance systems. *Design and Methods:* Surveillance systems from England & Wales, Finland, France, Germany, Hungary and the Netherlands were described and analysed. Benchmarking processes were performed with selected criteria (e.g. case definitions, early warning systems). After the description of benchmarks, best practices were identified and described. *Results:* The six countries have in general well-functioning communicable disease control and prevention systems. Nevertheless, different strengths and weaknesses in could be identified. Practical examples for best practice from various surveillance systems demonstrated fields for improvement. *Conclusion and Discussion:* Benchmarking national surveillance systems is applicable as a new tool for the comparison of communicable disease control in Europe. A gold standard of surveillance systems in various countries is very difficult to achieve because of heterogeneity (e.g. in disease burden, personal and financial resources). However, to improve the quality of surveillance systems across Europe, it will be useful to benchmark surveillance systems of all EU member states.

279 OSTEOARTHRITIS PATIENTS TRADE SUBSTANTIAL RISKS OF SIDE EFFECTS FOR PAIN RELIEF

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Therapeutic decisions in osteoarthritis (OA) often involve trade-offs between accepting risks of side effects and gaining pain relief. Data about the risk levels patients are willing to accept are limited. *Objectives:* To determine patients' maximum acceptable risk levels (MARLs) for different adverse effects from typical OA medications and to identify the predictors of these risk attitudes. *Design and Methods:* MARLs were measured with a probabilistic threshold technique for different levels of pain relief. Baseline pain and risk levels were controlled for in a 2x2 factorial design. Clinical and sociodemographic characteristics were assessed using a self-administered questionnaire. *Results:* For 196 subjects, MARLs

distributions were skewed, and varied by level of pain relief, type of adverse effect, and baseline risk level. Given a 0% baseline risk, for a 2-point (0-10 scale) pain benefit the mean (median) MARLs were 3.0% (0%) for heart attack/stroke; 5.7% (0%) for stomach bleed; 13.4% (4.5%) for hypertension; and 23.4% (10.5%) for dyspepsia. Most clinical and sociodemographic factors were not associated with MARLs. *Conclusion:* Subjects were willing to trade substantial risks of side effects for pain benefits. This study provides new data on risk acceptability in OA patients that could be incorporated into practice guidelines for physicians.

280 MARKERS OF PLATELET AGGREGATION PREDICT INCREASED ACUTE ISCHAEMIC HEART DISEASE RISK

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Several independent studies have shown that single genetic determinants of platelet aggregation are associated with increased IHD risk. *Objectives:* To study the effects of clustering prothrombotic (genetic) determinants on the prediction of IHD risk. *Design and Methods:* The study is based on a cohort of 17,357 women, aged 49 to 70 years, who were followed from 1993 to 1999. During this period, there were 200 women with registered IHD (ICD-9 410-414). A nested case cohort analysis was performed to study the relation of plasma levels vWF and fibrinogen, blood group genotype and prothrombotic mutations in the gene of a2b1, GPVI, GPIb and aIIbb3 to IHD. *Results:* Blood group AB, high vWF concentrations and high fibrinogen concentrations were associated with increased incidence of acute IHD. When the effects of blood group AB/O genotype, plasma levels fibrinogen and vWF were clustered with a score, there was a convincing relationship between a high prothrombotic score and increased incidence of acute IHD: the full-adjusted HR (95% confidence interval) was 3.2 (1.4-6.7) for women with the highest score when the lowest score was taken as reference. *Conclusions:* Clustering of prothrombotic markers is a major determinant of increased incidence of acute IHD.

282 ASSOCIATION BETWEEN HEART RATE VARIABILITY AND AMBULATORY BLOOD PRESSURE. THE PROOF STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Studies have revealed heart rate variability (HRV) as a predictor of hypertension; however its 24h-recording has not been analysed with the 24-hour ambulatory blood pressure. *Objective:* We studied the relationship between HRV and blood pressure. *Methods:* HRV and blood pressure were measured by 24-hour ambulatory recordings, in randomly selected population without evidence of heart disease. Cross-sectional analyses were conducted in 571 women and 372 men (mean age: 65.64 ± 0.79). HRV values, measured by the standard deviation of RR intervals (SDNN), were compared after logarithmic transformation between the blood pressure levels (135/85 mmHg), using analysis of variance. Stepwise multiple-regression was performed to assess on SDNN the cumulative effects of systolic and diastolic blood pressure, clinical obesity, fasting glycaemia, C-reactive protein, treatments, smoking and alcohol consumption. *Results:* SDNN was lower in hypertensive

men and women ($p < 0.05$), independently of drug treatments. After adjustment for factors associated with hypertension, SDNN was no more associated with hypertension, but with obesity, glycaemia and C-reactive protein in both genders. SDNN was negatively associated with diastolic blood pressure in men ($p = 0.03$) in the multivariate approach. *Conclusion:* Whereas blood pressure levels were not related to the SDNN in the multivariate analysis, diastolic blood pressure contributed to SDNN in men.

283 BREAST MILK FATTY ACID COMPOSITION INFLUENCES ALLERGIC DISEASE IN PRE-SCHOOL CHILDREN: THE PIAMA BIRTH COHORT STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

It has been proposed that n-3 fatty acids may protect against the development of allergic disease, while n-6 fatty acids may promote its development. In the PIAMA (Prevention and Incidence of Asthma and Mite Allergy) study we investigated associations between breast milk fatty acid composition of 158 allergic and 107 non allergic mothers and allergic disease (doctor diagnosed asthma, eczema or hay fever) in their children at the age of 1 year and at the age of 4 years. In children of allergic mothers prevalences of allergic disease at age 1 and at age 4 were relatively high if the breast milk they consumed had a low content (wt%) of n-3 fatty acids and particularly of n-3 long chain polyunsaturates (lcps), a low content of trans fatty acids, or a low ratio of n-3lcps/n-6lcps. The strongest predictor of allergic disease was a low breast milk n-3lcps/n-6lcps ratio (odds ratios (95% CI) of lowest vs highest tertile, adjusted for maternal age, parity and education: 2.80 (1.07 to 7.28) for allergic disease at age 1 and 2.86 (1.09 to 7.52) for allergic disease at age 4). In children of non allergic mothers no statistically significant associations were observed.

284 VISION RELATED QUALITY OF LIFE IN A DUTCH ELDERLY POPULATION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background/Relevance: To find out about the appropriateness of using two vision related quality of life instruments to measure outcome of visually impaired elderly in a mono- and multidisciplinary rehabilitation centre. *Objective/Design:* To evaluate sensitivity of the Vision quality of life Core Measure (VCM1) and the Low Vision Quality Of Life questionnaire (LVQOL) to measure changes in vision related quality of life in a non-randomised follow-up study. *Methods:* Visually impaired patients (N = 319) recruited from 4 Ophthalmology departments administered questionnaires at baseline (2000–2003), 3 months and 1 year after rehabilitation. Person measures were analysed using Rasch analyses for polytomous rating scales. *Results:* Paired sample t-tests for the VCM1 showed improvement at 3 months ($p = 0.02$; Effect size = 0.12 and $p = 0.003$; Effect size = 0.15) for the monodisciplinary and the multidisciplinary groups respectively. At 1 year only the multidisciplinary group showed improvement on the VCM1 ($p = 0.03$; Effect size = 0.12). On the LVQOL, no significant improvement or deterioration was found for both groups. *Discussion:* Although,

VCM1 showed improvement in vision related quality of life over time, the effect sizes appeared to be quite small. We conclude that both instruments lack sensitivity to measure changes. Another explanation is that rehabilitation did not contribute to quality of life improvements.

287 PSYCHOPHARMACOLOGICAL THERAPY IN THE MIDDLE OF THE NETHERLANDS: AN ANALYSES OF PRESCRIPTIONS BETWEEN 2001–2003

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The number of prescriptions of benzodiazepines, antidepressants and psychostimulants increases annually. In a descriptive study we analysed the determinants for a rising trend in use of psychopharmacological medication. *Objectives:* (1) To examine the changes in the prescriptions of benzodiazepines, antidepressants and psychostimulants between 2001 and 2003. (2) To examine the influence of gender, age, ethnicity, geographic region and socioeconomic status on the prescription of psychopharmacological therapy. *Design and Methods:* Data were extracted from the registration of approximately 1,000,000 members of the Health Insurance Company Agis. Determinants of psychopharmacological therapy were analysed using logistic regression. *Results:* The volume of psychopharmacological prescriptions increased considerably between 2001 and 2003. We found a significant increase for Tricyclic Antidepressants (8%), Selective Serotonin Reuptake Inhibitors (10%), and psychostimulants (38%) from 2001 to 2003. Elderly, handicapped and women had an increased risk on benzodiazepines and antidepressants use. The use of psychostimulants was highest in the age group of 5 – 14 years, especially boys. *Conclusion and Discussion:* Prescriptions of psychopharmacological medication are increased from 2001 to 2003. This could be caused by changes in the number of psychiatric patients or by prescription behaviour of the general practitioners.

288 PROGNOSTIC FACTORS OF ASTHMA SEVERITY: A 9-YEAR INTERNATIONAL PROSPECTIVE COHORT STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The natural history of asthma severity is poorly known. *Objective:* To investigate prognostic factors of asthma severity. *Methods:* All current asthmatics identified in 1991/93 in the European Community Respiratory Health Survey were followed up and their severity was assessed in 2002 by using the Global Initiative for Asthma categorization (n = 856). Asthma severity was related to baseline/follow-up potential determinants by a multinomial logistic model, using intermittent asthmatics as reference category for relative risk ratios (RRR). *Results:* Patients in the lowest/highest levels of severity at baseline had an 80% likelihood of remaining in a similar level. Severe persistent had a poorer FEV1% predicted at baseline, higher IgE levels (RRR = 2.06; 95% CI: 1.38–3.06), higher prevalence of chronic cough/phlegm (4.90; 2.18–11.02) than intermittent asthmatics. Moderate persistent showed similar associations. Mild persistent were similar to intermittent asthmatics, although the former showed a poorer control of symptoms than the latter. Subjects in remission had a lower probability of an increase in BMI than

current asthmatics (0.86;0.75–0.97). Allergic rhinitis, smoking, respiratory infections in childhood were not associated with severity. *Conclusion:* Asthma severity is a relatively stable condition, at least for patients at the two extremes of the severity spectrum. High IgE levels and persistent cough/phlegm are strong markers of moderate/severe asthma.

289 MUNICIPAL THYROID CANCER MORTALITY IN SPAIN

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Thyroid cancer (TC) has a low, yet growing, incidence in Spain. Ionizing radiation is the only well established risk factor. *Objectives:* This study sought to depict the municipal distribution of TC mortality in Spain and to argue about possible risk factors. *Design and Methods:* Posterior distribution of relative risk for TC was computed using a single bayesian spatial model covering all municipal areas of Spain (8,077). Maps were plotted depicting standardised mortality ratios, smoothed municipal relative risk (RR) using the Besag, York and Mollié model, and the distribution of the posterior probability that $RR > 1$. *Results:* From 1989 to 1998 a total of 2,538 TC deaths were registered in 1,041 municipalities. There was a higher risk of death in some areas of Canary Islands, Galicia and Asturias. *Conclusion:* The smoothed RR show a clear pattern of higher risk in the Northwest of Spain and in Canary Islands. *Discussion:* This pattern correspond to well defined endemic goitre regions. More aggressive undifferentiated carcinomas are more frequent there, which can be reflected in mortality figures. Other genetic and environmental factors could play an unknown role. Supported by: ISCIII and RCEP-FIS C03–09.

291 NO EFFECT OF LYCOPENE ON THE INSULIN-LIKE GROWTH FACTOR (IGF); A RANDOMIZED TRIAL IN WOMEN WITH HIGH BREAST CANCER RISK

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

IGF-I is an important growth factor associated with increased breast cancer risk in epidemiological and experimental studies. Lycopene intake has been associated with decreased cancer risk. Although some data indicate that lycopene can influence the IGF-system, this has never been extensively tested in humans. The purpose of this study is to evaluate the effects of a lycopene intervention on the circulating IGF-system in women with an increased risk of breast cancer. We conducted a randomized, placebo-controlled cross-over intervention study on the effects of lycopene supplementation (30 mg/day, 2 months) in pre-menopausal women with 1) history of breast cancer ($n = 29$) and 2) high familial breast cancer risk ($n = 47$). Drop-out rate was 21%. Mean IGF-I and IGFBP-3 concentrations after placebo were 175.8 ± 51.2 ng/ml and 2.54 ± 0.42 mg/ml respectively. Lycopene supplementation did not significantly alter serum total IGF-I (mean lycopene effect: -1.4 ng/ml; 95% CI: $-8.2-5.4$) and IGFBP-3 (-0.002 mg/ml; $-0.052-0.056$) concentrations. Dietary energy and macronutrient intake, physical activity, body weight, and serum lycopene concentrations were assessed, and are currently under

evaluation. In conclusion, this study shows that 2 months lycopene supplementation has no effect on serum IGF-system components in a high risk population for breast cancer.

292 PERCEPTION OF DIAGNOSTIC TESTS BY MELANOMA PATIENTS WITH LYMPH NODE METASTASES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Introduction: Patients who experience burden during diagnostic tests may disrupt these tests. The aim was to describe the perception of melanoma patients with lymph node metastases of the diagnostic tests. *Methods:* Patients were requested to complete a self-administrated questionnaire. Experienced levels of embarrassment, discomfort and anxiety were calculated, as well as (total) scores for each burden. The non-parametric Friedman test for related samples was used to see if there was a difference in burden. *Results:* The questionnaire was completed by 34 patients; response rate was 87%. Overall satisfaction was high. In total 26% felt embarrassment, 27% discomfort and 39% anxiety. Overall, 31% felt some kind of burden. There was no difference in anxiety between the three tests. However, patients experienced more embarrassment and discomfort during the PET (Positron Emission Tomography) scan ($p = 0.027$ and $p = 0.002$). *Conclusion:* Overall levels of burden were low. However, patients experienced more embarrassment and discomfort during the PET scan, possibly as a result of lying immobile for a long time. The accuracy, costs and patients upstaged will probably be the most important to determine the additional value of FDG-PET and CT, but it is reassuring to know that only few patients experience severe or extreme burden.

293 DIETARY FACTORS AND THE RISK OF GASTRIC CANCER IN LITHUANIA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Gastric cancer (GC) is the second most frequent cause of cancer death in Lithuania. Some intercultural aspects of diet that is related to the outcome could be the risk factors of the disease. The objective of the study was to assess an associations between risk of GC and dietary factors. A case-control study included 379 cases with diagnose of GC and 1137 controls that were cancer and gastric diseases free. A questionnaire used to collect information on possible risk factors. The odds ratios (OR) and 95% confidence intervals (CI) estimated by the conditional logistic regression model. After controlling for possible confounders that were associated with GC, use of salted meat (OR = 2.21; 95% CI = 1.43–3.42; >1–2 times/week vs. almost never) smoked meat (OR = 1.79; 95% CI = 1.23–2.60; >1–4 times/week vs. less), smoked fish (OR = 1.70; 95% CI = 1.13–2.53; >1–2 times/week vs. less) was associated with increased risk of GC. Higher risk of GC was associated with frequent use of butter, eggs and noodles. While frequent consumption of carrots, cabbages, broccolis, tomatoes, garlic, beans decreased the risk significantly. The data support a role of salt processed food and some animal foods in increasing the risk of GC and plant foods in reducing the risk of the disease.

294 NO CONSENSUS ON STANDARDS AND CRITERIA FOR ASSESSING MEASUREMENT PROPERTIES: RESULTS FROM A SYSTEMATIC REVIEW

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Standards for the evaluation of measurement properties of health status measurement instruments (HSMI), including explicit criteria for what constitutes good measurement properties, are lacking. Nevertheless, many systematic reviews have been performed to compare and select HSMI, using different criteria to judge the measurement properties. **Objectives:** (1) to determine which measurement properties are reported in systematic reviews of HSMI and how these properties are defined, (2) which standards are used to define how measurement properties should be assessed, and (3) which criteria are defined for good measurement properties. **Methods:** A systematic literature search was performed in PubMed, EMBASE and Psychlit. Articles were included if they met the following inclusion criteria: (1) systematic review, (2) HSMI were reviewed, and (3) the purpose of the review is to identify all measurement instruments assessing (an aspect of) health status and to report on the clinimetric properties of these HSMI. Two independent reviewers selected the articles. A standardised data-extraction form was used. **Preliminary Results:** 103 systematic reviews were included. **Conclusions:** Large variability in standards and criteria used for evaluating measurement properties was found. This review can serve as basis for reaching consensus on standards and criteria for evaluating measurement properties of HSMI.

295 A PREDICTIVE MODEL FOR THE RESIDENTIAL EXPOSURE TO NITROGEN DIOXIDE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Residential exposure to nitrogen dioxide is an air quality indicator and could be very useful to assess the effects of air pollution on respiratory diseases. The present study aims at developing a model to predict residential exposure to NO₂, combining data from questionnaires and from local monitoring stations (MS). In the Italian centres of Verona, Torino and Pavia, participating in ECRHS-II, NO₂ concentrations were measured using passive samplers (PS-NO₂) placed outside the kitchen of 340 subjects for 14 days. Simultaneously, average NO₂ concentrations were collected from all the MSs of the three centres (MS-NO₂). A multiple regression model was set up with PS-NO₂ concentrations as response variable and questionnaire information and MS-NO₂ concentrations as predictors. The model minimizing the root mean square error (RMSE), obtained from a ten fold cross validation, was selected. The model with the best predictive ability (RMSE = 12.20), had as predictors: MS-NO₂ concentrations, season of the survey, centre, type of building, self-reported intensity of heavy vehicle traffic. The correlation coefficient between predictive and observed values was 0.79 (95% CI: 0.75–0.83). In conclusion, this preliminary analysis suggests that the combination of

questionnaire information and routine data from the MSs could be useful to predict the residential exposure to NO₂.

297 QUANTIFICATION OF HEALTH EFFECTS OF BREASTFEEDING. LITERATURE REVIEW AND MODEL SIMULATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Currently only 18% of Dutch mothers comply with the WHO recommendation to give exclusive breastfeeding for at least six months. Therefore, the Dutch authorities consider policies on breastfeeding. **Objectives:** Quantification of the health effect of several breastfeeding policies. **Methods:** A systematic literature search of published epidemiological studies conducted in the general 'western' population. Based on this overview a model is developed. The model simulates incidences of 11 diseases of mother and child depending on the duration that mothers breastfeed. Each policy corresponds to a distribution in the duration of breastfeeding. The health effects of each policy are compared to the present situation. **Results:** Breastfeeding has beneficial health effects on both the short and the long term for mother and child. The longer the duration of breastfeeding, the larger is the effect. Most public health gain is achieved by introducing breastfeeding to all newborns rather than through a policy focusing just on extending the lactation period of women already breastfeeding. **Conclusion:** Breastfeeding has positive health effects. Policy should focus preferentially on encouraging all mothers to start with breastfeeding.

299 INTERNATIONAL SARS CONTROL: INVENTORY OF EUROPEAN HEALTH POLICIES TO CONTROL PANDEMIC INFECTIONS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Constant increase of international trade and travel activities has risen the significance of pandemic infectious diseases worldwide. The 2002/2003 SARS outbreak rapidly spread from China to 28 countries, from which 9 were located in Europe. In order to control and prevent pandemic infections in Europe, systematic and effective public health preparation by every member state is essential. **Method:** Supported by the European Commission, surveys focusing on national SARS (September 2003) and influenza (October 2005) preparedness were accomplished. A descriptive analysis was undertaken to identify differences in European infectious disease policies. **Results:** Guidelines and guidance for disease management were well established in most European countries. However, the application of control measures, like e.g. measures for mass gatherings or public information policies, had varied among member states. **Discussion:** The results show that European countries are aware of preparing for pandemic infections. Yet, the effectiveness of certain control measures is analysed insufficiently. Further research and detailed knowledge about factors influencing international spread of diseases is required. 'Hazard Analysis of Critical Control Points' (HACCP) will be applied to evaluate national health response in order to provide comprehensive data for recommendations to European pandemic preparedness.

300 GEOGRAPHICAL DIFFUSION OF EPIDEMIC INFLUENZA IN THE AUTONOMOUS REGION OF EXTREMADURA (SPAIN). 2004/05 SEASON

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Influenza is still an important problem for public health. Knowing its space-time evolution is of special interest in order to carry out prevention plans. *Objectives:* To analyze the geographical diffusion of the epidemic wave in Extremadura. *Methods:* The influenza incidence absolute rates in every town have been calculated, according to the registered cases per week in the compulsory disease declaration system. Continuous maps have been represented using a geographical interpolation method (Inverse Distance Weighting (IDW) was applied with weighting exponents of 2). *Results:* The 2004/05 season began in the 40th week of 2004, with a small influenza incidence. There have been concrete cases in those towns until the 46th week. Punctual areas diffusion in the north and southwest of the region between the 46th and the 51st weeks. The highest incidence appeared between the 52nd week of 2004 and the 3rd of 2005. Influenza cases started to decrease in the northwest and north of the region from the 3rd week of 2005, till the 10th week, when most of the cases were found in the southwest. *Conclusion:* There is a space-time diffusion of influenza, due to the higher population density. We propose to analyze these data combining temperature information.

301 ANTIBIOTIC MANAGEMENT OF ACUTE LOWER RESPIRATORY TRACT INFECTIONS AMONG DUTCH ELDERLY PATIENTS IN PRIMARY CARE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Acute lower respiratory tract infection (LRTI) can cause various complications leading to morbidity and mortality notably among elderly patients. Antibiotics are often given to prevent complications. To minimise costs and bacterial resistance, antibiotics are only recommended in case of pneumonia or in patients at serious risk for serious complications. *Objective:* We assessed the course of illness of LRTIs among Dutch elderly primary care patients and assessed whether GPs were inclined to prescribe antibiotics more readily to patients at risk for complications. *Methods:* We retrospectively analysed medical data from 3,166 episodes of LRTI among patients ≥ 65 years of age presenting in primary care to describe the course of illness. The relation between prescriptions of antibiotics and patients with risk factors for a complicated course was assessed by means of multivariate logistic regression. *Results:* In episodes of acute bronchitis antibiotics were more readily prescribed to patients aged 90 years or older. In exacerbations of COPD or asthma GPs favoured antibiotics in male patients and when diabetes, neurological disease or dementia was present. *Conclusion:* GP's do not take all high risk conditions into account when prescribing antibiotics to patients with LRTI despite recommendations of national guidelines.

303 ANTIDEPRESSANTS AND THE RISK OF SUICIDE, ATTEMPTED SUICIDE AND OVERALL MORTALITY IN A NATION-WIDE COHORT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The putative association between antidepressant treatment and increased suicidal behaviour has been under debate. *Objectives:* To estimate the risk of suicide, attempted suicide, and overall mortality during antidepressant treatments. *Design and Methods:* Study cohort consisted all subjects without non-affective psychosis, hospitalized due to a suicide attempt during the years 1997–2003 in Finland (N = 13,210), followed up by using nationwide registers. Main outcome were completed suicides, attempted suicides, and mortality. Main explanatory variable was antidepressant usage. *Results:* 470 suicides, 4411 suicide attempts and 1263 deaths were observed. When the effect of background variables was taken into account, the risk of suicide attempts was increased markedly during antidepressant treatment (RR for selective serotonin reuptake inhibitors or SSRI 1.34, 1.19–1.50) compared with no antidepressants. However, the risk of completed suicides was not increased. A lower mortality was observed during SSRI use (RR 0.67, 0.54–0.84), which was mainly attributable to decrease in cardiovascular deaths. *Conclusion and Discussion:* In this suicidal high risk cohort the use of any antidepressant is associated with an increased risk of suicide attempts, but not with the increased risk of completed suicide. Antidepressants and, especially, SSRI use is associated with a substantial decrease in cardiovascular deaths and overall mortality.

304 VARIATIONS IN PRIMARY CARE EXPLAIN RCT OUTCOMES; ETHNOGRAPHIC RESULTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The Quattro Study is a RCT on the effectiveness of intensified preventive care in primary health care centres in deprived neighbourhoods. Additional qualitative research on the execution of interventions in primary care was considered necessary for the explanation of differences in effectiveness. *Objectives:* Our question was: Can we understand RCT outcomes better with qualitative research? *Design and Methods:* An ethnographic design was used. In their daily work we observed 2 researchers for 8 months 2 days a week, and 4 practice nurses for 5 days each. Two other practice nurses were interviewed. All transcribed observations were analysed thematically. *Results:* from the RCT showed differences in effectiveness among the centres and that intensified preventive care provided no additional effect compared to structural physical measurements. Ethnographic results show that these differences are due to variations in execution of the intervention among the centres. *Conclusion:* In conclusion ethnographic analysis showed that differences in execution of intervention lead to differences in RCT outcomes. The RCT conclusion 'no additional effect' is problematic. Discussion As variations in primary care influence a RCT's execution they create methodological problems for research. To what extent can additional qualitative research improve RCT research.

306 CHINESE MEDICINAL HERBS 'DAN SHEN' COMPOUND FOR ACUTE MYOCARDIAL INFARCTION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Acute myocardial infarction is the most important cause of morbidity from ischemic heart disease (IHD) and is the leading cause of death in the western world. **Objectives:** To assess the benefits and harms of 'Dan Shen' compound for acute myocardial infarction. **Methods:** We searched The Cochrane Controlled Trials Register on The Cochrane Library, MEDLINE, EMBASE, Chinese Biomedical Database and the Chinese Cochrane Centre Controlled Trials Register. We included Randomized controlled studies lasting at least 7 days. **Main results:** Eleven studies with 1196 participants in total were included. Seven studies compared the mortality in routine treatment plus 'Dan Shen' compound and single routine treatment. One trial compared the arrhythmia in routine treatment plus 'Dan Shen' compound injection and single routine treatment. Two trials compared the revascularization in routine treatment plus 'Dan Shen' compound injection and single routine treatment. **Conclusions:** Evidence is insufficient to recommend the routine use of 'Dan Shen' compound because of the small number of included studies and their low quality. No well designed randomized controlled trials with adequate power to provide a more definitive answer have been conducted. In addition, the safety of 'Dan Shen' compound is unproven, though adverse events were rarely reported.

307 THE EUROPEAN ANTIMICROBIAL RESISTANCE SURVEILLANCE SYSTEM (EARSS): RESISTANCE, AN INCREASING HEALTH THREAT!

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Antimicrobial resistance is emerging. To identify the scope of this threat and to be able to take proper actions and evaluate these, monitoring is essential. The remit of EARSS is to maintain a comprehensive surveillance system that provides comparable and validated data on the prevalence and spread of major invasive bacteria with clinically and epidemiologically relevant antimicrobial resistance in Europe. Since 2000, EARSS collects routine antimicrobial susceptibility test (AST) results of invasive isolates of five indicator bacteria, tested according to standard protocols. In 2004, AST results for 80,000 isolates were provided by 800 laboratories, serving 1200 hospitals, covering 100 million inhabitants in 30 countries. Through a biannual questionnaire denominator information was collected. The quality of AST results of laboratories was evaluated by the yearly external quality assessment. Currently, EARSS includes all member and candidate states (29) of the European Union, plus Israel, Bosnia, Bulgaria and Turkey. Participating hospitals treat a wide range of patients and laboratory results are of sufficient validity. EARSS identified antimicrobial resistance time trends and found a steady increase for most pathogen-compound combinations. In conclusion, EARSS is a comprehensive system with sufficient quality to show that antimicrobial resistance is increasing in Europe and threatens health-care outcomes.

308 DETERMINATION OF THE TRIHALOMETHANE CONCENTRATION IN DRINKING WATERS IN THE CITY OF VALENCIA, SPAIN

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Introduction: Since chloroform has been detected in drinking waters, the number of studies has increased to identify the presence of trihalomethanes (THMs) in drinking waters, as well as to establish the possible effects they may have population health. **Objectives:** To determine THMs levels in the water distributing network in the city of Valencia. **Design and Methods:** Over a one-year period, 16 points of the drinking water distributing network have undergone sampling at 1 week intervals. The concentration of these pollutants was determined by gas chromatography. **Results:** Our results showed greater concentrations of the species substituted by chlorine and bromine atoms (dichlorobromomethane and dibromochloromethane) in the range of 10–20 µg/l for both, 0–10 µg/l for trichloromethane and between 0–5 µg/l for tribromomethane. An increase in THMs concentration was observed in those points near the sea, although they did not exceed the legal limit of 100 µg/l. **Conclusion:** We established two areas of concentration of these species in water: high and average, according to their proximity to the sea.

312 RISK OF SECOND MALIGNANCIES IN LONG-TERM SURVIVORS OF CHILDHOOD CAANCER

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Childhood cancer survivors are known to be at increased risk for second malignancies. **Objectives:** We studied long-term risk of second malignancy in 5-year survivors, according to therapy and follow-up interval. **Methods:** The risk of second malignancies was assessed in 1368 5-year survivors of childhood cancer treated in the Emma Children's Hospital AMC in Amsterdam and compared with incidence in the general population of the Netherlands. Complete follow-up till at least January 2001 was obtained for 91.9% of the patients. The median follow-up time was 16.8. **Results:** Sixty second malignancies were observed against 5.4 expected, yielding a standardized incidence ratio (SIR) of 11.2 (95% CI: 8.53–14.4). The absolute excess risk (AER) was 3.2 per 1,000 persons per year. The SIR appeared to stabilize after 15 years of follow-up, but the absolute excess risk increased with longer follow-up (AER follow-up > = 25 years of 8.24). Patients who were treated with radiotherapy experienced the greatest increase of risk. **Conclusions:** In view of the quickly increasing background rate of cancer with ageing of the cohort, it is concerning that even after more than 20 years of follow-up the SIR is still increased, as is the absolute excess risk.

313 OVERWEIGHT AND OBESITY INCREASE THE RISK OF CORONARY HEART DISEASE: A POOLED ANALYSIS OF 30 PROSPECTIVE STUDIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

The importance of overweight as a risk factor for coronary heart disease (CHD) remains unsettled. We estimated the relative risk (RR) for CHD associated with underweight (body mass index, BMI < 20 kg/m²), overweight (25 – 30 kg/m²) and obesity (= 30 kg/m²), compared with normal weight (20 – 25 kg/m²) in a random effects meta-analysis of 30 prospective studies, including 389,239 healthy, predominantly Caucasian persons. We also explored sources of heterogeneity between studies and examined effects of systematic adjustment for confounding and intermediary variables. Pooled age-, sex- and smoking-adjusted RRs (95% confidence interval) for overweight, obesity and underweight compared with normal weight were 1.33 (1.24 – 1.43), 1.69 (1.44 – 1.99) and 1.01 (0.85 – 1.20), respectively. Stratified analyses showed that pooled RRs for BMI were higher for studies with longer follow-up (= vs. < 15 years) and younger populations (< vs. = 60 years). Additional adjustment for blood pressure, cholesterol levels and physical activity decreased the RR per 5 BMI units from 1.28 (1.21 – 1.34) to 1.16 (1.11 – 1.21). We conclude that overweight and obesity are associated with a substantially increased CHD risk in Caucasians, whereas underweight is not. Prevention and reduction of overweight and obesity, therefore, remain of importance for preventing CHD.

314 BREAST CANCER SURVIVAL AND TUMOR CHARACTERISTICS OF PREMENOPAUSAL WOMEN CARRYING THE CHEK2*1100DEL C MUTATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

The CHEK2*1100delC germline variant has been shown to increase susceptibility for breast cancer and could have an impact on breast cancer survival. This study aimed to determine the proportion of CHEK2*1100delC germline mutation carriers, and breast cancer survival and tumor characteristics, compared to non-carriers in an unselected (for family history) breast cancer cohort. Women with invasive mammary carcinoma, aged < 50 years and diagnosed in several Dutch hospitals between 1973 and 1995, were included. For all patients, paraffin embedded tissue blocks were collected for DNA isolation (normal tissue), and subsequent mutation analyses, and tumor revision. In 1479 breast cancer patients, 54 (3.7%) CHEK2*1100delC carriers were detected. CHEK2*1100delC tumors characteristics, treatment and patient stage did not differ from those of non-carriers. CHEK2*1100delC

carriers had 2 times increased risk of developing a second breast cancer compared to non-carriers. With a mean follow up of 10 years, CHEK2*1100delC carriers had worse recurrence free and breast cancer specific survival than non-carriers. In conclusion, this study indicates a worse breast cancer outcome in CHEK2*1100delC carriers compared to non-carriers. The extension of the presence of the CHEK2*1100delC germline mutation warrants research into therapy interaction and possibly into screening of premenopausal breast cancer patients.

317 EFFICACY AND SAFETY OF HORMONE THERAPY IN WOMEN WITH HOT FLASHES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: For primary or secondary prevention (e.g. myocardial infarction) hormone therapy (HT) is no longer recommended in postmenopausal women. However, physicians commonly prescribe HT to climacteric women as a treatment of hot flashes/night sweats. **Objective:** To assess efficacy and adverse reactions of HT in climacteric women with hot flashes (including night sweats). **Methods:** For our systematic review (SR), we searched databases (MEDLINE, EMBASE, Cochrane) for randomized controlled trials, other SRs and meta-analyses, published 1999 to 2004. The quality of the studies was assessed using checklists corresponding to the study type. **Results:** We identified 18 studies of good/excellent quality. They included predominantly Caucasian women and lasted 3–12 months. In all studies, HT showed a reduction of 75–95% in the number of hot flashes, which was significantly better than placebo. Most common adverse events of HT were uterine bleeding and breast pain/tenderness. Cardiovascular diseases and neoplasms were reported only sporadically. **Conclusions:** HT is highly effective in treating hot flashes in climacteric women. However, to assess serious adverse events longer studies (including also non-Caucasian women) are needed, as there are only sparse data available.

318 ISOFLAVONES DO NOT AFFECT THE INSULIN-LIKE GROWTH FACTOR (IGF) SYSTEM IN A TRIAL IN MEN WITH HIGH COLORECTAL CANCER RISK

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

IGF-I is an important growth factor, and has been associated with increased colorectal cancer risk in both prospective epidemiological and experimental studies. However, it is largely unknown which lifestyle factors are related to circulating levels of the IGF-system. Studies investigating the effect of isoflavones on the IGF-system have thus far been conflicting. The purpose of this study was to evaluate the effects of isoflavones on the circulating IGF-system in men with high colorectal cancer risk. We conducted a randomized, placebo-controlled, cross-over study on the effect of a 2-month isoflavone supplementation (80 mg/day) on IGF levels in 40 men with a family history of colorectal cancer or a personal history of colorectal adenomas. Dropout rate was 5%, and all but 3 men were

more than 80% compliant. Isoflavones supplementation did not significantly alter serum total IGF-I (-1.6%; 95%CI: -9.3 - 6.1) and IGF binding protein 3 (+0.7%, 95%CI: -3.5 - 4.8) concentrations. Other covariables, e.g. dietary energy and macronutrient intake, physical activity, and body weight, are currently under evaluation. In conclusion, this study shows that a 2-month isoflavone supplementation has no effect on serum IGF-system components in men with high colorectal cancer risk.

321 POPULATION-BASED REGISTERS FOR MYOCARDIAL INFARCTION IN EUROPE: RESULTS FROM EURO-CISS PROJECT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background/Objective: EUROCISS-European Cardiovascular Indicators Surveillance Set Project, funded under the Health Monitoring Programme of European Commission, aims developing health indicators and recommendations for monitoring cardiovascular diseases (CVD). *Methods:* Prioritise CVD according to their importance in public health; identify morbidity and mortality indicators; develop data collection and harmonizing recommendations; describe data collection, validation procedures and discuss their comparability. Population (geographical area, age, gender), methods (case definition, ICD codes), procedures (record linkage, validation), morbidity indicators (attack rate, incidence, case fatality) collected by questionnaire. *Results:* The main outcome was the inventory of acute myocardial infarction (AMI) population-based registers in the 18 European partner countries: 8 countries have no register, 10 regional, 4 of which also national. Registers differ for: ICD codes (only AMI or also acute and subacute ischemic forms), ages (35-64, 35-74, all), record linkage (probabilistic, personal identification number), calendar years, validation (MONICA, ESC/ACC diagnostic criteria). Differences make morbidity indicators difficult to compare. *Conclusion:* New diagnostic criteria led to a more exhaustive definition of myocardial necrosis as acute coronary syndrome (ACS). Given the high burden of AMI/ACS, efforts are needed to implement population-based registers in all countries. Application of recommended indicators, validated through standardized methodology, will provide reliable, valid and comparable data.

322 EFFECT MEASURES IN CROSS-SECTIONAL STUDY WITH COMPLEX SAMPLING: A COMPARATIVE STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objective: The objective of this paper was to compare and discuss the use of odd ratios and prevalence ratios using real data with complex sampling design. *Method:* We carried out a cross-sectional study using data obtained from a two-stage stratified cluster sample from a study conducted in 2001-2002 (n = 1,958). Odds ratios and prevalence ratios were obtained by unconditional logistic regression and Poisson regression, respectively, for later comparison using the Stata statistical package (v. 7.0). Confidence intervals and design effects were considered in the evaluation of the precision of estimates. Two outcomes of a cross-sectional study with different

prevalence were evaluated: vaccination against influenza (66.1%) and self-referred lung disease (6.9%). *Results:* In the high-prevalence scenario, using prevalence ratios the estimates were more conservative and we found narrower confidence intervals. In the low-prevalence scenario, we found no important differences between the estimates and standard errors obtained using the two techniques. *Discussion:* However, it is the researcher's task to choose which technique and measure to use for each set of data, since this choice must remain within the scope of Epidemiology.

323 EXPLAINING THE DECLINE IN CORONARY HEART DISEASE MORTALITY IN ITALY BETWEEN 1980 AND 2000

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In Italy coronary heart disease CHD mortality has been falling since the 1970s. *Objective:* To examine how much of the fall between 1980 and 2000 could be attributed to trends in risk factors, medical and surgical treatments. *Methods:* A validated model was used to combine and analyse data on uptake and effectiveness of cardiological treatments and risk factor trends. Published trials, meta-analyses, official statistics, longitudinal studies, surveys are main data sources. *Results:* CHD mortality fell by 41% in men and 43% in women aged 25-84; 42,930 fewer deaths in 2000. Approximately half mortality fall was attributed to treatments in patients and half to population changes in risk factors: in MEN, mainly improvements in cholesterol (39%) and smoking (33%) rather than blood pressure (6%). In WOMEN 1/3 mortality fall attributable to improvements in cholesterol (31%) and blood pressure (5%); adverse trends in smoking (-14%). Adverse trends also in BMI (-2% in both genders) and diabetes (-4% in men; -0.5% in women). *Conclusion:* Half CHD mortality fall was attributable to risk factors reductions, principally cholesterol in men and women and smoking in men; in women rising smoking rates generated substantial additional deaths. A comprehensive strategy promoting primary prevention is needed.

325 NEURAMINIDASE INHIBITORS PREVENT INFLUENZA INFECTION IN PATIENTS AFTER CONTACT WITH AN INFLUENZA INDEX CASE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The neuraminidase inhibitors (NI) Zanamivir and Oseltamivir are effective in the treatment of influenza A and B. *Objective:* To investigate the efficacy of NI in the post exposure prophylaxis (PEP), i.e. in persons who had contact with an influenza case. *Design and Methods:* We conducted a systematic electronic data base review for the period between 1999 and 2004. Studies were selected and graded by two independent reviewers. The proportion of influenza-positive patients was chosen as primary outcome. For all analyses fixed effect models were used. Weighted relative risks (RR) and 95% confidence intervals (CI) were calculated on an intention-to-treat basis. *Results:* 5 randomized controlled trials (N=3,663) were included in the analysis. Zanamivir and Oseltamivir were effective against an infection with influenza (RR=0.23, 95% CI 0.15-0.36 and RR=0.20, 95% CI 0.11-0.34, respectively). Prophylactic efficacy was comparable in the subgroup of persons who had contact with an index case with lab-confirmed influenza (4 studies, all NI, RR=0.18, 95% CI 0.12-0.28). *Conclusions:* The available evidence suggests that NI are effective in the

PEP of influenza. *Discussion:* Results have to be interpreted with caution when transferred into general medical practice because study populations mainly included young and healthy adults without chronic diseases.

328 THE PROTECTIVE EFFECT OF GIVING BREAST FEEDING ON BREAST CANCER RISK; A STUDY AMONG MOTHERS IN THE DOM COHORT

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

An important risk factor of breast cancer, mammographic breast density (MBD) is inversely associated with reproductive factors (age at first childbirth, and lactating). As pregnancy and lactating are highly correlated, whether this decline is induced by pregnancy or lactating is still unclear. We hypothesize that lactation reduces MBD independent of age at first pregnancy and parity. A study was done on 4051 women in the third sub-cohort of the DOM project who had complete data regarding lactating, DY, had a child but varied by duration of lactating. Multiple logistic regression analysis was done using DY (Yes/ No) as outcome variable. Explanatory variables added into the model were age, BMI, parity and age at first childbirth. A significant univariate relation was seen between lactating of the first child and DY. OR 0.83 (CI 95% 0.73; 0.94). Adjusted for explanatory variables, the OR changed to 0.89 (CI 95% 0.73; 1.08). Lactating seems to contribute independently to the reduction of MBD over and above pregnancy itself. Given the limitations of the dichotomous DY ratio scores, additional studies will address which part; either glandular mass or fat tissue is responsible for the observed relation which will be measured from mammograms to be digitized.

329 REGIONAL AND METROPOLITAN/NON-METROPOLITAN VARIATIONS IN ALCOHOL CONSUMPTION IN THE U.S.: FINDINGS FROM A NATIONAL STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Alcohol consumption is common, but little is known about whether drinking patterns vary across geographic regions. *Objectives:* To examine potential disparities in alcohol consumption across census regions and urban, suburban, and rural areas of the United States. *Design and Methods:* The data source was the National Epidemiologic Survey on Alcohol and Related Conditions, an in-person interview of approximately 43,000 adults. The prevalence of abstinence and, among drinkers, the prevalences of heavy and daily drinking were calculated by census region and metropolitan status. Multivariate logistic regression analyses were conducted to test for differences in abstinence and per drinker consumption after controlling for confounders. *Results:* The odds of abstinence, heavy, and daily drinking varied widely across geographic areas. Additional analyses stratified by census region revealed that rural residents in the South and Northeast as well as urban residents in the Northeast had higher odds of abstinence. Rural residents in the Midwest had higher odds of heavy drinking. *Conclusion and Discussion:* Heavy alcohol consumption is of particular concern among drinkers living in the rural areas of the United States, particularly the rural Midwest. Other nations should consider testing for similar differences as they implement policies to promote safe alcohol consumption.

330 LONG-TERM PERSONAL EXPOSURE TO TRAFFIC EMISSIONS AND CORONARY CALCIFICATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Long-term exposure to particulate air pollution (PM) has been suggested to accelerate atherogenesis. *Objective:* We examined the relationship between long-term exposure to traffic emissions and the degree of coronary artery calcification (CAC), a measure of atherosclerosis. *Methods:* In a population based, cross-sectional study, distances between participants' home addresses and major roads were calculated with a geographic information system. Annual mean PM_{2.5}-exposure at the residence was derived from a small scale geostatistical model. CAC, assessed by electron-beam computer tomography, was modelled with linear regression by proximity to major roads, controlling for background PM_{2.5}-air pollution and individual level risk factors. *Results:* Of 4424 participants 499 lived within 150 m of a major road. Background-PM_{2.5} ranged from 16.1 to 26.8 $\mu\text{g}/\text{m}^3$ (mean 22.8). Mean CAC-values were strongly dependent on age, sex and smoking status. Reducing the distance to major roads by 50% leads to increases in CAC by 10.1% (95%CI 0.6–20.5%) in the unadjusted model and 5.5% (95%CI –2.2–13.8) in the adjusted model. Stronger effects (adjusted model) were seen in men (7.4%, 95%CI –3.9–20.1) and male non-smokers (10.5%, 95%CI –3.2–13.0). *Conclusions:* This study provides epidemiologic evidence that long-term exposure to traffic emissions is an important risk factor for coronary calcification.

331 PRO12ALA POLYMORPHISM IN PPARG2 GENE AND THE RISK OF ACUTE MYOCARDIAL INFARCTION, CORONARY HEART DISEASE AND STROKE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: This polymorphism has been associated risk factor levels and in one study with a reduced risk of acute myocardial infarction (AMI). Yet, the risk relation has not been confirmed. *Objectives:* We investigated the role of this polymorphism on occurrence of AMI, coronary heart disease (CHD) and stroke in healthy Dutch women. *Design and Methods:* A case-cohort study in a prospective cohort of 15236 initially healthy Dutch from 1993 until January 1st 2000. *Results:* We applied a Cox proportional hazards model with an estimation procedure adapted for case-cohort designs. A lower AMI (N = 71) risk was found among carriers of the Ala allele (N = 364) compared with those with the more common Pro12Pro genotype (hazard ratio = 0.51; 95% CI, 0.26 to 1.00). No relation was found for CHD (N = 211; HR 0.82; 95% CI, 0.58–1.17) and for stroke (N = 74; HR 1.41; 95% CI, 0.85–2.33). In our data little evidence was found for a relation between PPARG2 and risk factors. *Conclusion and Discussion:* This study shows the Pro12Ala polymorphism in PPARG2 gene is modestly related to a reduced risk of AMI in our study. No statistically significant relation was found for CHD and stroke.

332 PSEUDO CLUSTER RANDOMIZATION: NO ALLOCATION DISCLOSURE OR SELECTION BIAS IN THE DUTCH EASYCARE STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Pseudo cluster randomization was used in a services evaluation trial because individual randomization risked contamination and cluster randomization risked selection bias due to expected treatment arm preferences of recruiting general practitioners (GPs). GPs were randomized in two groups. Depending on this randomization, participants were randomized in majority to one study arm: intervention:control/80:20 or intervention:control/20:80. **Objectives:** To evaluate internal validity of pseudo cluster randomization. Have GPs treatment arm preferences? What is the effect on allocation concealment and selection bias? **Design and Methods:** We compared the baseline characteristics of participants to study selection bias. Using a questionnaire, GPs indicated their treatment arm preferences on a Visual Analogue Scale (VAS) and the allocation proportions they believed were used to allocate their patients over treatment arms. **Results:** GPs preferred allocation to the intervention (VAS 14.5 (SD 15.6); 0–100: 0 indicates strongly favoring the intervention arm). After recruitment 67% of GPs estimated a randomization ratio of 50:50 was used. The participants showed no relevant differences at baseline. **Conclusion and Discussion:** GPs profoundly preferred allocation to the intervention group. Few indications of allocation disclosure or selection bias were found in the Dutch EASYcare trial. Pseudo cluster randomization proves to be a valid randomization method.

335 METABONOMIC APPLICATIONS TO SELF-REPORTED DATA IN EPIDEMIOLOGY STUDIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Epidemiological studies rely on self-reporting to acquire data on participants, although such data are often limited in reliability. The aim here is to assess nuclear magnetic resonance (NMR) based metabonomics for evaluation of self-reported data on paracetamol use. **Method:** Four in-depth 24-hour dietary recalls and two timed 24-hour urine collections were obtained for each participant in the INTERMAP study. A 600 MHz ¹H NMR spectrum was acquired for each urine specimen (n = 9,943). Training and test sets involved two strata, i.e., paracetamol metabolites yes or no in the urine spectra, selected from all 17 population samples by a principal component analysis model. **Results:** The partial least squares-discriminant analysis (PLS-DA) model based on a training set of 110 samples was validated by test set (n = 620). The model correctly predicted stratum for 575 of 587 samples (98%) after removal of 33 outliers not fitting the model, sensitivity 95.4%, specificity 100%. This model was used to predict paracetamol status in all INTERMAP specimens. It identified 384 participants (8.2%) who underreported analgesic use, of whom 63 underreported analgesic use in both clinical visits. **Conclusion:** NMR-based metabonomics can be used as a tool to enhance reliability of self-reported data.

337 LONG-TERM PROGNOSTIC FACTORS OF CHANGE IN LUNG FUNCTION IN ASTHMATICS: A 9 YEAR FOLLOW-UP STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In patients with asthma, the decline in forced expiratory volume in one second (FEV1) is accelerated compared with non-asthmatics. **Objective:** To investigate long-term prognostic factors of FEV1 change in asthmatics from the general population. **Methods:** A cohort of 667 asthmatics (20–44 years-old) was identified in the frame of the European Community Respiratory Health Survey (1991/93), and followed up in 1998/2002. Spirometry was performed on both occasions. The annual FEV1 decrease (?FEV1) was analysed by multi-level regression models, according to age, sex, height, BMI, occupation, familiarity of asthma, hospitalization for asthma (baseline factors); cumulative time of inhaled corticosteroid (ICS) use and annual weight gain during the follow-up; lifetime pack-years smoked. **Results:** When adjusting for all covariates, ICS use for >2 years significantly reduced ?FEV1, with respect to non-users, of 10.4(95%CI: 1.6–19.2) mL/year. ?FEV1 was 9.9(0.5–19.4) mL/year lower in women than in men. It increased by 0.7(0.2–1.2) mL/year for every additional year in patient age and by 7.2(3.3–11.0) mL/year for every additional Kg/year in the rate of weight gain. **Conclusion:** Long-term ICS use (>2 years) seems to be associated with a reduced ?FEV1 over a 9-year follow-up. Body weight gain seems a crucial factor in determining lung function decrease in asthmatics.

341 IMPLEMENTATION OF NEW SCREENING MODES TO A MAMMOGRAPHY PROGRAM

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Effectiveness of screening can be predicted by episode sensitivity, which is estimated by interval cancers following a screen. Full-field digital or CR plate mammography are increasingly introduced into mammography screening. **Objectives:** To develop a design to compare performance and validity between screen-film and digital mammography in a breast cancer screening program. **Methods:** Interval cancer incidence was estimated by linking 721 000 screening visits from 1991–2001 at an individual level to the files of the Cancer Registry in Finland. These data were used to estimate the study size requirements for analyzing differences in episode sensitivity between screen-film and digital mammography in a randomized setting. **Results:** The two-year cumulative incidence of interval cancers per 100 000 screening visits was estimated to be 300. To allow the maximum acceptable difference in the episode sensitivity between screen-film and digital arm to be 20% (80% power, 0.05 significance level, 1:1 randomization ratio, 85% attendance rate), approximately 240 000 women need to be invited. **Conclusion:** Only fairly large differences in the episode sensitivity can be explored within a single randomized study. In order to reduce the degree of non-inferiority between the screen-film and digital mammography, meta-analyses or pooled analyses with other randomized data are needed.

342 DIETARY NUTRIENTS AND COLORECTAL CANCER RISK IN POLAND

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

According to the literature up to 70% of colorectal cancers worldwide is preventable by dietary change. However the results of the epidemiologic studies are not consistent across the countries. The objective of the study is to evaluate the role of dietary nutrients on colorectal cancer risk in Poland. The hospital-based case-control study was carried out in 2000–2003. In total, 239 histologically confirmed cancer cases and 548 controls were recruited. Adjustment for age, sex, education, marital status, multivitamin use, alcohol consumption, cigarette smoking, family history and energy consumption was done by logistic regression model. Low tertile of daily intake in the control group was defined as a reference level. The lower colorectal cancer risk was found in cases with high daily intake of dietary fiber (OR = 0,62; 95%CI: 0,42–0,91) and vitamin E (OR = 0,67; 95%CI: 0,46–0,99). On the other hand, an increased risk for high monosaccharides consumption was observed. The risk pattern wasn't changed after additional adjustment for physical activity and body mass index. The results of the present study support the protective role of dietary fiber and some antyoxidative vitamins in the etiology of colorectal cancer. Additionally they suggest that high consumption of monosaccharides may lead to elevated risk of investigated cancers.

347 VALIDITY OF DIETARY RECALL WITH ADOLESCENTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Assessment of nutrition is very difficult in every population, but in children there's additional question if child can properly recognize and recall foods that have been eaten. The aim of this study was to assess if dietary recall administered to adolescents can be used in epidemiological studies on nutrition. Subjects were 100 children, 9–15 years old, and they caretakers. 24-h recall was used to evaluate children's nutrition. Both, child and caretaker were asked to recall all products, drinks and dishes eaten by child during the day before recall. The statistical analyses were done separately for each meal. We have noticed statistically significant differenced for intake of energy and almost all nutrients from the lunch. The observed Spearman rank correlation coefficients between child and his caretaker ranged from 0.39 for vitamin C up to 0.71 for intake of carbohydrates. Only calcium intake (146.16 vs. 123.52 mg/day) differentiated groups for the breakfast and b-carotene for the supper. The study showed that the recall with adolescents could be helpful source of data for the research in the population aspect. However, one shouldn't use such data for the examination of the individual nutritional habit of children, especially information about dinner can be biased.

348 CHINESE MEDICINAL HERBS FOR ACUTE BRONCHITIS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Acute bronchitis is one of the most common diagnoses made by primary care physicians. In addition to antibiotics,

Chinese medicinal herbs may be a potential medicine of choice.

Objectives: This review aims to summarize the existing evidence of comparative effectiveness and safety of Chinese medicinal herbs for treating uncomplicated acute bronchitis. **Methods:** We searched the Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Chinese Biomedical Database and etc. We included randomised controlled trials comparing Chinese medicinal herbs with placebo, antibiotics or other Western medicine for treating uncomplicated acute bronchitis. At least two authors extracted data and assessed trial quality. **Main results:** Four trials reported the time to improvement of cough, fever, and rales; two trials reported the proportion of patients with improved signs and symptoms; thirteen trials analyzed the data of global assessments of improvement. One trial reported the adverse effect during treatment. **Conclusions:** There is insufficient quality data to recommend the routine use of Chinese herbs for acute bronchitis. The benefit found in individual studies and this systematic review could be due to publication bias and study design limitations. In addition, the safety of Chinese herbs is unknown, though adverse events are rarely reported.

352 LONG-TERM MORTALITY IN PATIENTS WITH MULTIPLE SCLEROSIS IN WEST FRANCE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: No study has been carried out about mortality in Multiple Sclerosis (MS) in France. **Objectives:** To measure mortality among MS patients from the Rennes neurology department and describe causes of death; To determine prognostic factors; To compare patients' mortality with the French matched population. **Design and Methods:** Patients with a definite MS and classified as dead or alive at 1st January 2004 were included in this retrospective observational study. Influence of demographic and clinical variables was assessed with Kaplan Meier and Cox methods. Standardised Mortality Ratios were computed to compare patients' mortality with the French general population. **Results:** A total of 1935 patients were included (623 men, 1322 women). The mean age at MS onset was 31 +/- 10 years and the mean follow-up duration was 15 +/- 9 years (29260 patients-years). By 2004, 85 deaths occurred (3 per 1000 patients-years). Male gender, progressive course, polysymptomatic onset and high relapse rate were related to a worse prognosis. MS did not increase the number of deaths in our cohort compared to the general French population (75 expected), except for highly disabled patients (58 observed, 18 expected). **Conclusion:** This study gave precise insights on mortality in multiple sclerosis in West France.

353 MICROBIAL AGENTS IN MATTRESS DUST AND CHILDREN'S ALLERGIC SENSITISATION IN THE AIR-ALLERG STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: It has been suggested that childhood exposure to elevated levels of microbial agents decreases the risk of allergic sensitisation in children. **Objective:** To study the association between allergic sensitisation at age 2–4 years and microbial agents in

mattress dust. *Methods:* We performed nested case-control studies within ongoing birth cohort studies in Germany, The Netherlands, and Sweden and selected approximately 180 sensitised and 180 non-sensitised children per country. We measured levels of bacterial endotoxin, $\beta(1->3)$ -glucans, and fungal extracellular polysaccharides (EPS) in dust samples collected on the children's mattresses. *Results:* Combined across countries, higher amounts of dust and higher endotoxin, $\beta(1->3)$ -glucans, and EPS loads of mattress dust were associated with a significantly decreased risk of sensitization to inhalant allergens, but not food allergens. After mutual adjustment, only the protective effect of the amount of mattress dust remained significant [odds ratio (95% confidence interval) 0.57 (0.39–0.84)]. *Conclusion:* Higher amounts of mattress dust might decrease the risk of allergic sensitization to inhalant allergens. The effect might be partly attributable to endotoxin, $\beta(1->3)$ -glucans, and EPS. It is not possible to distinguish with certainty, which component relates to the effect, since microbial agents loads are highly correlated with amount of dust and with each other.

354 INCIDENCE OF MULTIPLE SCLEROSIS IN WESTERN FRANCE, 2000–2001

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In France, multiple sclerosis (MS) is thought to affect 14 to 52/10(5) inhabitants, and only one study (Dijon city) estimated the annual incidence at 4.3/10(5). *Objective:* To estimate the incidence of MS among 6042,694 inhabitants (1999 census) of a large area of Western France, including the Brittany region. *Methods:* We prospectively registered newly diagnosed cases of MS who were notified by neurologists, or identified through a cerebrospinal fluid (CSF) register and the MS Clinic (MSC) register of Rennes (Brittany). *Results:* At the last assessment (December 2004), we had registered 440 incident cases living in the whole area and having experienced a first symptom of MS in 2000 (n = 245) or 2001 (n = 195). The standardised MS incidence rates (age-adjusted to the standard European population) were 4.17/10(5) (95% CI: 4.14–4.20) in 2000, 3.33/10(5) (3.31–3.36) in 2001. In Brittany, they were 5.07/10(5) (CI: 5.05–5.09) in 2000 and 4.59/10(5) (4.57–4.61) in 2001. From these data and the mean MS survival time calculated in our MSC, the MS prevalence at 31.12.2000 could be inferred at about 160/10(5) in the study area. *Conclusion:* Western France is a high risk zone for MS, with rates similar to those found in the highest frequency areas of northern Europe.

355 ESTROGEN AND PROGESTERONE RECEPTOR POLYMORPHISMS MAY MODIFY THE EFFECTS OF HORMONE THERAPY ON MAMMOGRAPHIC DENSITY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Postmenopausal hormone therapy (HT) increases mammographic density, a strong breast cancer risk factor, but

effects vary across women. *Objective:* To investigate whether the effect of HT use on changes in mammographic density is modified by polymorphisms in the estrogen (ESR1) and progesterone receptor (PGR) genes. *Design and Methods:* Information on HT use, DNA and two consecutive mammograms were obtained from 795 HT users and 781 never HT users of the Dutch Prospect-EPIC and the English EPIC-Norfolk cohorts. Mammographic density was assessed using a computer-assisted method. Changes in density between mammograms before and during HT use were analyzed using linear regression. *Results:* A difference in percent density change between HT users and never users was seen in women with the ESR1 PvuII Pp or pp genotype (2.24%; $p < 0.01$), but not in those with the PP genotype (0.90%; $p = 0.47$). Similar effects were observed for the ESR1 XbaI and the PGR +331 G/A polymorphisms. The PGR PROGINs polymorphism did not appear to make women more susceptible to the effects of HT use. *Discussion and Conclusion:* Our results suggest that specific polymorphisms in the ESR1 and PGR genes may make women more susceptible to the effects of HT use on mammographic density.

356 CANCER IN TURKISH CHILDREN IN GERMANY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: There is a paucity of data on the cancer risk of Turkish migrant children in Germany. *Objectives:* To identify cancer cases of Turkish origin in the German Childhood Cancer Registry (GCCR) and to compare the relative incidence of individual cancers among Turkish and non-Turkish children. *DESIGN and Methods:* We used a name algorithm to identify children of Turkish origin among the 37,259 cancer cases below 15 years of age registered since 1980. We calculated proportional cancer incidence ratios (PCIR) stratified for sex and time period. *Results:* The name algorithm performed well (high sensitivity and specificity), and 1774 Turkish childhood cancers were identified. Overall, the relative frequency of tumours among Turkish and non-Turkish children is similar. There are specific sites and cancers for which PCIRs are different; these will be reported during the conference. *Conclusion:* Our study is the first to show differences in the relative frequency of cancers among Turkish and non-Turkish children in Germany. *Discussion:* Case control studies could help to explain whether observed differences in the relative frequency of cancers are due to differences in genetic disposition, lifestyle or socio-economic status.

357 DIETARY FOLATE AND APC MUTATIONS IN SPORADIC COLORECTAL CANCER: A DISTINCT PATHWAY IN TUMOUR DEVELOPMENT?

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Folate deficiency may be involved in colorectal carcinogenesis through increased chromosome instability, gene mutations and aberrant DNA methylation. We investigated associations between dietary folate intake and risk of colon and rectum cancer with (APC+) and without (APC[CSYMBOL]) truncating APC

mutations in the Netherlands Cohort Study on diet and cancer. Data from 120,852 participants, 528 cases and 4,176 subcohort members were analysed from a follow-up period between 2.3 to 7.3 years after baseline. Adjusted gender-specific incidence rate ratios (RR) and 95% confidence intervals (CI) were calculated over tertiles of folate intake in case-cohort analyses. High folate intake did not reduce overall colon cancer risk. However, in men only, it was inversely associated with APC[CSYMBOL] colon tumours (RR 0.58, 95% CI 0.32–1.05 for the highest versus the lowest tertile of folate intake), but positively associated with APC+ colon tumours (highest vs. lowest tertile: RR 2.77, CI 1.29–5.95). Folate intake was neither associated with overall rectum cancer risk, nor with rectum cancer when APC mutation status was accounted for. We observed opposite associations between folate intake and colon cancer risk with or without APC mutations in men, which may implicate a distinct mutated APC pathway mediated by folate intake in men.

360 ESTABLISHMENT OF A SERUM BANK FOR POPULATION BASED SEROPREVALENCE STUDIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background and Objectives: Ten years after completion of the first serum bank of the general population to evaluate the long-term effects of the National Immunisation Programme (NIP) a new serum collection is desirable. The objective is to provide insight into age-specific estimates of the immunity to childhood diseases and estimates of the incidence of infectious diseases with a frequent sub clinical course. **Design and Methods:** A two-stage cluster sampling technique was used to draw a nationwide sample. In each of five geographic regions, eight municipalities were randomly selected proportionally to their size. Within each municipality, an age-stratified sample of 380 individuals (0–79 yr) will be drawn from the population register. In addition eight municipalities will be selected with lower immunization coverage to obtain insight into the immune status of persons who often refuse vaccination on religious grounds. Furthermore over sampling of migrants will be performed to study whether their immune status is satisfactory. Participants will be asked to fill in a questionnaire and to allow blood to be taken. Extra blood will be taken for a genetic study. **Results and Conclusion:** The design of a population-based serum collection aimed at the establishment of a representative serum bank will be presented.

362 HYPERCHOLESTEROLEMIA MANAGEMENT IN TYPE 2 DIABETES PATIENTS BETWEEN 1998–2004: LONGITUDINAL OBSERVATIONAL STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: During the last decade, the standard of diabetes care evolved to require more intensive management focussing on multiple cardiovascular risk factors. Treatment decisions for lipid-lowering drugs should be based on cholesterol and blood pressure levels. **Objectives:** To investigate the influence of HbA1c, blood pressure and cholesterol levels on subsequent intensification of lipid-lowering therapy between 1998–2004. **Design and Methods:** We conducted a prospective cohort study including 2,373 type 2 diabetes patients who had at least two consecutive annual visits to a diabetes nurse. Treatment intensification was measured by comparing drug regimes per year, and defined as initiation of a new

drug class or dose increase of an existing drug. **Results:** Between 1998–2004, the prevalence of lipid-lowering drug use increased from 12% to 39%. Rates of intensification of lipid-lowering therapy remained low in poorly controlled patients (12% to 28%; TC/HDL ratio > 6). Intensification of lipid-lowering therapy was only associated with TC/HDL ratio (age-adjusted OR = 1.6; 95% CI 1.5–1.7) and this association became slightly stronger over time. Blood pressure was not found to be a predictor of the intensification of lipid-lowering therapy (OR = 1.0). **Conclusion:** Hypercholesterolemia management intensified between 1998–2004, but therapy intensification was only triggered by elevated cholesterol levels. More attention for multifactorial risk assessment is needed.

363 VALIDATION OF NEW MEASURES OF MORBIDITY SEVERITY USING ROUTINE CONSULTATIONS IN ENGLISH AND DUTCH GENERAL PRACTICE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: There are no standard severity measures that can classify the range of illness and disease seen in general practice. **Objectives:** To validate new scales of morbidity severity against age, gender, deprivation and poor physical function. **Design and Methods:** In a cross-sectional design, morbidity data for consulters in a 12-month period was linked to their physical function status (Short-Form-12). There were 9003 English older consulters (50 years +) and 7753 Dutch consulters (18 years +). Consulters for 116 morbidities classified on four GP-defined ordinal scales of severity ('chronicity', 'time course', 'health care use' and 'patient impact on activities of daily living') were compared to consulters for morbidity other than the 116, by age-groups, gender, and dichotomised deprivation and physical function scores. **Results:** For both countries, on all scales, there was an increasing association between morbidity severity and older ages, female gender, more deprivation (minimum $p < 0.05$) and poor physical function (all trends $p < 0.001$). The estimates for categories, for example, within the 'chronicity' scale was ordered as follows: 'acute' (unadjusted Odds Ratio 1.4), 'acute-on-chronic' (1.8), 'chronic' (2.2) and 'life-threatening' (5.4). **Conclusions:** New validated measures of morbidity severity indicate physical health status and offer the potential to optimise general practice care.

364 APPLICABILITY OF A PREDICTION RULE FOR LOWER RESPIRATORY TRACT INFECTIONS IN ELDERLY PATIENTS WITH DIABETES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Patients with diabetes mellitus (DM) have an elevated risk of lower respiratory tract infections (LRTI) and their recurrences. Careful risk assessment using a prediction rule could help general practitioners to target management more efficiently. However a rule derived from an unselected population might be inaccurate for this high-risk group. We aimed to determine the applicability of a developed prediction rule in a subgroup of DM patients. **Design and Methods:** In the original retrospective cohort study, using the computerized database of the University Medical Center Utrecht general practitioners research network, 3,166 episodes of LRTI were included. The outcome was 30-day

hospitalization or death. Calibration and discriminative capacity were estimated. *Results:* Among 445 episodes of LRTI in elderly patients with DM, 68 endpoints occurred (attack rate 15%). Reliability of the model was good (goodness-of-fit test $p = 0.54$). The discriminative properties of the original rule was acceptable (area under the receiver-operating curve (AUC): 0.79, 95% CI: 0.72 to 0.86). *Conclusion:* The prediction rule for the probability of hospitalization or death derived from an unselected elderly population with LRTI appeared to have acceptable discriminative properties in diabetes patients and can be used to target management of these common diseases.

365 EFFECT OF STATIN THERAPY ON ACUTE RESPIRATORY DISEASE DURING INFLUENZA EPIDEMICS: QUANTIFICATION OF CONFOUNDING

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Confounding by indication is a major threat to the validity of non-randomized studies on treatment effects. We quantified such confounding in a cohort study on the effect of statin therapy on acute respiratory disease (ARD) during influenza epidemics in the UMC Utrecht General Practitioner research database among persons aged $> = 50$ years. The primary endpoint was a composite of pneumonia or prednisolone-treated ARD during epidemic, non-epidemic and summer seasons. To quantify confounding, we obtained unadjusted and adjusted estimates of associations for outcome and control events. In all, 22,638 persons provided 130,558 persons-periods, statin therapy was used in 5.3% and in 3,333 person-periods an outcome event occurred. Without adjustments, statin therapy was not associated with the primary endpoint during influenza epidemics (relative risk [RR] 1.02; 95% confidence interval [95%CI]: 0.83–1.25). After applying multivariable generalized estimating equations (GEE) and propensity score analysis the RRs were 0.72 (95% CI: 0.57–0.90) and 0.69 (95% CI: 0.59–0.89). The findings were consistent across relevant strata. In non-epidemic influenza and summer seasons the RR approached 1.0 while statin therapy was not associated with control event rates. Observed confounding in the association between statin therapy and acute respiratory outcomes during influenza epidemics masked a potential benefit of more than 30%.

367 ACETYLSALICYLIC ACID AS AN ADJUVANT THERAPY FOR SCHIZOPHRENIA

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Despite several advances in the treatment of schizophrenia, the currently available pharmacotherapy does not change the course of illness or prevent functional deterioration in a substantial number of patients. Therefore, research efforts into alternative or adjuvant treatment options are needed. In this project, called the 'Aspirine Trial', we investigate the effect of the anti-inflammatory drug acetylsalicylic acid as an add-on to regular antipsychotic therapy on the symptoms of schizophrenia. *Objectives:* To objective is to study the efficacy of acetylsalicylic acid in schizophrenia on positive and negative psychotic symptoms, immune parameters and cognitive functions. *Design and Methods:* A randomized placebo controlled double-blind add-on trial of 80

inpatients and outpatients with schizophrenia, schizophreniform or schizoaffective disorder is performed. Patients are 1:1 randomized to either 3 months 1000 mg acetylsalicylic acid per day or 3 months placebo, in addition to their regular antipsychotic treatment. All patients receive pantoprazole treatment for gastroprotection. Participants are recruited from various major psychiatric hospitals in the Netherlands. The outcomes of this study are 3-month change in psychotic and negative symptom severity, cognitive function, and several immunological parameters. Status Around 45 participants have been randomized. No interim analysis was planned.

369 CONGENITAL CMV INFECTION IN A WEST-AFRICAN BIRTH COHORT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Congenital CMV infection is the most prevalent congenital infection worldwide. Epidemiology and outcome are known to vary with socio-economic background, but few data are available on epidemiology and outcome in a developing country, where the overall burden of infectious diseases is high. *Objective:* To determine prevalence, riskfactors and outcome of congenital CMV infection in an environment with high infectious disease burden *Methods:* As part of an ongoing birth cohort study, baby and maternal samples were collected at birth, and tested with an in-house PCR for the presence of CMV. Standardised clinical assessment were performed by a paediatrician. Placental malaria was also assessed. Follow-up is ongoing till the age of 5 years. *Preliminary Results:* The prevalence of congenital CMV infection was 36/700 (5.1%). The infected children were more often first born babies (47.4% vs 21.5%, $p < 0.001$). While no seasonality was observed, placental malaria was more prevalent among congenitally infected children (25.0% vs 11.3%, $p = 0.04$). There were no symptomatic babies detected. *Conclusion:* This prevalence of congenital CMV is much higher than reported in industrialised countries, in the absence of obvious clinical pathology. Further follow up is needed to assess impact on response to vaccinations, growth, and morbidities.

372 PERSISTENCE OF ASTHMA SYMPTOMS IN PRESCHOOL CHILDREN WITH AND WITHOUT AN EARLY DIAGNOSIS OF ASTHMA

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The prognosis and risk factors for persistent respiratory symptoms in children with and without an early doctor's diagnosis of asthma are unknown. *Objective:* We describe the course of asthma, wheeze and cough from the first 3 years of life until 6 years of age, in symptomatic children with and without a doctor's diagnosis of asthma (DDA) in the first 3 years of life. *Methods:* Children were recruited from a population-based cohort study. Eligible for study were children with $= 1$ reported episode

of wheeze or cough at night in the first 3 years. Data on respiratory symptoms and DDA were collected by yearly questionnaires. In total, 193 symptomatic children with and 916 without an early DDA were included in the study population. *Results:* Fifty-one percent of the children with and 29% of the children without an early DDA had persistent respiratory symptoms at age 6. Persistence of symptoms was associated with parental atopy, eczema, nose symptoms without a cold, or a combination of wheeze and cough in the first 3 years. *Conclusions:* Monitoring the course of symptoms in children with risk factors for persistent symptoms, irrespective of a diagnosis of asthma, may contribute to early recognition and treatment of asthma.

373 SELECTIVE RESPONSE AND BIAS IN THE THIRD WAVE OF A LONGITUDINAL STUDY AMONG SURVIVORS OF A DISASTER

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Little is known about the response mechanisms of survivors of disasters. *Objective:* To examine selective non-response and to investigate whether attrition has biased the prevalence estimates among survivors of a disaster. *Design and Methods:* A longitudinal study was performed after the explosion of a fireworks depot in Enschede, the Netherlands. Survivors completed a questionnaire 3 weeks (T1), 18 months (T2) and 4 years post-disaster (T3). Prevalence estimates resulting from multiple imputation were compared with estimates resulting from complete case analysis. *Results:* Non-response differed between native Dutch and non-western immigrant survivors. For example, native Dutch survivors who participate at T1 only were more likely to have health problems at T1 such as depression than native Dutch who participated at all three waves (OR = 1.9, 95% CI: 1.2–2.9). In contrast, immigrants who participated at T1 only were less likely to have depression at T1 (OR = 0.2, 95% CI: 0.1–0.6). *Conclusion and Discussion:* Among native Dutch survivors, the imputed estimates of T3 health problems tended to underestimated than the complete case estimates. The imputed T3 estimates among immigrants were unaffected or somewhat overestimated than the complete case estimates. Multiple imputation is a useful statistical technique to examine whether selective non-response has biased the prevalence estimates.

375 PHYSICAL ACTIVITY AND COLON CANCER RISK, A SYSTEMATIC REVIEW OF CURRENT EVIDENCE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Several epidemiologic studies have shown decreased colon cancer risk in physically active individuals. *Objectives:* This review provides an update of the epidemiologic evidence for the association between physical activity and colon cancer risk. We also explored whether study quality explains discrepancies in results between different studies. *Methods:* We included cohort (male N = 16; female N = 10) and case-control studies (male N = 13; female N = 12) that assessed total or leisure time activities in relation to colon cancer risk. We developed a specific methodological quality scoring system for this review. Due to the large heterogeneity between studies, we refrained from statistical pooling. *Results:* In males, the cohort and case-control studies lead to different conclusions: the case-control studies provide strong

evidence for a decreased colon cancer risk in the physically active while the evidence in the cohort studies is inconclusive. These discrepant findings can be attributed to either misclassification bias in cohort or selection bias in case-control studies. In females, the small number of high quality cohort studies precludes a conclusion and the case-control studies indicate an inverse association. *Conclusion:* This review indicates a possible association of physical activity and reduction of colon cancer risk in both sexes but the evidence is not yet convincing.

376 FACTORS ASSOCIATED WITH LATE ADVERSE EFFECTS OF RADIOTHERAPY AFTER BREAST-CONSERVING SURGERY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background/Objectives: Radiotherapy after lumpectomy is commonly applied to reduce recurrence of breast cancer but may cause acute and late side effects. We determined predictive factors for the development of late toxicity in a prospective study of breast cancer patients. *Methods:* Late toxicity was assessed using the RTOG/EORTC classification among 418 women receiving radiotherapy following lumpectomy after a mean follow-up time of 51 months. Predictors of late toxicity were modelled using Cox regression in relation to observation time, adjusting for age, BMI and biologically effective dose in the maximum at the skin. *Results:* 133 (31.8%) patients presented with telangiectasia and 28 (6.7%) patients with fibrosis. We observed a strong association between development of telangiectasia and fibrosis (p < 0.01). Increasing patient age was a risk factor for telangiectasia and fibrosis (p for trend 0.02 and 0.04, respectively). Boost therapy (hazard ratio (HR) 4.2, 95% CI 1.7–10.7) and acute skin toxicity (HR 1.6, 95% CI 1.0–2.6) significantly increased risk of telangiectasia. Risk of fibrosis was elevated among patients with atopic diseases (HR 2.2, 95% CI 1.0–4.7). *Discussion:* Our study revealed several risk factors for late complications of radiotherapy. Further understanding of differences in response to irradiation may enable individualized treatment and improve cosmetic outcome.

379 RINT, EXHALED NITRIC OXIDE AND THE PREDICTION OF ASTHMA AND RESPIRATORY SYMPTOMS IN CHILDREN

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Objective: To investigate whether measurement of interrupter resistance (Rint) and exhaled nitric oxide (NO) in children with respiratory symptoms at age 4 can be used to predict doctor-diagnosed asthma and persistent respiratory symptoms at age 6. *Methods:* Children were recruited from a population-based cohort study. Complete data on Rint (age 4), exhaled NO (age 4),

doctor-diagnosed asthma and respiratory symptoms (age 6) were available for 311 (Rint) and 125 (NO) children. *Results:* The discriminative capacities of Rint and exhaled NO were statistically significant for the prediction of doctor-diagnosed asthma, wheeze (Rint only) and shortness of breath (Rint only). Due to the low prevalence of disease in this general population sample, the positive predictive values of both individual tests were low. However, the positive predictive value of the combination of increased Rint (cut-off 1.05 kPa.L-1.second) and exhaled NO (cut-off 10 ppb) was 38% for the prediction of doctor-diagnosed asthma, with a negative predictive value of 97%. Combinations of Rint or exhaled NO with atopy of the child showed similar results. *Conclusions:* The combination of Rint, exhaled NO and atopy may be useful to identify high-risk children, for monitoring the course of their symptoms and to facilitate early detection of asthma.

380 LONG-TERM UNEXPLAINED PHYSICAL SYMPTOMS OF FIREFIGHTERS AND POLICE OFFICERS AFTER AN AIR DISASTER

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: In 1992 a cargo aircraft crashed into apartment buildings in Amsterdam, killing 43 people, and destroying 266 apartments. An extensive, troublesome aftermath followed with rumours on toxic exposures and health consequences. *Objectives:* We studied the long-term physical health effects of occupational exposure to this disaster among professional assistance workers. *Design and Methods:* In this historical cohort study we compared the 334 firefighters and 834 police officers who were occupationally exposed to this disaster (i.e. who reported one or more disaster-related tasks) with their nonexposed colleagues (n = 194, and n = 634, respectively), using regression models adjusted for background characteristics. Data collection took place from January 2000 to March 2002, and included various clinical blood and urine parameters (including blood count and kidney function), and questionnaire data on occupational exposure, physical symptoms, and background characteristics. The overall response rate was 71%. *Results:* Exposed workers reported various physical symptoms (including fatigue, skin and musculoskeletal symptoms) significantly more often than their nonexposed colleagues. In contrast, no consistent significant differences between exposed and nonexposed workers were found regarding clinical blood and urine parameters. *Discussion and Conclusion:* This epidemiological study demonstrates that professional assistance workers involved in a disaster are at risk for long-term unexplained physical symptoms.

382 ASSOCIATIONS BETWEEN HEALTH AND POSTOPERATIVE QUALITY OF LIFE AMONG COSMETIC BREAST SURGERY PATIENTS IN FINLAND

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background and Objectives: Recent studies indicate that women with cosmetic breast implants have significantly increased risk of suicide. Reasons for elevated risk are not known. It is suggested that women with cosmetic breast implants differ in their characteristics and have more mental problems than women of general population. Aim of this study was to find out possible associations between physical or mental health and postoperative quality of life

among Finnish women with cosmetic breast implants. *Design and Methods:* Information was collected from patient records of 685 women and structured questionnaires mailed to 470 women of the same cohort. Data was analysed by using Pearson chi square testing and logistic regression modelling. *Results:* Although effects of implantation on postoperative quality of life in different areas were mainly reported as positive or neutral, 12 % of the women reported decreased state of health. Postoperative dissatisfaction and decreased quality of life were significantly associated with diagnoses of depression (p = 0.01) and local complication called capsular contracture (p < 0.001). *Conclusion:* Our results are consistent with previous results finding most of the cosmetic breast surgery patients satisfied after implantation. However, this study brings new information on associations between depression, capsular contracture and decreased quality of life.

383 EFFECT OF A MULTIDISCIPLINARY ONCOLOGICAL REHABILITATION PROGRAM ON QUALITY OF LIFE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Cancer and its treatments often produce significant persistent morbidities that reduce quality of life (QoL) in cancer survivors. Research indicates that both, physical exercise and psycho-education might enhance QoL. Therefore, we developed a 12-week multidisciplinary rehabilitation program that combines physical training with psycho-education. The aim of the present multicenter study is to determine the effect of multidisciplinary rehabilitation on QoL as compared to no treatment and, additionally, to physical training alone. Furthermore, we will explore which variables are related to successful outcome (socio-demographic, disease related, physiological, psychological and environmental characteristics). 225 participants are needed to detect a medium effect. At present, 170 cancer survivors are randomised to either the multidisciplinary or physical rehabilitation program or a 6-month waiting list control group. Outcome assessment will take place before, halfway, directly after, 3 and 9 months following the intervention by means of questionnaires. Physical activity will be measured before, halfway and directly after rehabilitation using maximal and submaximal cycle ergometer testing and muscle strength measurement. Effectiveness of multidisciplinary rehabilitation will be determined by analysing changes between groups from baseline to post-intervention using multiple linear and logistic regression. Positive evaluation of multidisciplinary rehabilitation may lead to implementation in usual care.

385 THE EFFECT OF CONTINUOUS LOOP RECORDING ON QUALITY OF LIFE AND ANXIETY IN PATIENTS PRESENTING WITH PALPITATIONS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Palpitations generate feelings of anxiety and decrease quality of life (QoL) due to fear of a cardiac abnormality.

Continuous event recorders (CER) have proven to be successful in diagnosing causes of palpitations but may affect patient QoL and increase anxiety. **Objectives:** Determine QoL and anxiety in patients presenting with palpitations, and to evaluate the burden of the CER on QoL and anxiety in patients presenting to the general practitioner. **Methods:** Randomized clinical trial in General Practice. The Short Form-36 (SF-36) and State-Trait Anxiety Inventory (STAI) were administered at study inclusion, 6-weeks and 6-months. **Results:** At baseline, patients with palpitations (n = 226) reported lower QoL and more anxiety than a healthy population for both males and females. There were no differences between the CER arm and usual GP care at 6-weeks. At 6-months the usual care group (n = 92) showed minimal QoL improvement and less anxiety compared to the CER group (n = 103). Type of diagnosis did not account for any of these reported differences. **Conclusion:** Anxiety decreases and QoL increases in both groups at 6-weeks and 6-month follow-up. Hence it is a safe and effective diagnostic tool, which is applicable for all patients with palpitations in the general practice.

386 ROSUVASTATIN NOT ASSOCIATED WITH INCREASES IN RHABDOMYOLYSIS, MYOPATHY, ACUTE RENAL FAILURE OR HEPATIC IMPAIRMENT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Clinical benefits of statin therapy are accepted, but their safety profiles have been under scrutiny, particularly for the most recently introduced statin, rosuvastatin, relating to serious adverse events involving muscle, kidney and liver. **Objective:** To study the association between statin use and the incidence of hospitalizations for rhabdomyolysis, myopathy, acute renal failure and hepatic impairment (outcome events) in real life. **Methods:** In 2003 and 2004, 10,147 incident rosuvastatin users, 37,396 incident other statin users and 99,935 patients without statin prescriptions from the PHARMO database of >2 million Dutch residents were included in a retrospective cohort study. Potential cases of hospitalization for myopathy, rhabdomyolysis, acute renal failure or hepatic impairment were identified using ICD-9-CM codes and validated using hospital records. **Results:** There were 26 validated outcome events in the three cohorts including one case each of myopathy (other statin group) and rhabdomyolysis (non-treated group). There were no significant differences in the incidence of outcome events between rosuvastatin and other statin users. **Discussion:** This study indicated that the number of outcome events is less than 1 per 3000 person years. Rosuvastatin does not lead to an increased incidence of rhabdomyolysis, myopathy, acute renal failure and hepatic impairment compared to other statins.

387 INSULIN RESISTANCE AS THE RISK FACTOR OF CORONARY ARTERY DISEASE IN MIDDLE AGED WOMEN

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

The aim: The aim of the study was to assess the influence of insulin resistance (IR) on the Coronary Artery Disease (CAD) occurrence in middle aged women with normal glucose tolerance (NGT) Material and **Methods:** In 1998–2000 year 986 women aged 35–55,

participants of the Polish Multicenter Study on Diabetes Epidemiology were examined. Anthropometric, biochemical (fasting lipids, fasting and after glucose load plasma glucose and insulin) and blood pressure determinations were performed. IR was defined as the Matsuda Index (IRMatsuda) below the lower quartile of the IRMatsuda distribution in NGT population. The questionnaire examination of the lifestyle, present and past diseases was performed. **Results:** IR was observed in 31 % of all examined women and in 17.9% with NGT. CAD was diagnosed in 10, 3% of all examined women and in 6,9% of those with NGT. The Relative Risk of CAD related to IR in NGT and normotensive women was 2,90 (95% CI:1,07–7,88) (p<0.05). Regular menstruation was observed in 41,1% of CAD women. IRMatsuda was not different for CAD menstruating and non menstruating women (respectively 9,31±1,01 and 9,70±1,68). **Conclusion:** In middle aged, normotensive and normal glucose tolerant women IR seems to be an important risk factor of CAD

389 ATTITUDES AND CURRENT PRACTICE OF GENERAL PRACTITIONERS IN USING STANDARDISED RISK SCORES

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In Germany, primary prevention at population level is provided by general practitioners (GP). Little is known about GPs' strategies to identify patients at high risk for vascular diseases using standardised risk scores. **Objectives:** We studied GP attitudes and current practice in using risk scores. **Methods:** A cross-sectional survey was conducted among 744 GPs in North Rhine-Westphalia, Germany, using mailed self-administered questionnaires on attitudes and current practice in identification of patients at high risk for vascular diseases. **Results:** In 2005, 350 GPs participated in the study. 69.0% of GPs stated to know the Framingham-score, 81.3% the Procama-score and 29.4% the SCORE-score. 47.4% of GPs reported regular use of standardised risk scores to identify patients at high risk for vascular diseases, most frequently Procama-score (79.7%), followed by SCORE-score (6.8%) and Framingham-score (6.8%). Main reasons for not using standardised risk scores were assumed rigid assessment of individual patients' risk profile (51.9%), time-consuming appliance (35.2%) and higher confidence in own work experience (17.3%). **Conclusion:** Use of standardised risk scores to identify patients at high risk for vascular diseases is common among GPs in Germany. However, more educational work might be useful to strengthen GPs' belief in the flexible appliance of standardised risk scores in medical practice.

391 ANTIEPILEPTIC DRUG USE AND BIRTH RATE AMONG PATIENTS WITH EPILEPSY: REGISTER-BASED COHORT STUDY IN FINLAND - 1996–2000

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Epilepsy itself, but also antiepileptic drug (AED) use may affect reproductive endocrine function. Birth rate is lower

among epilepsy patients than in general population, but effects of specific antiepileptic drugs on birth rate are not well known. **Objectives:** To estimate birth rate in epilepsy patients on AED treatment or without AEDs and in a population-based reference cohort without epilepsy. **Design and Methods:** Patients (N = 20, 101) with reimbursement for AEDs for the first time between 1985 and 1994 and information on their AED use, were identified from the databases of Social Insurance Institution of Finland. Reference cohort without epilepsy (N = 29,828) and information on live births were identified from the Finnish Population Register Centre. The analyses were performed using Poisson regression modelling. **Results:** Birth rate was decreased in epilepsy patients in relation to reference cohort without epilepsy in both genders regardless of AED use. In relation to untreated patients, women on any of the AEDs had non-significantly lower birth rates. Among men, birth rate was decreased in men on oxcarbazepine (RR = 0.52, 95% CI = 0.32,0.84), but was not clearly lower among those on carbamazepine (RR = 0.86,95% CI = 0.66,1.13) or valproate (RR = 0.78,95% CI = 0.55,1.11) when compared to untreated patients. **Conclusion:** Our results suggest that birth rate is decreased among epilepsy patients on AEDs, more so in men.

392 HEMOCHROMATOSIS FAMILY STUDY (HEFAS): HOMOZYGOUS C282Y-HFE-MUTATED OLD MEN HAVE HIGHEST RISK FOR IRON OVERLOAD

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Hereditary hemochromatosis (HH), characterised by excessive iron absorption, subsequent iron storage and progressive clinical features, can when diagnosed at an early stage be successfully treated. High prevalence of the C282Y-mutation on the HFE-gene in the HH patient population may motivate genetic screening. **Objectives:** In first-degree relatives of C282Y-homozygotes we studied the gender and age-related biochemical penetrance of HFE-genotype to define a high-risk population eligible for screening. **Design and Methods:** One-thousand-six first-degree family members of 280 probands with clinically overt HFE-related HH from five medical centres in the Netherlands were approached. Data on levels of serum iron parameters and HFE-genotype were collected. Elevation of serum ferritin was defined using the centre-specific normal-values by age and gender. **Results:** Among the 610 participating relatives, highest serum iron parameters were found in male C282Y-homozygous siblings aged >55 years: 97% had elevated levels of serum ferritin. Generally, male gender and increased age are related with higher iron values. **Discussion and Conclusion:** Genetic screening for HH is most relevant in male and elderly first-degree relatives of patients with clinically overt HFE-related HH, enabling regular investigations of iron parameters in homozygous individuals.

395 EVALUATION OF HANDWASHING COMPLIANCE IN A TERTIARI HOSPITAL

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Nosocomial infection causes increased hospital morbidity and mortality rates. Although handwashing is known to be the most important action in its prevention, adherence of health

care workers to recommended hand hygiene procedures is extremely poor. **Objective:** Evaluation of compliance of hand hygiene recommendations in health care workers of a tertiary hospital in Barcelona after a course on hand hygiene was given to all nurses in the hospital during the previous year. **Methods:** By means of non-declared observation, compliance (handwashing or disinfecting, not solely glove exchange) of recommendations given by the Center for Disease Control related to opportunities for hand hygiene was registered, in procedures of diverse risk level for infection, both in physicians and nurses. **Results:** In 1288 opportunities for hand hygiene carried out by 254 health care workers compliance of recommendations was 19.9%. Adherence differed between wards (68.9% in intensive care units, 17.8% in medical wards and 4.3% in surgical wards) and slightly between health care workers (21.4% in physicians, 19.2% in nurses). **Discussion:** In conclusion, after one year of an intervention on education, adherence to hand hygiene recommendations is very low. These results enhance the need of reconsidering the type of interventions implemented.

396 HEMOCHROMATOSIS FAMILY STUDY (HEFAS): HOMOZYGOUS C282Y-HFE-MUTATED SIBLINGS HAVE HIGHEST RISK FOR CLINICAL FEATURES

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Hereditary hemochromatosis (HH) is a genetic iron metabolism disorder with clinical features such as fatigue, arthralgia, and liver cirrhosis. Homozygosity for the C282Y mutation in the HFE-gene can be found in more than 80% of HH patients. However, homozygous individuals in the general population feature a low clinical penetrance. **Objectives:** In first-degree relatives of patients with clinically overt HFE-related HH we studied gender and age-related clinical penetrance of HFE-genotype to define a high-risk-group eligible for screening. **Design and Methods:** One-thousand-six first-degree relatives of 280 probands with clinically overt HFE-related HH were approached. Clinical features were assessed using a questionnaire. Data on HFE-genotype were collected. **Results:** Among 122 homozygous first-degree relatives, the relation between genotype and clinical features was most prominent in siblings; 54.7% reported to be diagnosed with arthralgia, compared to 70.8% of index patients and 30.5% of siblings with other genotypes. Among this homozygous group, 84.2% of postmenopausal females had arthralgia, whereas among males aged <55 years liver disease was most prominent (19.1% compared to 3.0% of siblings with other genotypes). **Discussion and Conclusion:** Genetic screening for HH is most relevant in male and postmenopausal female siblings of probands with clinically overt HFE-related HH.

397 QUALITY OF LIFE IN DIABETES PATIENTS IS LOWER DUE TO MUSCULOSKELETAL DISEASES THAN OTHER COMORBIDITIES

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Diabetes mellitus (DM) is associated with quality of life (QoL) in combination with comorbidities. Unknown is which

type of comorbidity affects QoL most. *Objectives:* We studied whether QoL differed in subjects with DM with and without comorbidities. In addition, we determined differences in type of comorbidity. *Design and Methods:* Cross-sectional data of 193 DM patients, participants of a population-based Dutch Monitoring Project on Risk Factors for Chronic Disease (MORGEN) were analyzed. QoL was measured by the Short Form 36. We compared the means of 8 subdimensions for DM patients with one comorbidity (cardiovascular diseases (CVD), musculoskeletal diseases (MSD) and asthma/COPD) to DM patients without this comorbidity, by regression analyses adjusted for age and sex. *Results:* The prevalences of CVD, MSD and asthma/COPD were 17.1%, 26.4%, and 46.6%. All comorbidities were associated with lower QoL, especially for physical functioning. The mean difference (95% CI) was 13.0 (-22.3; -3.7) for CVD, -15.9, (-22.7; -9.1) for asthma / COPD and -15.9, (-24.0; -7.8) for MSD. MSD has the strongest effect on QoL for all subdimensions in particular for bodily pain -27.9 (-35.7; -20.1). *Conclusions:* In conclusion, DM patients with comorbidity had a lower QoL than DM patients without comorbidity, which is most pronounced for MSD.

398 INCIDENCE AND PREVALENCE OF UPPER-EXTREMITY MUSCULOSKELETAL DISORDERS. A SYSTEMATIC APPRAISAL OF THE LITERATURE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The extent or increase of UEDs is suggested repeatedly, but never before the scientific literature was systematically studied. *Objectives:* A systematic appraisal of the worldwide incidence and prevalence rates of upper extremity disorders (UEDs) available in scientific literature was executed to gauge the range of these estimates in various countries and to determine whether the rates are increasing in time. *Design and Methods:* Studies that recruited at least 500 people, collected data by using questionnaires, interviews and/or physical examinations, and reported incidence or prevalence rates of the whole upper-extremity including neck, were included. *Results:* No studies were found with regard to the incidence of UEDs and 13 studies that reported prevalence rates of UEDs were included. The point prevalence ranged from 1.6–53%; the 12-months prevalence ranged from 2.3–41%. One study reported on the lifetime prevalence (29%). We did not find evidence of a clear increasing or decreasing pattern over time. It was not possible to pool the data, because the definitions used for UEDs differed enormously. *Conclusions:* There are substantial differences in reported prevalence rates on UEDs. Main reason for this is the absence of a universally accepted way of labelling or defining UEDs.

399 THE INCREASED BREAST CANCER INCIDENCE IN THE NETHERLANDS SINCE 1989 CANNOT BE EXPLAINED BY CHANGES IN RISK FACTORS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The absolute number of women diagnosed with breast cancer increased from 7,899 in 1989 to 11,687 in 2003 in the Netherlands. Likewise, the age standardized rate increased from 100.1 to 120.7 per 100,000 women. Besides the current screening programme, changes in risk profile could be a reason for the increased incidence. *Objective:* We studied the changes in breast

cancer risk factors for women in Nijmegen. *Methods:* In the regional screening programme in Nijmegen, almost 20,000 women aged 35–64 years filled in a questionnaire about risk factors in 1975–1976. Similar questions were applied in the Nijmegen Biomedical Study in 2002, where 2345 women of 35–64 year participated. The median age in both studies was 50 years. *Results:* The frequency of a first-degree relative with breast cancer was 9.9% and 11.1% in 1975 and 2002, respectively. None of the other risk factors, as the age of women at 1st birth (26.3% respectively 27.1%), nulliparity (19.2% resp. 20.6%), age at menarche (13.1% resp. 13.2%), age at menopause (47.2% resp. 49.2%) and obesity (11.9% resp. 11.4%), changed in time. *Conclusion:* The distribution of risk factors hardly changed, and is unlikely to explain the rise in breast cancer incidence from 1989 onwards.

400 EPIDEMIOLOGICAL USE OF ELECTRONIC CLINICAL HISTORIES UNDER ACTUAL PRACTICE CONDITIONS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: A single electronic clinical history system has been developed in the BAC (Basque Autonomous Community) for general use for all health centres, thus making it possible to collect information online on acute health problems as well as chronic ailments. *Method:* The prevalence of diabetes, high blood pressure and COPD (chronic obstructive pulmonary disease) was estimated using ICD-9-CM diagnosis performed by primary care physicians. An estimate was also made of the prevalence of cholesterolemia based on the results of analyses requested by physicians. *Results:* In 2004, 441,097 patients (out of a total population of 2,082,587) were assessed for serum cholesterol levels. Based on this highly representative sample, it was estimated that 13.3% had serum cholesterol levels above 250 mg/dl. The prevalence of diabetes mellitus in people over the age of 29 was 6.4%. The prevalence of high blood pressure in people over 13 was 25%. *Discussion:* The Primary Care database makes it possible to access information on problems related to chronic illnesses. Knowing the prevalence of diabetes patients enables doctors to analyse all aspects related to services used by the diabetic population. It also makes it possible to monitor analytical data in real time and evaluate health service outcomes.

401 GENETIC POLYMORPHISMS IN THE RAS AND RISK OF DIABETES ASSOCIATED WITH THE USE OF ACE INHIBITORS: THE DOETINCHEM STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: ACE-inhibitors (ACEI) reduce the incidence of diabetes compared to alternative antihypertensive drugs. We assessed whether the association between ACEI-use and incident diabetes is modified by genetic polymorphisms in the Renin-Angiotensin-System. *Methods:* Nested case-control study among 1152 Dutch hypertensive patients from the Doetinchem cohort. Pharmacy records were used to assess newly treated diabetes (cases). Patients were genotyped for angiotensin-converting-enzyme (ACE I/D), angiotensinogen (AGT M235T), and Angiotensin 2 type 1 receptor (AT1R A1166C). Self-administered questionnaires and physical

examinations were used to assess risk factors for diabetes. Cases (N = 101) were matched on age and sex to controls (N = 709) who were not treated with antidiabetic drugs. Logistic regression was used to calculate odds ratios (OR). *Results:* The OR of incident diabetes for ACEI-use versus non-ACEI use was 3.63 (95%CI:1.93–6.88). For ACE DD homozygotes the OR was 0.57 (95%CI:0.07–4.47) and for ACE-I allele carriers 5.72 (95%CI:2.77–11.81). The interaction OR was 10.05 (95%CI:1.13–89.38). The AGT and AT1R genotypes did not modify the association between ACEI use and diabetes. *Conclusion:* The ACE I/D polymorphism may modify the risk of diabetes associated with ACEI-use

403 THE INTAKE OF FOUR DIETARY LIGNANS AND CAUSE SPECIFIC AND ALL-CAUSE MORTALITY IN THE ZUTPHEN ELDERLY STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Lignans have antioxidant and estrogen-like activity, and may therefore lower cardiovascular and cancer risk. *Objective:* We have investigated whether intake of four plant lignans (lariciresinol, pinoresinol, secoisolariciresinol, matairesinol) was inversely associated with coronary heart disease (CHD), cardiovascular diseases (CVD), cancer, and all-cause mortality. *Design:* The Zutphen Elderly Study is a prospective cohort study in which 570 men aged 64–84y were followed for 15 years. Lignan intake was estimated using a recently developed database, and related to mortality using Cox proportional hazards analysis. *Results:* Median total lignan intake in 1985 was 977µg/d. Beverages such as tea and wine, vegetables, bread, and fruits were the major lignan sources. Total lignan intake was not related to mortality. However, matairesinol was inversely associated with CHD, CVD, cancer, and all-cause mortality. Multivariate adjusted RRs (95% CI) per SD increase in intake were 0.72 (0.53–0.98) for CHD, 0.83 (0.69–1.00) for CVD, 0.81 (0.65–1.00) for cancer, and 0.86 (0.76–0.97) for all-cause mortality. *Conclusions:* Total lignan intake was not associated with mortality. The intake of matairesinol was inversely associated with mortality from CHD, CVD, cancer, and all-causes. We can not rule out that this is due to an associated factor, such as wine consumption.

404 NEIGHBOURHOOD CHARACTERISTICS HAVE AN EFFECT ON THE PHYSICAL BUT NOT ON THE MENTAL HEALTH OF MUNICIPAL EMPLOYEES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Despite the drastic increase in the amount of research into neighbourhood-level contextual effects on health, studies contrasting these effects between different domains of health within one contextual setting are strikingly sparse. In this study we use multilevel logistic regression models to estimate the existence of neighbourhood-level variations of physical health functioning (PCS) and mental well-being (GHQ) in the Helsinki metropolitan area and assess the causes of these differences. The individual-level data are based on a health-survey of 40–60 year old employees of the City of Helsinki (N = 4313, response rate 68%). The metropolitan area is divided into 53 neighbourhoods, which are characterised using a number of area-level indicators (e.g. unemployment rate). Our

results show moderate but systematic negative effect of indicators of neighbourhood deprivation on physical functioning, whereas for mental health the effect is absent. These effects were strongest for proportion of manual workers; odds ratio for poor physical functioning was 0.8 for respondents living in areas with low proportion of manual workers. Part of this effect was mediated by differences in health behaviour. Analyses on cross-level interactions show that individual-level socioeconomic differences in physical health are smallest in most deprived areas, somewhat contradicting the results of earlier studies.

407 CHANGE IN PRIORITY SCORE (NEED FOR SURGERY) OF PATIENTS WAITING FOR KNEE ARTHROPLASTY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Priority Systems were developed to order patients on waiting list (WL) for knee arthroplasty according to need for surgery. *Objective:* To evaluate the change in priority score (PS) of patients waiting for knee arthroplasty in a Spanish public hospital (Barcelona). *Methods:* PS included clinical, functional and social criteria, ranking from 0 to 100, higher scores meaning greater need. PS of 180 patients was evaluated by a physician at inclusion in the WL, and at the preoperative visit. A linear model for the change in PS adjusted by time between measurements was calculated. *Results:* The mean time between measurements was 15.2 months (Standard Deviation 7.4). The mean PS at inclusion in WL and at the preoperative visit were 43.2 (95% CI 40.7; 45.7) and 47.4 (95% CI 44.7; 50.1), respectively. The mean difference between measurements was 4.2 (p = 0.002). PS increased in 55.6% of patients of which, limitation of daily-life (38%), pain (34%), and severity of the pathology (33%) were the most affected criteria. No relationship was found between change in PS and time between measurements. *Conclusions:* A small increase in PS is added to the delay in the benefits of intervention for a portion of patients on the WL.

409 PROPORTION OF SECOND-EYE CATARACT SURGERY IN THE PUBLIC HEALTH SYSTEM IN CATALONIA (SPAIN)

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The second-eye cataract surgery is beneficial, nevertheless, there is a considerable proportion of unmet needs. *Objective:* To estimate the proportion of second-eye cataract surgery in the public health system of Catalonia, and explore differences in utilisation by patients' gender, age, and region of residence. *Methods:* A total of 154,215 senile cataract surgeries performed between 1999 and 2002 were included. Proportions observed were adjusted through independent logarithmic regression models for each study factor. *Results:* The proportion of second-eye surgery showed an increasing trend (R2 59.4%) from 23.8% (95% CI 21.6; 26.1) in November 2000 to 32.5% (95% CI 31.4; 33.6) in December 2002, and its projection to 5 years was 35.7% (95% CI 33.6; 37.7). The proportion of second-eye surgery was 2% (95% CI 0.9; 3.1) greater in women than in men. Patients 80 years or older had a lowest proportion (20.7%; 95% IC 20.2; 21.3), which nevertheless increased during the period, unlike that of patients aged less than 60 years. Differences among regions were moderate and decreased throughout the period. *Conclusions:* If the observed trends persist, there will be a substantial proportion of unmet need for bilateral

surgery. We predict greater use of second-eye surgery by older patients.

410 LONG TERM PERSISTENT USE OF BISPHOSPHONATES REDUCES RISK OF OSTEOPOROTIC FRACTURES IN DAILY PRACTICE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Persistence with bisphosphonates is suboptimal which could limit prevention of fractures in daily practice. *Objectives:* To investigate the effect of long term persistent bisphosphonate usage on the risk of osteoporotic fractures. *Methods:* The PHARMO database, including drug-dispensing and hospital discharge records for > two million subjects in the Netherlands, was used to identify new female bisphosphonate users > 50 years from Jan '96 - Jun '03. Persistence with bisphosphonates was determined using the method of Catalan. A nested matched case-control study was performed. Cases had a first hospitalization for an osteoporotic fracture (index-date). Controls were matched 10:1 to cases on year of inclusion and received a random index-date. The association with fracture-risk was assessed for one and two year persistent bisphosphonate use prior to the index-date. Analyses were adjusted for differences in patient characteristics. *Results:* 14,760 bisphosphonate users were identified and 541 had a hospitalization for osteoporotic fracture during follow-up. One year persistent bisphosphonate use resulted in a 26% lower fracture rate (OR 0.74; 95% CI 0.57-0.95) whereas two year persistent use resulted in a 32% lower rate (OR 0.68; 95% CI 0.47-0.96). *Conclusion and Discussion:* These results emphasize the importance of persistent bisphosphonate usage to obtain maximal protective effect of treatment.

411 ASPECTS OF REPRESENTATIVENESS OF VOLUNTARY BLOOD DONORS; HERITABILITY AS AN EXAMPLE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Healthy blood donors are often suggested and/or used as reference category in comparative studies or to define normal values. *Objectives:* Explore assumed representativeness by comparing the heritability (h^2) of traits estimated among donor mono and dizygote twins versus published estimates obtained from open populations. *Methods:* As part of a 'Donors Ins & Outs' project among 128.685 donors in our region with approximately 400 twins donors allowed us to estimate heritability for traits measured at routine blood donations. Mono- and di-zygote donor-twins were traced by probabilistic linkage for identical gender, birthdays, ABO-Rhesus bloodgroups and zip-code. *Results:* For Haemoglobin donor h^2 was 0.20 versus 0.84 in the literature while for Systole and Diastole h^2 were 0.61 and 0.74 versus (0.44-0.57) and (0.32-0.50) as published in the literature. *Discussion:* The heritability estimates for haemoglobin are substantially lower than for Systole/diastole in comparison to published h^2 's. Since h^2 reflects aspect of explained variance, the added variance to be explained due to the effects of regular blood donations seems substantial in its effects on estimates of h^2 . *Conclusion:* Blood donors may only be represen-

tative for open populations of aspects that are not modified by blood donations.

412 MOLECULAR EPIDEMIOLOGY OF HEPATITIS B IN THE NETHERLANDS; A LOW ENDEMIC COUNTRY WITH A SELECTIVE VACCINATION PROGRAM

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: In 1997 the WHO recommended all countries to add hepatitis B (HBV) vaccination to their national immunization programs. The Netherlands is a low HBV endemic country and therefore adopted a vaccination policy targeted towards high-risk groups. *Methods:* During 2004, epidemiological data and blood samples were collected from all reported patients with an acute HBV infection. A fragment of the S-gene was sequenced and phylogenetically analysed to clarify transmission patterns between risk groups. *Results:* Of 295 HBV cases reported, 60% was infected through sexual contact (34% homo-/bisexual, 23% heterosexual). For 158 patients samples were available for genotyping. Phylogenetic analysis identified 6 genotypes: A(64%), B(3%), C(3%), D(21%), E(5%) and F(4%). Of men who have sex with men (MSM), 86% were infected with genotype A. Among heterosexuals, all genotypes were found. In many cases, genotypes B-F were direct or indirect related to countries abroad. Only 1 injecting drug user was found (genotype A). *Conclusion:* Genotype A is predominant in the Netherlands, including most of the MSM. Migrant HBV carriers play an important role in the Dutch HBV epidemic. Genotyping provides insight into the spread of HBV among high-risk groups. This information will be used to evaluate the vaccination policy in the Netherlands.

414 LIFESTYLES OF PHYSICIANS: PILOT STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The study of physicians' lifestyles was a pilot survey, preceding the research on the health status of doctors. *Objectives:* The goal of this study was to test the methodology and evaluate the selected elements of lifestyles of physicians. *Design and Methods:* In 2004 the anonymous questionnaire study was carried in a group of 170 physicians, taking part in various educational programmes. The chosen elements of lifestyle behaviours were analysed. *Results:* All 170 respondents answered the questionnaire. Most of them were females (72%) and the medium age was 35 years. Most of respondents (79%) were employed in hospitals. Most of physicians (87%) were satisfied with their work. Their average daily time of work was almost 10 hours and average weekly time of active rest 2,5 hours. Most of respondents (65%) assessed their nutritional behaviours as inappropriate. Medium value of BMI in this group was 23 and 78% of physicians have normal value of BMI. 10% of respondents smoke cigarettes. Most of physicians declared that family (85%) and friends (62%) support them in difficult situations. *Conclusion and Discussion:* The result in the pilot group showed rather mixed picture of health behaviours in the pilot study group of doctors.

416 BODY MASS INDEX (BMI) AND HEALTH RELATED QUALITY OF LIFE (HRQOL) IN WOMEN FROM A RURAL AREA IN GALICIA (SPAIN)

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Excess weight might affect the perception of both physical and mental health in women. **Objective:** To examine the relationship between body mass index (BMI) and HRQoL in women aged 18- to 60-year-old in a rural zone of Galicia. **Design and Methods:** Population-based cross-sectional study covering 1321 women, personally interviewed, from 14 villages. HRQoL was assessed with SF-36 questionnaire, through personal interviews. Each scale of SF-36 was dichotomised in suboptimal or optimal HRQoL using previously defined cut-offs. Odds ratios (OR) obtained from logistic regression summarize the relationship of BMI with each scale, adjusting for sociodemographic variables, sedentary leisure-time, number of chronic diseases and sleeping hours. **Results:** A 14.7% of women were obese (BMI = 30 kg/m²) and 31.2% overweight (BMI 25–29.9 kg/m²). Frequency of suboptimal physical function was higher among overweight women (adjusted OR:1.76; 95% CI:1.27–2.45) and obesity (adjusted OR:2.10;95% CI:1.40–3.16). Furthermore, obese women had higher frequency of suboptimal scores on the general health scale (adjusted OR:1.64; 95% CI:1.10–2.44). No differences were observed regarding mental health scores among women with different BMI categories. **Conclusion:** In women from rural villages, overweight is associated with worse HRQoL in physical function and general health. **Discussion:** The obesity epidemic in our society is having an impact in HRQoL among women. Supported by: ISCIII and RCEP-FIS-C03-09

420 COST-EFFECTIVENESS ANALYSIS OF PNEUMOCOCCAL VACCINATION FOR THE GENERAL POPULATION OVER 65 IN LAZIO REGION (ITALY)

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Pneumococcal vaccination among elderly is recommended in several Western countries. **Objectives:** We estimate the cost-effectiveness of a hypothetical vaccination campaign among the 65+ general population in Lazio region (Italy). **Methods:** A cohort was followed during a 5 years timeframe. We estimated the incidence of invasive pneumococcal disease, in absence of vaccine, based on actual surveillance and hospital data. The avoided deaths and cases have been estimated from literature according to trial results. Health expenditures included: costs of vaccine program, inpatient and some outpatient costs. Cost-effectiveness was expressed as net healthcare costs per episode averted and life-year gained (LYG) and was estimated at baseline and in deterministic and stochastic sensitivity analyses. All parameters were age-specific and varied according to literature data. **Results:** At baseline net costs per event averted and LYG at 2001 prices were, respectively, €34,681 (95% CI: €28,699–€42,929) and 23,361 (95% CI: €16,419–€38,297). In the sensitivity analysis, bacteraemic pneumonia incidence and vaccine effectiveness increased the net cost per LYG by 131% and 218% in the worst-case scenario, and decreased it to €4,249 in the best-case. **Conclusions:** The intervention was not cost saving. The uncertainties concerning invasive pneumococcal

disease incidence and vaccine effectiveness make the cost-effectiveness estimates instable.

421 ATLAS OF MUNICIPAL CANCER MORTALITY IN SPAIN 1989–1998

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Spatial data analysis can detect possible sources of heterogeneity in spatial distribution of incidence and mortality of diseases. Moreover small area studies have greater capacity to detect local effects linked to environmental exposures. **Objective:** To estimate the patterns of cancer mortality at municipal level in Spain using smoothing techniques in a single spatial model. **Design and Methods:** Cases were deaths due to cancer, registered at a municipal level nation-wide for the period 1989–1998. Expected cases for each town were calculated using overall Spanish mortality rates and standard mortality ratios were computed. To plot the maps, smoothed municipal relative risks were calculated using Besag York and Mollié model and Markov chain Monte Carlo simulation methods. As an example maps for stomach and lung cancer neoplasms are shown. **Results:** It was possible to obtain the posterior distribution of relative risk by a single spatial model including 8077 towns and the 46398 adjacencies. Maps showed the singular patterns for both cancer locations. **Conclusion:** The municipal atlas allows to avoid edge local effects, improving the detection of spatial patterns. **Discussion:** Bayesian modelling is a very efficient way to detect spatial heterogeneity by cancer and other causes of death. Supported by: ISCIII-EPY1176/02 and RCEP-FIS-C03/09

423 SOCIOECONOMIC STATUS AND MORTALITY AFTER MAJOR SURGICAL PROCEDURES IN FOUR ITALIAN CITIES

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Little is known about the impact of socioeconomic status (SES) on outcomes of surgical care. **Objectives:** We estimated the association between SES and outcomes of selected complex elective surgical procedures. **Methods:** Using Hospital Discharge Registries (ICD-IX-CM codes) of Milan, Bologna, Turin and Rome we identified patients undergoing cardiovascular operations (coronary artery bypass grafting, valve replacement, carotid endarterectomy, repair of unruptured thoracic aorta aneurysm) (n = 20,194) and cancer resections (pancreatectomy, oesophagectomy, liver resection, pneumonectomy, pelvic visceration) (n = 2,300) in four Italian cities, 1997–2000. An area-based income index was calculated. Post-operative mortality (in-hospital or within 30 days) was the outcome. Logistic regression adjusted for gender, age, residence, comorbidities, concurrent and previous surgeries. **Results:** High income patients were older and had fewer comorbidities. Mortality varied by surgery type (CABG 4.1%, valve 7.5%, endarterectomy 1.2%, aorta aneurysm 10.2%, cancer 6.7%). Low income patients were more likely to die after CABG (OR = 1.89, 95%CI 1.34–2.68, IV vs I level; p-trend 0.007) and valve replacement (OR = 1.39, 95%CI 0.93–2.07; p-trend 0.042). No association was found for the

other interventions. *Conclusion:* Our study supports the hypothesis that SES influences mortality after major elective surgery; the magnitude of association varies across interventions. Different quality of surgical care cannot be excluded.

424 MELANOMA AFTER KIDNEY TRANSPLANTATION IN THE NORTHERN PART OF THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: An important medical problem of renal transplant patients who receive immunosuppression therapy, is the development of a malignancy during the long term follow-up. However, existing studies are not in agreement over whether patients who undergo renal transplantation have an increased risk of melanoma. *Objective:* The aim of this study was to determine the incidence of melanoma in renal transplantation patients in the northern part of The Netherlands. *Methods:* We linked a cohort of 1125 patients who received a renal transplantation in the University Medical Centre Groningen between 1989 and 2003 with the Cancer Registry of the Comprehensive Cancer Centre North-Netherlands, to identify all melanoma patients in this cohort. *Results:* Only 1 patient developed a melanoma following the renal transplantation; no significant increase in the risk of melanoma was found. *Conclusion:* Although several epidemiologic studies have shown that the risk of melanoma is increased in renal transplantation patients who receive immunosuppression therapy to prevent allograft rejection, this increased risk was not found in the present study. The lower level of immunosuppressive agents given in The Netherlands might be responsible for this low incidence.

425 CHOICE OF INCOME MEASURE INFLUENCES THE HEALTH-INCOME RELATION: COMPARISON OF SELF-REPORTS TO TAX REGISTRIES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Socio-economic health inequalities are usually studied for self-reported income, although the validity of self-reports is uncertain. *Objectives:* To compare self-reports of income by respondents to health surveys with their income according to tax registries, and determine to what extent choice of income measure influences the health-income relation. *Methods:* Around 22.000 respondents from the Dutch Permanent Survey on Living Conditions were linked to data from Dutch tax and housing registries of 2001. Both self-reported and registry-based measures of household equivalent income were calculated and divided into deciles. The association with less than good self-assessed health was studied using prevalence rates and odds ratios. *Results:* Around 18% of the respondents did not report their income. Around 27% reported an income 3 deciles lower or higher than the actual income value. The relation between income and health was influenced by choice of income measure. Larger health inequalities were observed with self-reports compared to registry-based measures. While a linear health-income relation was found using self-reported income, a curvilinear relation (with the worst health in the second lowest deciles) was observed for registry-based income. *Conclusion:* Choice of the income source has a major influence on the health-income relation that is found in inequality research.

427 LARGE INEQUALITIES IN SELF-REPORTED HEALTH WITHIN FOUR IMMIGRANT GROUPS IN THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: While many health problems are known to affect immigrant groups more than the native Dutch population, little is known about health differences within immigrant groups. *Objectives:* To determine the association between self assessed health and socioeconomic status (SES) among people of Turkish, Moroccan, Surinamese and Antillean origin. *Methods:* Data were obtained from a social survey held among immigrants 20–59 years in the Netherlands, with almost 2000 respondents per immigrant group. SES differences in the prevalence of “poor” self-assessed health were measured using Prevalence Rate Ratios estimated with regression techniques. *Results:* Within each immigrant group, poor health was much more common among those with low SES. The health of women was related to their educational level, occupational position, household income, financial situation and (to a lesser extent) their parents’ education. Similar relationships were observed for men, except that income was the strongest predictor of poor health. The health differences were about as large as those known for the native Dutch population. *Conclusion and Discussion:* Migrant groups are not homogenous. Also within these groups, low SES is related to poor general health. In order to identify subgroups where most health problems occur, different socioeconomic indicators should be used.

428 MICRONUCLEI IN CORD-BLOOD OF NEWBORNS IN MADRID: RELATION WITH MATERNAL TOBACCO CONSUMPTION, PERCEPTION OF POLLUTION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Genetic damage quantification can be considered as biomarker of exposure to genotoxic agents and as early-effect biomarker regarding cancer risk. *Objectives:* To assess genetic damage in newborns and its relationship with anthropometrical, sociodemographic variables, maternal tobacco consumption and pollution perception. *Design and Methods:* The BIO-MADRID study recruited 150 trios (mother/father/newborn) from 2 areas in Madrid to assess the impact of pollutants in humans. Parents answered a questionnaire about socio-economic characteristics, pregnancy, life-style and perception of pollution. Genetic damage in newborns were measured with the micronucleus(MN) test in peripheral lymphocytes Poisson regression models were fitted using MN frequency per 1000 binucleated cells as dependent variable. Explanatory variables included sex, parents age, tobacco, area and reported pollution level. *Results:* The mean frequency of MN was 3.94 per 1000 (range:2–10). No differences were found regarding area, sex and maternal tobacco consumption. MN frequency was higher in underweighted newborns and in those residing near heavy traffic roads. *Conclusion:* MN levels were similar to those reported in the literature. Newborns residing near big roads tended to have

higher values. *Discussion:* Pollution may have an impact even in uterus. Biomarkers of specific pollutants, when available, will allow us to further investigate this effect. Supported by: FIS-PI040777

430 TIME TRENDS IN SUICIDE MORTALITY BY METHOD IN GERMANY FROM 1991 TO 2002

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Suicides are the main fatal outcome of psychological diseases. Favourable time trends with decreasing suicide mortality were observed in men and women in most Western countries in the last decades. *Objective:* To assess time trends in suicide mortality by method. *Design and Methods:* From 1991 to 2002, a number of 146,709 suicides of subjects aged ≥ 15 years were recorded by the Federal Statistical Office of Germany. Based on these data, seven different suicide methods were defined. Poisson regression was used to estimate the age-adjusted annual percentage change (AAPC) of the number of each suicide method. *Results:* The suicide methods most frequently used in both sexes were hanging, strangling or suffocation (HSS) with 55.8% (in men) and 39.9% (in women), followed by self poisoning. Significant declines of the number of suicides were observed, in descending order, for self poisoning, drowning and HSS in both sexes (AAPC between -6.2 and -1.1). In contrast, methods using firearm discharges or stab with sharp object remained in roughly constant level during the observation period in both sexes. *Conclusion:* Time trends in suicide mortality were substantially dependent from the choice of method. *Discussion:* Further examinations are recommended concerning possible reasons for different suicidal methods.

431 INCREASING RATES OF OVERALL AND LAPAROSCOPIC CHOLECYSTECTOMY IN FRIULI VENEZIA GIULIA, NORTH EAST ITALY 1993–2004

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

In recent years minimally invasive surgery procedures underwent rapid diffusion and laparoscopic cholecystectomy has been among the first to be introduced. After its advent, increasing rates of overall and laparoscopic cholecystectomy have been observed in many countries. We evaluated the effect of the introduction of laparoscopic procedure on the rates of cholecystectomy in Friuli Venezia Giulia Region, performing a retrospective study. From regional hospitals discharge data we selected all records with procedure code of laparoscopic (ICD 9 CM: 5123) or open (5122) cholecystectomy and diagnosis of uncomplicated cholelithiasis (ICD 9 CM: 574.0; 574.1; 574.2) or cholecystitis (575.0; 575.1), in any field, from 1993 to 2004. In the 12 year study period, the number of overall cholecystectomies increased from 1546 to 2039 (+31.9%), mainly for the relevant increase of laparoscopic interventions from 3 procedures, (0.2% of overall cholecystectomies), to 1697 (83.2%). Rates of laparoscopic cholecystectomies increased from 0.1 to 46.8 per 100 admitted patients with diagnosis of cholelithiasis or cholecystitis. The introduction of laparoscopic cholecystectomies was followed not only by a shift towards laparoscopically performed interventions but also by an increase in overall cholecystectomies in Friuli Venezia Giulia Region.

432 LATERALISATION AND CANCER; REFLECTIONS ON INTRA-INDIVIDUAL DEVELOPMENTAL DIFFERENCES ON CANCER RISK

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Higher left sided breast cancer incidence and relations of handedness with (breast)cancer risk may reflect a neuro-developmental hypothesis that would predict opposite Left/right ratios for brain versus other tumors. *Design:* Exploration of Left/Right ratios and their 95% C.I. of tumors in paired 'genetically identical twin' organs registered between 1989–2003 in the National Netherlands Cancer Registry. *Results:* Male breast cancer L/R ratio 1.20 (1.05–1.37) Female 1.08 (1.06–1.09). Ovaries 0.97 (0.93–1.01), Testis 0.90 (0.86–0.95), Adrenals 1.17 (0.99–1.38) Brain 0.98 (0.94–1.03), Kidney 1.00 (0.97–1.03). *Discussion:*

1. Although above hypothesis is refuted the preponderance of lateralisation in endocrine tumors fits other (neuro)endocrine developmental trajectories.
2. The INTRA-male breast cancer L/R effect size challenges the importance of 'classical' reproductive factors which combined explain about the same INTER-individual variance in female breast cancers.
3. Parallels with L/R differences in (endocrine)organ size and/or body size fit other developmental hypothesis proposed previously by deWaard and Albanes on the role of available vulnerable target tissue and cancer risks. *Conclusion:* INTRA-individual developmental oriented epidemiology may be essentially different from 'classical' INTER-individual risk factor epidemiology.

433 WEB-BASED BIRTH COHORTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Several birth cohorts have been recently established. They permit investigating diseases using a life-course approach, but should be necessarily large and a need for collaborative studies has been claimed. *Objective:* To understand whether it is feasible to recruit a birth cohort using the Internet. *Methods:* We constructed the study website (<http://www.progettoninfea.it>), with information on the study aims and link with the questionnaires, to recruit pregnant women attending each of five hospitals in Turin (Italy, 900 000 inhabitants) during their pregnancy. The study is being advertised at the hospitals using leaflets and posters. Participant women accessed the website and answered the first questionnaire (450 items, 14 sections). They accepted to be contacted after delivery to answer the follow-up questionnaires. *Results:* 12.2 women per week were recruited between September and December 2005, implying 660 expected yearly participants. All 14 sections were completed by 87% of the participants, of whom 57% had a degree certificate. Women indicated that they would accept to mail their (81%) or their son's (70%) buccal swabs. *Conclusion:* The Internet is an efficient method to recruit birth cohorts. This method can be used to cover large populations, in which a traditional birth cohort is not feasible.

434 UNDERUSE OF TOTAL HIP REPLACEMENT AMONG LOW-INCOME ELDERLY PATIENTS IN A FOUR CITY STUDY IN ITALY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Because Italy has universal health coverage, socioeconomic status (SES) is not expected to influence access to or quality of care. **Objectives:** We tested whether: 1) SES affects the rates of Total Hip Replacement (THR); 2) it plays a role in early or late outcomes. **Methods:** From Hospital Registries (Milan, Bologna, Turin, Rome 1997–2000) we identified 3513 elderly residents (69% females) undergoing THR. An area-based income index was calculated. Poisson regression yielded rate ratios by income level (RR, 95% CI). Logistic regression calculated odds ratios of complications within 90 days (pulmonary embolus, deep wound infection, hip dislocation). Cox proportional hazards models evaluated effects of income on rates of revision of THR and mortality up to 31 December, 2004. Analyses adjusted for age, gender, residence, comorbidities. **Results:** Low-income men were less likely than high-income counterparts to undergo THR (RR = 0.85, 95%CI 0.68–1.07). An effect was observed for those aged > = 70 (RR = 0.81 95%CI 0.69–0.95). High-income patients had fewer comorbidities and were more likely to be treated in private hospitals (23.9 vs 3.9%, highest vs lowest income). No association between income and post-THR outcomes was found. **Conclusion:** THR is underutilized among older deprived people. After THR, quality of care seems not to differ by SES.

436 MAMMOGRAPHY SCREENING CONTRIBUTES TO DECREASES IN ADVANCED BREAST CANCER AND BREAST CANCER MORTALITY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Population-based mammography screening for women aged 50–69 (–75 since 1998) has been implemented in the Netherlands fifteen years ago, after detailed cost-effectiveness analyses. **Objective:** To assess the effect of the program on breast cancer stages and mortality. **Design and Methods:** The Screening Organizations and Cancer Registry provided data on breast cancer incidence and tumor stages. Breast cancer mortality is evaluated in the age group 55–74 years using data from Statistics Netherlands. The observed mortality rates in the period before screening implementation (1988–1989) are compared with those observed in 1990–2004. In addition, observed mortality is compared with the mortality predicted by the MISCAN micro-simulation model in presence and absence of screening. **Results:** The rate of early-stage breast cancers increased with screening, while the advanced-stage tumors significantly decreased. Breast cancer mortality started to decline significantly from 1997 onwards, following the pattern predicted in presence of screening, and reaching a reduction of 25.5% in 2004. After a previous slight increasing trend, the downward turn in the breast cancer mortality occurred within the first year of introduction, adjusting for the gradual implementation

of screening in the municipalities. **Conclusion:** Discussion: The incidence of advanced breast cancer and breast cancer mortality declined as an effect of mammography screening.

437 PREDICTIVE VALUE OF SYMPTOMS IN DIAGNOSING SERIOUS ARRHYTHMIAS IN THE GENERAL PRACTICE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In the general practice (GP), identifying patients with serious arrhythmias in patients with palpitations is important for diagnostic and treatment options. **Objectives:** To determine how well GPs predict which patients have a cardiac arrhythmia and which factors, from history-taking and physical exam, they use to make this prediction. Also to detect discriminating factors that can assist a GP in identifying patients likely to be diagnosed with a serious arrhythmia. **Methods:** A consecutive cohort presenting to GPs with palpitations (The BEAT trial). GPs estimated the probability of patients having a cardiac arrhythmia based on history and physical examination, these were then compared to the diagnostic results from loop recording (CER). **Results:** No correlation was found between GP prediction and a cardiac diagnosis. GPs were more likely to predict an arrhythmia in patients suffering from hypertension (10.95% higher, $p = 0.049$) or a history of cardiovascular disease (21.35% higher, $p = 0.018$), and less likely in patients reporting triggered episodes (15.3% lower, $p = 0.004$). Vasovagal symptoms (OR = 2.91) and bradycardia were significantly more common in patients with serious arrhythmia (OR = 4.24) **Conclusion:** GPs are not able to predict a serious arrhythmia from history alone, using the CER to all patients reporting undiagnosed palpitations may be a better option.

440 EPER: DESCRIPTION OF THE INDUSTRIAL POLLUTION IN SPAIN AND COMPARATIVE ANALYSIS WITH EUROPEAN COUNTRIES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The European Pollutant Emission Register (EPER) is a register of industrial emissions into air and water (direct or via a sewerage system) of 50 pollutants created by the Decision 2000/479/CE. **Objectives:** Our aim was to describe industrial pollution in Spain and to compare it with other European countries included in EPER. **Design and Methods:** EPER data for 2001 to quantify the emissions into air and water and to represent the distribution of individual facilities in Europe were used. Maps of Spain representing emissions of carcinogenic pollutants using customize graduated symbols has been done. **Results:** Total industrial emission released by 1,437 Spanish facilities was nearly 158-million t to air and more than 8-million t to water in 2001. Spain declared emission of 32 pollutants to air in 2001 and for 10 of them was the country with higher percentage of emissions in relation to other European countries. **Conclusion:** This information can be useful to determine the relationship between industrial pollution and health outcomes. **Discussion:** The findings obtained from EPER are provisional and they must be validated. Supported by: FIS 040041 and RCESP-FIS C03/09.

441 FACTORS ASSOCIATED TO LAPAROSCOPIC CHOLECYSTECTOMY, FRIULI VENEZIA GIULIA NORTH EAST ITALY: A MULTILEVEL ANALYSIS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

We evaluated the role of selected patient- and hospital- related factors on the rates of laparoscopic cholecystectomies from 1994 to 2004 in Friuli Venezia Giulia Region by means of multilevel regression analysis. From regional hospitals discharge data from 1994 to 2004, we selected all records with procedure code of laparoscopic (ICD 9 CM: 512.3) or open (512.2) cholecystectomy and diagnosis of uncomplicated cholelithiasis (ICD 9 CM: 574.0; 574.1; 574.2) or cholecystitis (575.0; 575.1), in any field. Patient-level - sex, age, comorbidity (malignancies, diabetes, aortic aneurism, respiratory diseases, infective disease, renal failure) - and hospital-level (standardized number of discharges per year) factors were assessed. In the 11 year period, 22,521 overall cholecystectomies were performed, 63,6% laparoscopically. Rates of laparoscopic procedure increased from 13,4 to 46,8 per 100 patients with diagnosis of cholelithiasis or cholecystitis. Controlling for year of intervention, male patients (regression coefficient [RC] = - 0,407; standard error [SE] = 0,035), with older age (RC = -0,042; SE = 0,001), with malignancies (RC = -2,03, SE = 0,061) or infective (RC = -1,94; SE = 0,422) comorbidity, showed a significant lower probability of laparoscopic vs. open intervention. A inverse non significant association with standardized number of discharges per year (RC = -0,058; SE = 0,225) was found.

442 EFFECT OF 2 VERSUS 3 PCV7 ON NASOPHARYNGEAL CARRIAGE, TRANSMISSION AND HERD IMMUNITY; A RANDOMIZED, CONTROLLED STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Although a diminished doses scheme of 7-valent pneumococcal conjugate vaccination (PCV7) may offer protection against invasive pneumococcal disease, it might affect pneumococcal carriage and herd immunity. Long term memory has to be evaluated. **Objective:** To compare the influence of a 3 and 2-doses PCV7-vaccination scheme on pneumococcal carriage, transmission, herd immunity and anti-pneumococcal antibody levels. **Methods:** In a prospective, randomized, controlled trial infants are randomly allocated to receive PCV7 at ages 2 and 4 months; ages 2, 4 and 11 months and the age of 24 months only. Nasopharyngeal (NP) swabs are regularly obtained from infants and family members. The NP swabs are cultured by conventional methods and pneumococcal serotypes are determined by Quellung reaction. Antibody levels are obtained at 12 and 24 months from 80 infants in group I and II and from 30 infants in group III. One thousand infants are needed to detect a 10% difference in pneumococcal carriage ($\alpha = 0.05$, $\beta = 0.80$) between the three groups. **Results:** So far, 852 infants have been included. Preliminary results show that prior to vaccination pneumococcal carriage was 16%. **Conclusion:** This trial will provide insight into the effects of a

diminished dose scheme on herd immunity and long-term anti-pneumococcal antibody development.

443 HEALTH-RELATED QUALITY OF LIFE (HRQOL) IN GALICIA (SPAIN) AFTER THE PRESTIGE OIL-SPILL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Oil-spills cause important environmental damages and acute health problems on affected populations. **Objectives:** To assess the impact of the Prestige oil-spill in the HRQoL of the exposed population. **Design and Methods:** We selected 1350 residents in coastal areas heavily affected by the oil-spill and 1350 residents in unaffected inland villages through random sampling, stratified by age and sex. HRQoL was measured with the SF-36 questionnaire in personal interviews. Individual exposure was also explored. Mean differences in SF-36 scores >3 points were considered 'clinically relevant'. Odds ratios (OR) summarized the association between area of residence (coast vs inland) and suboptimum HRQoL (lower than percentile 25th), adjusting for possible confounders. **Results:** Neither clinically relevant nor statistically significant differences were observed in most of the SF-36 scales regarding place of residence or individual exposure. Worse scores (inland = 79,2; coast = 75,9; $p < 0,001$) and a higher frequency of suboptimum values (OR:1.29; 95%IC:1.05-1.58) were observed in Mental Health scale. **Conclusion:** No important effects were observed on most of the SF-36 scales, except a slightly lower mental-health score in the affected area. **Discussion:** Although acute health problems were described, damages on HRQoL do not seem to have persisted one year after the accident. Supported by: Health Ministry & RCESP-FIS:C03-09

448 UNDERREPORTING OF HYPERTENSION IN AMI PATIENTS WITH AN HISTORY OF COMPLICATED HYPERTENSION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Patient comorbidities are usually measured and controlled in health care outcome research. Hypertension is one of the most commonly used comorbidity measures. **Objectives:** This study aims to assess underreporting of hypertension in AMI patients, and to analyze the impact of coding practices among Italian regions or hospitals' type. **Methods:** A cohort of AMI hospitalisations in Italy from November 2002 to October 2003 was selected. 4820 patients with a previous hospital admission reporting a diagnosis of complicated hypertension within the preceding 22 months were studied. A logistic model was constructed. Both crude and adjusted probability of reporting a hypertension in AMI admissions, depending from the number of diagnosis fields compiled in discharge abstracts, and presence of other diseases were estimated. **Results:** In 57.9% of patients hypertension was not reported. Probability of reporting hypertension increased with the number of compiled diagnosis fields (adjusted ORs range: 1.50-2.17). There were no significant differences among Italian regions, while private hospitals' reporting was less accurate. Disorders of lipid metabolism were more probably coded with hypertension (adjusted OR: 4.37). **Conclusions:** Information from both AMI and previous hospitali-

sations would be needed to include hypertension in a comorbidity measure.

451 PRESCRIPTION OF ACEI IN SYSTOLIC HEART FAILURE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The angiotensin converting enzyme inhibitors (ACEI) should be considered the standard initial treatment of the systolic heart failure. This treatment is not recommended in patients with hypotension, although figures of systolic blood pressure around 85–90 mmHg during the treatment are allowed if the patient remains asymptomatic. **Objectives:** To know the proportion of patients with systolic heart failure receiving treatment with ACEI, and the proportion of these patients with signs of hypotension. **Design and Methods:** The electronic clinical records of all the patients diagnosed of systolic heart failure were reviewed. The electronic information system covers a 60% of the population of the Basque Country, approximately. Diagnosis of heart failure was defined as the presence of any of the following CIE-9 codes: 428 or 402.11 or 402.91. To evaluate the blood pressure, the last available determination was considered. **Results:** Out of 9464 patients with left heart failure, 4108 (43.4%) have been prescribed ACEI. Among the 328 patients with blood pressure lower than 85mmHg (systolic) or than 60mmHg (diastolic), 163 (49.7%) were also receiving this treatment. **Conclusions:** ACEI are clearly underprescribed in the Basque Country for the treatment of heart failure. Attention should be given to the group at risk of hypotension.

455 OBESITY AND LUNG DISEASE PREDICT CRP LEVELS IN MYOCARDIAL INFARCTION SURVIVORS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Epidemiologic studies have shown an association between C-reactive protein (CRP) and cardiovascular endpoints in population samples. **Methods:** In a longitudinal study of 1006 myocardial infarction (MI) survivors, CRP was measured repeatedly (up to 8 times) within a period of 13 months. Data on disease history and life style were collected at baseline. We examined the association between different variables and the level of CRP using a random effects model. **Results:** In total 5835 CRP samples were collected in Athens, Augsburg, Barcelona, Helsinki, Rome and Stockholm. Mean levels of CRP were 2.6, 2.4, 3.4, 2.0, 2.5, 2.8 [mg/l] respectively. Body mass index (BMI) and chronic bronchitis (ever diagnosed) had the largest effect on CRP (38% (for 5 kg/m²) and 32% change from the mean level, respectively, $p < 0.05$). Age classes showed a cubic function with a minimum at ages 50 to 60. Glycosylated hemoglobin (HbA1c) $< 6.5\%$ as a measure of long-term blood glucose control and being male were found to be protective (-21% and -17% respectively, $p < 0.05$). **Conclusion:** It was shown that BMI and history of bronchitis are important in predicting the

level of CRP. Other variables, like alcohol intake, play a minor role in this large sample of MI patients.

456 MEDICAL IONISING RADIATION AND THE RISK OF MALIGNANT LYMPHOMA: RESULTS OF A CASE-CONTROL STUDY IN GERMANY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: During the last decades a remarkable increase in incidence rates of malignant lymphoma was seen. Although some reasons are known or suspect underlying risk factors are not well understood. **Objectives:** We studied the influence of medical radiation (x-ray, radiotherapy and szintigraphy) on the risk of malignant lymphoma. **Methods:** We analysed data from a population-based case-control study with 710 incident lymphoma cases in Germany from 1999–2003. After informed consent cases were pair-matched with controls recruited from registration office by age, gender and study region. Data was collected in a personal interview. We analysed data using conditional logistic regression. **Results:** The linear model shows an OR = 0.99/mSV due to x-ray exposure and OR = 0.63 (95%-CI = 0.5–0.79) comparing higher with lower exposure. Radiotherapy shows an OR = 0.76 (n = 31 cases). There is no association between all lymphomas and szintigraphies but in the subgroup containing multiple myeloma, CLL, MALT- and marginalcell lymphoma we found an OR = 1.86 (95%-CI = 1.02–3.40) in the multivariate model. **Discussion:** No excess risk was observed for x-ray examinations. Ionising radiation may increase risk for specific lymphoma subgroups. However, it should be noted that numbers in the subgroups are small and that radiation dose may be somehow inaccurate as no measures were available.

457 ASSOCIATION BETWEEN VARUS-ALIGNMENT AND THE ONSET AND PROGRESSION OF OSTEOARTHRITIS OF THE KNEE

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Varus-alignment (bow-leggedness) is assumed to correlate with knee osteoarthritis (OA), but it is unknown whether varus-alignment precedes the OA or whether varus-alignment is a result of OA. **Objective:** To assess the relationship between varus-alignment and the development, as well as progression, of knee OA. **Methods:** 1,501 participants in the Rotterdam study were selected. Knee OA at baseline and at follow-up (mean follow-up 6.6 years) was defined as Kellgren & Lawrence (K&L) grade ³ 2, and progression of OA as an increase of ³ 1 K&L degree. Alignment was measured by the femoro-tibial angle on baseline radiographs. Multivariable logistic regression for repeated measurements was used. **Results:** Of 2,664 knees, 35.2% showed normal alignment, 64.3% varus-alignment, and 0.5% valgus-alignment. Comparison of high varus-alignment versus normal, low and mediate varus-alignment together, showed a two-fold increase in the development of knee OA. (OR = 1.83; 95%CI = 1.17–2.85). The risk of progression was higher in the high varus group compared to the normal, low and mediate varus group (OR = 2.53; 95%CI = 1.04–6.19). Stratification for overweight gave similar odds ratio's in the overweight group, but weaker odds ratio's in the

non-overweight group. *Conclusion:* A higher value of varus-alignment is associated with the onset and progression of knee OA.

459 VALUE OF MAGNETIC RESONANCE IMAGING IN THE DIAGNOSIS OF HEART FAILURE IN PATIENTS WITH COPD

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Echocardiographic image quality in COPD patients can be hampered by hyperinflated lungs. Cardiovascular magnetic resonance imaging (CMR) may overcome this problem and provides accurate and reproducible information about the heart without geometric assumptions. *Objective:* To determine the value of easily assessable CMR parameters compared to other diagnostic tests in identifying heart failure (HF) in COPD patients. *Design and Methods:* Participants were recruited from a cohort of 405 COPD patients = 65 years. A panel established the diagnosis of HF during consensus meetings using all diagnostic information, including echocardiography. In a nested case-control study design, 37 COPD patients with HF (cases) and a random sample of 41 COPD patients without HF (controls) received CMR. The diagnostic value of CMR for diagnosing HF was quantified using univariate and multivariate logistic modelling and ROC-area analyses. *Results:* Four easily assessable CMR measurements had significantly more added diagnostic value beyond clinical items (ROC-area 0.91) than amino-terminal pro B-type natriuretic peptide (ROC-area 0.80) or electrocardiography (ROC-area 0.77). A 'CMR model' without clinical items had an ROC-area of 0.88. *Conclusion:* CMR has excellent capacities to establish a diagnosis of heart failure in COPD patients and could be an alternative for echocardiography in this group of patients.

460 ALIFE@WORK: EFFECTS ON BODY WEIGHT AND BODY MASS INDEX OF A 6 MONTH LIFESTYLE PROGRAM USING DISTANCE COUNSELING

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The prevalence of overweight (i.e. Body Mass Index [BMI] > = 25 kg/m²) is increasing. New approaches to address this problem are needed. *Objectives:*

- 1) To assess the effectiveness of distance counseling (i.e., by phone and e-mail/internet) on body weight and BMI, in an overweight working population.
- 2) To assess differences in effectiveness of the two communication methods. *Design and Methods:* 1386 overweight employees (67% male; mean age 43.9 ± 8.6 years; mean BMI 29.6 ± 3.5 kg/m²) were randomized to a control group receiving general information on overweight and lifestyle (N = 460), a phone based intervention group (N = 462) and an internet based intervention group (N = 464). The intervention took 6 months and used a cognitive behavioral approach, addressing physical activity and diet. The primary outcome measures, body weight

and BMI, were measured at baseline and at six months. Statistical analyses were performed with multiple linear regression. *Results:* The intervention groups (i.e., phone and e-mail combined) lost 1.5 kg (BMI reduced by 0.5 kg/m²) over the control group (p = 0.000). The phone group lost 0.5 kg more than the internet group (p = 0.179). *Conclusion and Discussion:* Distance counseling results in short term weight loss. There is no difference for counseling by phone or e-mail.

464 POPULATION PREVALENCE, RISK-FACTORS AND OUTCOMES OF HCV INFECTION. LAZIO, ITALY 1997-2001

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The health impact of HCV infection changed dramatically after blood for transfusions began to be screened and the highest prevalence were restricted to special exposures. Currently the most important topics of HCV are unapparent infection, the possibility of contracting HCV in health care settings and the development of chronic diseases. *Objectives:* Our study questions were: 1) HCV prevalence in Lazio population (n.5255028) and in exposed groups, 2) outcomes of HCV infection, 3) risk factors for incident infections. *Methods:* Data from HCV laboratory surveillance, hospital discharge registry, dialysis registry and drug users surveillance were combined. The analysis of risk-factors will be carried out among patients first diagnosed in 2000-2001, restricting the effective exposure from 15 days to six months before diagnosis. *Results:* The HCV prevalence was 1.04%. Drug users showed the highest estimate (31.9%); prevalence was 13.6% in dialysis patients, 0.07% in transfusion patients, 1.25% in kidney transplants, 0.1% in other transplants, 0.22% for abdominal surgery, and 0.15% for gynaecological surgery. Outcomes of HCV infection were: cirrhosis (13.1%), gastrointestinal hemorrhage (4.1%), hepatocellular carcinoma (3.6%), and other chronic liver diseases (5.65%). Only 0.4% underwent a liver transplant. Cryoglobulinaemia and non-Hodgkins lymphoma both showed a 1% occurrence among HCV infected patients.

465 EFFECT OF EDUCATION IN OVERALL AND CAUSE-SPECIFIC MORTALITY IN INJECTING DRUG USERS, BY HIV AND INTRODUCTION OF HAART

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objective: Although an inverse gradient education-mortality has been shown in the general population, little is known about this trend in groups with higher risks of death. We examine differences in mortality by education and HIV-status among injecting drug users (IDUs) before and after introduction of Highly Active Antiretroviral Therapy (HAART) in 1997. *Methods:* Community-based cohort study of IDUs recruited in 3 AIDS prevention centres (1987-1996). Causes of death were ascertained in clinical centres and Mortality Registry and classified as AIDS, drug use, external causes and liver diseases. Poisson models including interaction education-calendar period and adjusted by sex, age and HIV were used. *Results:* Of 6575 IDUs, 21.9% had no studies, 55.8%

primary, 19.2% secondary and 3.2% university studies. HIV-prevalence: 47.2%. There were 1493 deaths (20.2/1000 persons-year): 761 related to AIDS, 234 to drug use, 179 to external causes and 93 to liver diseases. University IDUs had lower risk of death (RR:0.52; 95%CI:0.36–0.77) than those without studies: this difference was higher after (RR:0.45; 95% CI:0.25–0.80) than before 1997 (RR:0.68; 95% CI:0.41–1.13). In 1997–2004 IDUs with higher education showed a lower risk of death due to AIDS (RR:0.33; 95% CI:0.23–0.48), drug use (RR:0.54; 95% CI:0.28–1.05) and external causes (RR:0.52; 95% CI:0.23–1.21) compared to before 1997. *Conclusions:* Independently of HIV, lower education predicts higher mortality not only due to AIDS but for most causes of death and its impact is stronger after 1997.

466 A&E UTILIZATION BY PATIENTS OF SINGLE OR ASSOCIATED GENERAL PRACTITIONERS IN AN ITALIAN LOCAL HEALTH UNIT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Accident and Emergency Departments (A&E) often deal with minor surgical and medical problems, which could be managed within the framework of primary care. *Objectives:* The research question was 'Is Group Practice – recently introduced in the Italian General Practitioners (GP) contract - associated with a lower utilization of the A&E?' *Design and Methods:* A cross-sectional design was adopted, based on administrative data. Patients were categorized as 'users' on a yearly base (2003). Data were analyzed with a multilevel logistic random-effect model. *Results:* An access to the A&E was registered in 30,972/148,985 patients of 135 GPs. After adjusting for the case-mix of the patients (male: OR = 1.31, CI 95% 1.28–1.34; age over 70: OR = 1.24, 1.19–1.30; age over 80 years: OR = 1.62, 1.53–1.70; foreign citizenship: OR = 2.05, 1.95–2.15; living near the hospital: OR = 1.09, 1.06–1.12; living in a deprived Municipality: OR = 1.02, 1.00–1.05) the impact of Group vs. Solo Practice has been evaluated. Patients of the GPs working in association with other practitioners (86.7%) showed a 7% lower odd of attendance (OR = 0.93, 0.87–0.99). *Conclusion:* The actual implementation of Group Practices may account for a reduction of about –3,000 admissions to A&E/year or about –22 admissions to A&E/GP/year.

467 STOMACH CANCER AND OCCUPATION IN SPAIN: A CASE-CONTROL STUDY BASED ON JOB TITLES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: A considerable number of epidemiological studies have found excess risks for several occupational groups in relation to gastric cancer (GC); however, few studies have investigated GC histology in relation to occupation. *Objective:* To explore the relationship between occupation and GC by histological type. *Design and Methods:* We conducted a hospital-based case-control study between 1995 and 1999 in Spain. Subjects were 399 incident GC, 30–80 years old, with histological confirmation (241 intestinal or epidemic, 109 diffuse, 20 lymphomas and 29 other types), and 455 controls frequency-matched to cases by age and sex. Information on demographic characteristics, risk factors and occupational history was elicited using structured questionnaires. Occupation was coded according to the International-Standard-Classification of Occupations, ISCO-88-COM. *Results:* We found significant increased odds ratios (OR) for diffuse GC among

Cooks, OR = 3.65 (1.08–12.33), and Wood-processing-plant operators (Carpenters), OR = 7.82 (1.52–40.25). For intestinal GC, evidence of a positive association was found for Miners and quarry workers among men, OR = 4.98 (0.95–26.12). Evidence of a positive association was found for GC lymphoma subtype among Shoe-makers, OR = 7.82 (0.96–63.38). *Conclusions:* Consistent with the 'dust' hypothesis and work in high temperature environment, we found that carpenters and miners (dusty occupations), and cooks, may have increased risk for GC.

468 HETEROGENEITY IN THE IMPACT OF HEAT ON MORTALITY BY AGE AND GENDER IN ROME, ITALY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Heat waves are associated to an increase in mortality, especially in the elderly and people suffering from chronic diseases. The role of gender in influencing the vulnerability to heat is still controversial. *Methods:* The aim was to explore the differences in heat-related mortality by age (65–74, 75–84, 85+) and gender in Rome. The relative risk of dying during the 2003 heat wave compared to a previous reference period was estimated. The relationship between maximum apparent temperature (Tappmax) and mortality was also explored using smoothing scatter plots. The percentage change in mortality above/below a threshold value was estimated using segmented regression. *Results:* The risk of dying during summer 2003 was higher in females (RR = 1.27) than in males (RR = 1.12), especially in females over 85 years (RR = 1.43). A J-shaped Tappmax-mortality relationship was observed for all ages in females and only for the 65–74 age group in males. The impact of Tappmax above the threshold value was significant for both genders, especially in elderly females (75–84 years: +5.7%; 85+ years: +9.1%). *Discussion:* The impact of heat on mortality in Rome was higher among the elderly, especially in females, the latter result requires further analysis. Effective prevention strategies should be targeted to susceptible subgroups.

472 COFFEE AND SOME ORGANOCHLORINE COMPOUNDS (OC) ARE ASSOCIATED WITH K-RAS MUTATIONS IN EXOCRINE PANCREATIC CANCER (EPC)

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Hypothesis: In EPC mechanistic relations may exist among K-ras mutations, OC and coffee intake. Incident cases of EPC were interviewed and drawn blood during hospital admission. OC were measured by high-resolution gas chromatography with electron-capture detection. Analyses include 103 patients with data on K-ras, OC and interview. Even after adjusting by p,p'-DDT, the likelihood of a mutated tumour was higher among regular coffee drinkers (RCD) than among non-RCD (OR: 4.2; 95%CI: 1.1–5.5; p = 0.031). Vs. non-RCD, the OR adjusted by age, sex and p,p'-DDE were 4.2 for 1–7 cups/week (c/w), 5.2 for 8–14 c/w and 6.1 for 15+ c/w (p-trend = 0.022). ORs were similar when adjusting by other OC and cancer symptoms. The OR for p,p'-DDT adjusted by age, sex and coffee was 7.9 (95%CI: 2.5–25.2; p = 0.001); for mid and upper tertiles of PCB 138 the OR were 2.8 and 6.6 (p-trend = 0.008). The associations were stronger for the 2 most

prevalent mutations (Arg and Val). OC and coffee were hardly correlated; they did not interact. Upon simultaneous adjustment by age, sex, symptoms, coffee and 2 OC, p,p'-DDT, PCB 153 and coffee remained strongly associated with the mutation. In EPC, OC and coffee may have co-roles in the persistence of K-ras mutations.

476 UTILIZATION OF HORMONAL CONTRACEPTION IN PORTUGAL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Since 2001 emergency contraceptives (EC) became available as pharmacy medicines (PM) in Portugal. One of the major concerns associated with the increased accessibility of this medication was the possible switch from regular use of the Hormonal Contraceptive (HC) method to EC. *Objective:* To characterize the pattern of use of HC dispensing by pharmacies. Drug consumption data were obtained through a database with representative drug dispensing data of ambulatory care nationwide. Study period: Since January 2002 until November 2005. Main outcome measure: Units of contraceptive needed for one good cycle control per woman aged between 15 and 54 years. During the study period, regular HC consumption increased 1.4%. Overall, 3.4 cycles per woman were dispensed. The most frequently used substance was ethinyloestradiol in combination with gestodeno (41.8%). EC consumption increased 92.6%. PM EC increased 152.0% while Prescription Only Medicines EC decreased 74.0%. Over 6.5 units of EC, despite of its legal statute, were dispensed per 100 women. The highest HC consumption was registered in the Algarve. In conclusion, during the period considered there were no significant variations in regular HC use, contrarily to EC variations. These results lead to conclude there was no switch from regular HC method to EC.

477 PELVIC PAIN IN PREGNANCY IS ASSOCIATED WITH STRENUOUS WORKING CONDITIONS AND HIGH PSYCHO-SOCIAL STRAIN

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Pelvic pain is the most frequent cause of sick listing during pregnancy in Denmark. The sparse knowledge of the etiology makes evidence based prevention a limited option. *Objectives:* We studied whether pregnant women with physically or psycho-socially strenuous work are more likely to suffer from pelvic pain than women with less strenuous work. *Design and Methods:* Pelvic pain cases (1219) and controls (1539), selected on the basis of self reported pain intensity, localization, and impact on daily living activities, were sampled for a nested case-control study within the Danish National Birth Cohort. Exposure data were collected prospectively. *Results:* Sixteen percent of the women reported pelvic pain during pregnancy. Odds ratios for fixed evening work and rotating shifts were 1.76 (95% confidence interval 1.04 to 2.96) and 1.65 (1.22 to 2.24), respectively, compared with day work. For physically strenuous work the odds ratio was 1.47 (1.17 to 1.84), and for high psycho-social job strain compared with low job strain it was 1.39 (1.12 to 1.74). *Conclusion:* We found that both physically and psycho-socially demanding working conditions, measured by rotating shifts, physically strenuous work and high

psycho-social job strain, was associated with an increased risk of pelvic pain in pregnancy.

478 SLEEP APNEA IN RELATION TO INSULIN RESISTANCE AND VASCULAR FUNCTION IN A POPULATION-BASED STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Clinical studies have suggested that sleep apnea is associated with diabetes and endothelial dysfunction. *Objectives:* We examined these associations among participants in a population-based sample of Wisconsin state employees. *Design and Methods:* Obstructive sleep apnea (OSA) was assessed using the apnea-hypopnea index (AHI, average number of apneas/hypopneas per hour) scored from full polysomnography in a sleep laboratory. Endothelial function was assessed by flow-mediated dilatation of the radial artery (FMD, %change in diameter following reactive hyperemia) measured by ultrasound. Insulin resistance was characterized using the homeostasis model assessment (HOMA-IR). *Results:* Among 174 participants (age 43–75 years, 43% female), OSA (AHI = 5/h) was associated with the presence of insulin resistance: age-sex-adjusted HOMA-IR was 4.4 and 2.7 in individuals with and without OSA, respectively (p = 0.004); this difference, however, became non-significant after further adjustment by BMI. AHI was only weakly associated with FMD and the association appeared to be entirely explained by BMI and the presence of insulin resistance. *Conclusion and Discussion:* The associations between OSA, metabolic syndrome and endothelial dysfunction are complex. Further elucidation of these relations could shed new light on the mechanisms for the association between sleep breathing disorders and cardiovascular risk.

480 THE EFFECT OF FLIGHT-RELATED BEHAVIOUR ON THE RISK OF VENOUS THROMBOSIS AFTER AIR TRAVEL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Several studies have indicated an increased risk of venous thrombosis (VT) after flying. We studied the effect of flight-related behaviour in a population-based case-control study on risk factors for venous thrombosis (MEGA study). Patients were identified via anticoagulation clinics; control subjects by random-digit-dialling. Participants were asked about risk factors for VT, including details of their last flight. Subjects were selected who had flown within 8 weeks before the thrombosis (cases) or filling out the questionnaire (controls). Of 3471 participants, 189 cases and 242 controls had recently flown. We identified several factors related to the occurrence of VT after flying: > 12 hours flight vs 1–4: OR 2.0 (95CI 1.0–3.9); 2 or more alcoholic drinks vs 0–1: OR 2.1(95CI 1.1–4.2); window vs aisle seat: OR 1.7 (95CI 1.1–2.6). No effect had business/first class: OR 1.0 (95CI 0.4–2.5) or > 1 hour sleep: OR 1.1 (95CI 0.6–1.8). It is noteworthy that neither the use of elastic stockings nor exercise during the flight showed a beneficial effect. We conclude that certain behavioural factors during flying influence the risk of VT after air travel. Current advice on prevention of travel-related thrombosis may have to be reconsidered.

484 PREDICTORS OF FOLLOW-UP AND ASSESSMENT OF SELECTION BIAS USING INVERSE PROBABILITY WEIGHTING

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Dropouts in cohort studies can introduce selection bias; however, inverse probability weighting (IPW) can evaluate this potential bias. **Objectives:** To assess: a) predictors of retention in a cohort, b) whether differential follow-up introduced selection bias. **Design and Methods:** Baseline assessment and follow-up were done using mailed questionnaires. We compared retained participants with drop-outs after two years. We used Cox regression to estimate the relative risk (RR) of hypertension for obesity. We used IPW to adjust for confounding and selection bias, thus evaluating whether differential follow-up affected RR estimates. **Results:** We recruited 9,907 participants from December 1999 to January 2002. The 2-year follow-up questionnaire was answered by 87% of them. Missing information at baseline, younger age, smoking, marital status, and overweight were associated with attrition. The univariate RR of hypertension for obesity was 6.4; 95% confidence interval (CI) 3.9–10.5. Adjustment for confounding using IPW attenuated the estimate (RR = 2.4, 95% CI: 1.1–5.3). Additional adjustment for selection bias did not modify it. **Conclusion and Discussion:** Follow-up through mailed questionnaires of a geographically disperse cohort in Spain is possible. Despite existing differences between retained and lost to follow-up participants, this does not necessarily have an important impact on the RR estimates.

485 ASSOCIATION BETWEEN FOLATE, VITAMIN B6 AND VITAMIN B12 INTAKE AND DEPRESSION IN THE SUN COHORT STUDY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: An association between low blood levels of B-vitamins or high serum homocysteine levels and a higher prevalence of depressive symptoms has been reported in several epidemiological studies. **Objectives:** To assess the association between the baseline intake of B-vitamins categorized in quintiles and the prevalence of depression. **Design and Methods:** Cross-sectional analysis of 9,670 participants in the SUN cohort study. We used a validated semi-quantitative food frequency questionnaire (136 items) to ascertain B-vitamins intake. **Results:** Among women, Odds ratios (OR) (95% CI) for the third to fifth quintile for vitamin B12 intake were 0.58 (0.41–0.84), 0.56 (0.38–0.82) and 0.68 (0.45–1.04) respectively. When we considered together the three upper quintiles of vitamin B12 as a group, the OR for depression among women was 0.59 (95% CI = 0.43–0.81). The results indicated an inverse dose-response relationship (p for trend = 0.006). Among men with a low level of anxiety and for current smokers we found a significant positive association between a low folate intake and the prevalence of depression (ORs for the first quintiles of intake were 2.85 (1.49–5.45) and 2.18 (1.08–4.38) respectively, compared to the upper

quintiles (Q2-Q5) considered as a group. No significant associations between vitamin B6 intake and depression were found.

489 REPRODUCTIVE HEALTH DETERMINANTS OF IMMIGRANT LATIN AMERICAN WOMEN IN BARCELONA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Objective: Understand the reproductive health beliefs, attitudes, values and behaviour of Latin American immigrant women in Barcelona, following the rise in immigration since 2001. **Methods:** Ethnographic method and conversational technique used. 4 key informants interviewed and 4 semi-structured focus groups done. Purposeful sample of 31 women of reproductive age from Central and South America. Focus group discussion recorded and transcribed. Inductive categorization for content analysis done, using categories and supercategories. Triangulation of methods and researchers. Study period from January to September 2005. **Results:** Motherhood has great personal and social value. Sexism determines the nature of partner relationships. Adolescent pregnancy is an irresponsible act. Women from rural areas and those with a low socio-economic level have more children because of lack of access to education, and health resources, as well as a desire for security in old age. Contraceptive methods are highly valued. Religion, Catholic or Evangelical, can reduce their use. For some, abortion is a crime, while others accept it under certain circumstances. A minority see it as a right. **Conclusions:** Contraceptive use is considered very important. More information and better access to contraceptive methods is requested. Educational and socio-economic level determine beliefs, attitudes, values and behaviours regarding reproductive health.

491 PREVALENCE, AWARENESS, TREATMENT AND CONTROL OF HYPERTENSION IN THE PORTUGUESE GENERAL POPULATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Hypertension has a strong impact in the burden of disease. **Objectives:** To calculate prevalence, awareness, treatment and control of hypertension in a population-based sample of Portuguese adults, and their evolution over time. **Methods:** In a health survey, 2011 adults aged ≥ 40 years were randomly selected from the general population (1889 had blood pressure measurements). Hypertension was defined as blood pressure $\geq 140/90$ mmHg or being treated. We stratified for period of recruitment – before/after December 1999 (median of distribution). Proportions were compared using the chi-square test. **Results:** Hypertension was found in 58.8% (95%CI 55.9–61.6) of 1163 women (no change over time: 59.9% to 57.8%, $p = 0.48$) and 59.9% (95%CI 56.2–63.5) of 726 men (57.3% to 62.8%, $p = 0.13$). Among hypertensives, 61.3% of women and 47.1% of men were aware of hypertension (no change over time), $p < 0.01$. The proportion receiving treatment (women: 65.1% to 77.3%, $p = 0.006$; men: 56.4% to 73.1%, $p = 0.01$) increased over time, but not the proportion achieving control (women: 13.0% to 18.1%, $p = 0.23$; men: 12.3% to 19.7%, $p = 0.25$). **Conclusions:** The prevalence of hypertension was high. Women were more often aware of hypertension. The proportion receiving treatment increased over time in both sexes, but this did not result in more efficacious blood pressure control.

494 HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH PANCREATIC CANCER

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Pancreatic cancer is an aggressive cancer with low survival time, with health-related quality of life (HRQoL) being of major importance. **Objectives:** The aim of our study was to assess both generic and disease-specific HRQoL in patients with pancreatic cancer. **Methods:** Patients with suspected pancreatic cancer were consecutively included at admission to the hospital. HRQoL was determined with the disease-specific European Organization for Research and Treatment of Cancer (EORTC) health status instrument and generic EuroQoL (EQ-5D). **Results:** A total of 57 patients (mean age 62 years \pm 11, 49% men) were admitted with suspected pancreatic cancer. Of these patients, 45 (79%) had pancreatic cancer confirmed as final diagnosis. HRQoL was significantly impaired in patients with pancreatic cancer for most EORTC and EQ-5D scales in comparison to norm populations. The ED-5D visual analogue scale (VAS) and utility values were significantly correlated to the five functional scales, to the global health scale and to some but not all of the EORTC symptom scales/items. **Conclusions:** HRQoL was severely impaired in patients with pancreatic cancer. There was a significant correlation between most EORTC and EQ-5D scales. Our results may facilitate further economic evaluations and aid health policy makers in resource allocation.

497 LONG -TERM HEALTH IMPACT OF ORGANIZED VIOLENCE - SYSTEMATIC REVIEW

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Organised violence has health impact both on those who experience the violence directly and indirectly. The numbers of people affected by mass violence is alarming. Substantial knowledge on the long-term health impact of Organized violence is of importance for Public Health and for epidemiology. **Objectives:** To investigate research results of long term mental health impact of organised violence. **Design and Methods:** A search of papers for the keywords genocide, organised violence, transgenerational effects, mental health was carried out in Pubmed, Science citation index and Psychinfo. **Results:** The systematic review on the long-term health impact of genocide showed that exposure to organised violence has an impact on mental health. Methodological strengths and weaknesses varied between studies. The found mental health consequences were associated with the country of research and the time of study. Overall data showed organised violence has transgenerational impact on mental health of individuals and societies. **Conclusion:** Longitudinal studies have to be carried out to get further insight into the long-term health effects of organised violence. **Discussion:** Research results on mental health effects of organised violence have to be analysed in the context of changing concepts of illness.

498 A MULTIDISCIPLINARY TREATMENT PROGRAM FOR OVERWEIGHT IN A PRIMARY CARE SETTING

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Overweight is increasing and associated with various health problems. There are no well-structured primary care programs for overweight available in The Netherlands. Therefore, we developed a 12-month multidisciplinary treatment program in a primary care setting. The aim of the present study is to determine the feasibility and efficacy of a multidisciplinary treatment program on weight loss and risk profile in an adult overweight population. Hundred participants of the Utrecht Health Project are randomised to either a dietetic group or a dietetic plus physiotherapy group. The control group consist of another 50 participants recruited from the Utrecht Health Project and receives routine health care. Body weight, waist circumference, blood pressure, serum levels, energy-intake and physical activity are measured at baseline, halfway and at the end of the treatment program. Feasibility of the treatment program is assessed by response, compliance and program-associated costs and workload. Efficacy is determined by analysing changes in outcome measures between groups over time using t-tests and ANOVA repeated measurements. The treatment program is considered effective with at least a 5% difference in mean weight change over time between groups. Positive evaluation of the multidisciplinary treatment program for overweight may lead to implementation in routine primary health care.

499 QUALITY OF LIFE BEFORE ADMISSION TO A SURGICAL ICU

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Examining patient's quality of life (QOL) before ICU admission will permit to compare and analyze its relation with other variables. **Objectives:** Analyze QOL of patients admitted to a surgical ICU before admission and study its relation with baseline characteristics and outcome. **Design and Methods:** The study was observational and prospective in a surgical ICU, enrolling all patients admitted between November 2004 and April 2005. Baseline characteristics of patients, history of co morbidities and quality of life survey score (QOLSS) were recorded. Assessment of the relation between each variable or outcome and the total score of QOLSS was performed by multiple linear regression. **Results:** Total QOLSS demonstrated worse QOL in patients with hypertension, cerebrovascular disease, renal insufficiency, severely ill (as measured by SAPS and ASA physical status), and in older patients. There was no relation between QOL and longer ICU LOS. **Conclusions:** Preadmission QOL correlates with age, severity of illness, comorbidities and mortality rates but is an able to predict longer ICU stay. **Discussion:** QOLSS appears to be a good indicator of outcome and severity of illness.

501 HIGH YIELD AND ACCURACY OF INITIAL EVALUATION IN PATIENTS WITH TRANSIENT LOSS OF CONSCIOUSNESS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Transient loss of consciousness (TLOC) has a cumulative lifetime incidence of 35%, and can be caused by various disorders. **Objectives:** To assess the yield and accuracy of initial evaluation (standardized history, physical examination and ECG), performed by attending physicians in patients with TLOC, using follow-up as a gold standard. **Design and Methods:** Adult patients presenting with TLOC to the Academic Medical Centre between February 2000 and May 2002 were included. After initial evaluation physicians made a certain, likely or no initial diagnosis. When no diagnosis was made additional cardiological testing, expert history taking and autonomic function testing were performed. The final diagnosis, after 2 years follow-up, was determined by an expert committee. **Results:** 503 patients were included. After initial evaluation, 24% of the patients were diagnosed with a certain and 40% with a likely cause for their episodes. Overall diagnostic accuracy was 91% (95%CI 88–94%); 96% (95%CI 91–98%) for the certain diagnoses and 88% (95%CI 83–92%) for the likely diagnoses. **Conclusion and Discussion:** Attending physicians make a diagnosis in 64% of patients with TLOC after initial evaluation, with high accuracy. The use of abundant additional testing can be avoided in many patients.

502 POOR QUALITY OF LIFE IN PATIENTS WITH TRANSIENT LOSS OF CONSCIOUSNESS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Transient loss of consciousness (TLOC) is common, can be lethal and causes considerable morbidity. **Objectives:** To compare the quality of life (QoL) of patients presenting with TLOC with a reference population, and to examine which sociodemographic and clinical factors are associated with QoL. **Methods:** This study was part of the Fainting Assessment Study, assessing diagnostic strategies for adult patients presenting with TLOC to the Academic Medical Center, between February 2000 and May 2002. The generic Short Form-36 (SF-36) and the disease-specific Syncope Functional Status Questionnaire (SFSQ) were used to assess QoL. **Results:** Of 468 included patients, 82% completed the questionnaires. Patients scored poorer on all scales of the SF-36 than the Dutch national population; effect sizes 0.43–1.11. The SFSQ indicated mean impairment in 33% of the listed activities. Female gender, higher level of comorbidity, shorter duration of complaints, having had more than 1 syncopal episode and the presence of presyncopal episodes were associated with poorer QoL. **Conclusion:** TLOC seriously affects QoL. Extensive counseling and consideration of appropriate testing is warranted especially for patients with recent onset of clinical symptoms and those suffering from both syncopal and presyncopal episodes.

503 RISK PERCEPTION OF AN INFLUENZA PANDEMIC IN EUROPE AND ASIA: LARGE DIFFERENCES BETWEEN COUNTRIES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The possibility of an influenza pandemic is one of the major public health challenges of today. Risk perceptions among the general public may be important for successful public health measures to better control an outbreak situation. **Objectives:** We investigated risk perception and efficacy beliefs related to an influenza pandemic in the general population in 8 countries in Europe and Asia. **Design and Methods:** Telephone interviews were conducted in 2005. Risk perception of an influenza pandemic was measured on a 5-point scale and outcome- and self-efficacy on a 4-point scale (low-high). The differences in risk perception by country, sex and age were assessed with a general linear model including interaction effects. **Results:** 3,403 persons were interviewed. The mean risk perception of flu was 3.14 and was significantly higher in Europe (3.21) compared to Asia (3.03) ($p < 0.001$) and higher in women (3.23) than men (3.02) ($p < 0.001$). Outcome- and self-efficacy were lower in Europe than Asia. **Conclusion:** In Europe higher risk perceptions and lower efficacy beliefs were found as compared to Asia. In developing preparedness plans for an influenza pandemic specific attention should therefore be paid to risk communication and how perceived self-efficacy can be increased.

505 HEALTH RELATED QUALITY OF LIFE (HRQOL) IN PATIENTS WITH CYSTIC FIBROSIS (CF): A STUDY IN ITALY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Increased survival of patients with CF has prompted interest towards their HRQoL. **Objectives:** 1. to measure HRQoL and its predictors in CF patients cared for at the Bambino Gesù Children's Hospital in Rome; 2. to assess the psychometric properties of the Italian version of the CF specific HRQoL instrument (Cystic fibrosis Questionnaire, CFQ). **Design and Methods:** Cross-sectional survey. All CF patients aged 7 years or more were asked to complete the CFQ (age-specific format). Psychological distress was assessed through standardized questionnaires in patients (Achenbach and General Health Questionnaire, GHQ) and their parents (GHQ and SF-36). **Results:** One-hundred-eighteen patients (58 males, 60 females, age range 7 to 39 years) participated in the study (response rate 97%). Internal consistency of CFQ was satisfactory (Cronbach alpha from 0.60 to 0.88); all item-test correlation were greater than 0.40. Average CFQ standardized scores were very good in all domains (> 70 on a 0–100 scale), except perceived burden of treatments (57) and degree of socialization (45). Multiple regression analysis was performed to identify factors associated with different HRQoL dimensions. **Conclusion:** Support interventions for these patients should concentrate on finding a balance between need to prevent infections and promotions of adequate, age-appropriate social interactions.

506 PREVALENCE OF THE METABOLIC SYNDROME IN GERMANY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The Metabolic Syndrome (MetSyn) – a clustering of metabolic risk factors with diabetes and cardiovascular diseases as the primary clinical outcomes – is thought to be highly prevalent with an enormous impact on public health. To date, consistent data in Germany are missing. *Objective:* The study was conducted to examine the prevalence of the MetSyn (according to NCAAP ATP III-definition) among German patients in primary care. *Methods:* The German-wide cross-sectional study run two weeks in October 2005 with 1503 randomly selected general practitioners included. Blood glucose and serum lipids were analyzed, waist circumference and blood pressure assessed, data on smoking, dietary and exercise habits, regional and sociodemographic characteristics collected. *Results:* Preliminary analysis included data of N = 35966 patients (age range: 18–99, women 61.1%). Prevalence of hypertension was 45.2% (95% CI: 44.7–45.7), abdominal adipositas 39.3% (38.8–39.8), triglyceridemia 20.4% (19.9–20.8), low HDL cholesterol 13.3% (12.9–13.6) and hyperglycemia 11.0% (10.6–11.3). The prevalence of the MetSyn is 16.1% (95% CI: 15.7–16.5), with women aged ³60 years showing highest prevalence rates (27.1%; men: 24.6%), women < 45 years showing lowest prevalence rates (5.4%; men: 8.5%). *Conclusion:* This study provides evidence for a relevant prevalence of the Metabolic Syndrome in the German population attending a general practitioner.

508 PATERNAL DEPRESSION IS A POSSIBLE RISK FACTOR FOR EXCESSIVE INFANT CRYING

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Excessive infant crying is a common and often stress inducing problem than can ultimately result in child abuse. From previous research is known that maternal depression during pregnancy is related to excessive crying, but so far little attention is paid to paternal depression. *Objective:* We studied whether paternal depression is independently associated to excessive infant crying. *Design and Methods:* In a prospective multiethnic population-based study we obtained depression scores of 3,451 mothers and 2,606 fathers at 20 weeks pregnancy using the Brief Symptom Inventory, and information on crying behaviour of 2,747 infants at 2 months. We used logistic regression analyses in which we adjusted for depression of the mother, level of education, smoking and alcohol use. *Results:* Paternal depressive symptomatology was related to the widely used Wessel's criteria for excessive crying (adjusted odds ratio 2.34, 1.22 – 4.49). *Conclusion:* Our findings indicate that paternal depressive symptomatology might be a risk factor for excessive infant crying. Discussion Genetic as well as other direct (e.g. interaction between father and child) or indirect (e.g. marital distress or poor circumstances) mechanisms could explain the found association.

509 CASE-PARENT TRIADS MODEL IN STUDIES OF RISK OF SPINA BIFIDA

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: In studying genetic background of congenital anomalies the comparison of affected cases to non-affected controls is popular method. Investigation of case-parent triads uses observation of cases and their parents exclusively. *Methods:* Both case-control approach and log-linear case-parent triads model were implemented to spina bifida (SB) cases and their parents (61 triads) and 267 controls in analysis of impact of the C667T and A1298C MTHFR polymorphisms on occurrence of SB. *Results:* Observed frequencies for 677TT genotype were 11.5% in SB children, 6.6% in mothers, 9.8% in fathers, 8.6% in controls and for 1298CC genotype were 4.9% of SB children, 4.9% of mothers, 11.5% of fathers and 7.9% of controls. Both genotype frequencies in SB triads did not differ significantly from controls. Case-control approach showed nonsignificant increase in risk of having SB for 677T allele carriers either in homozygous (OR = 1,7) or heterozygous form (OR = 1,2) and for 1298C allele carriers in heterozygous form (OR = 1,3). Log-linear model revealed significant relative risk of SB in children with both 677TT and CT genotype (RR = 3,77 and RR = 2,37 respectively). Child's genotype at A1298C and mother's genotypes did not contribute to the risk. *Conclusions:* Case-parent triads approach adds new information regarding impact of parental imprinting on congenital anomalies.

510 NO ASSOCIATION OF HEART RATE VARIABILITY WITH DEPRESSION AND MYOCARDIAL INFARCTION IN AN ELDERLY GENERAL POPULATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Previous studies showed an association of autonomic dysfunction with coronary heart disease (CHD) and with depression as well as an association of depression with CHD. However, there is limited information on autonomic dysfunction as potential mediator of the adverse effect of depression on CHD. *Objectives:* To examine the role of autonomic dysfunction as a potential mediator of the association of depression with CHD. *Design/Methods:* We used data of 1309 participants aged 45–83 years of the ongoing population-based cross-sectional CARLA Study (54% male). Time- and frequency-domain parameters of heart rate variability (HRV) as a marker of autonomic dysfunction were calculated. Prevalent myocardial infarction (MI) was defined as self-reported physician-diagnosed MI or diagnostic Minnesota Code in the electrocardiogram. Depression was defined based on the CESD-depression scale. Logistic regression was used to assess associations between depression, HRV and MI. *Results:* In age-adjusted logistic regression models, there was no statistically significant association of HRV with depression, of depression with MI, or of HRV with MI in men and women. *Discussion/Conclusion:* The present analyses do not support the hypothesis of an intermediate role of autonomic dysfunction on the causal path from depression to CHD.

512 HIGH PREVALENCES OF UNTREATED AND UNCONTROLLED HYPERTENSION IN A GENERAL ELDERLY POPULATION IN EASTERN GERMANY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Hypertension is an established risk factor for cardiovascular disease. However, prevalence of untreated or uncontrolled hypertension is often high (even in populations at high risk). **Objectives:** To assess the prevalence of untreated and of uncontrolled hypertension in an elderly East German population. **Design and Methods:** Preliminary data of a cross-sectional, population-based examination of 1556 men and women aged 45–83 years were analysed. Systolic (SBP) and diastolic blood pressure (DBP) were measured and physician-diagnosed hypertension and use of anti-hypertensive drugs were recorded. Prevalence of hypertension was calculated according to age and sex. **Results:** Of all participants, 78.5 % were hypertensive (81.8 % of men, 74.8 % of women). Of these, 29.7 % were untreated, 43.8 % treated but uncontrolled, and 26.6 % controlled. Women were more often properly treated than men. The prevalence of untreated hypertension was highest in men aged 45–55 years (60.9 %) and lowest in men and women aged > = 75 years (12.6 %). Uncontrolled hypertension increases with age in both sexes. **Conclusion and Discussion:** In this elderly population, there is a high prevalence of untreated and uncontrolled hypertension. Higher awareness in the population and among physicians is needed to prevent sequelae such as cardiovascular disease.

517 ETHNIC DIFFERENCES IN DUTCH PERINATAL MORTALITY, DATA FROM THE LINKED BIRTH REGISTRATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Perinatal Mortality in the Netherlands is higher compared to other EU countries. Several determinants have been proposed as an explanation: increased maternal age, plurality, parity, medical management differences and the relative increment of ethnic populations. **Objectives:** Describe the influence of ethnic differences in the perinatal mortality in the Netherlands (15% of the reproductive women). **Design and Methods:** The Dutch perinatal registry records were used. The results were based on the linked and validated LVR1, LVR2, LNR records of the years 2001–2003. **Results:** In 2002 perinatal mortality at 22 weeks is 11,4 ‰ (2.169/189.647). Fetal mortality among singletons is 6,0 ‰ (1.089/181.393) and infant mortality is 3,2 ‰ (569/180.304) when birth weights lower than 500 gram are excluded (WHO definitions). Fetal mortality is 2,2 times higher among blacks and Hindustani, 1,4 times higher among Moroccan/Turkish. Infant mortality is: 1,7 times higher among Hindustani, 1,6 among Blacks and 1,2 times higher among Moroccan/Turkish. **Conclusion and Discussion:** In the Netherlands perinatal mortality among black and Hindustani children is twice as high compared to Caucasian children. The risk for Moroccan/Turkish children is also increased. The increased perinatal mortality among ethnic groups is related to higher rates of premature births.

518 PROLONGED TIME-TO-PREGNANCY AMONG FEMALE GREENHOUSE WORKERS EXPOSED TO PESTICIDES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Exposure to pesticides is a potential risk factor for subfertility, which can be measured by time-to-pregnancy (TTP). As female greenhouse workers constitute a major group of workers exposed to pesticides at childbearing age, a study was performed among these and a non-exposed group of female workers. **Objectives:** To measure the effects of pesticide exposure on time-to-pregnancy. **Design and Methods:** Data were collected through postal questionnaires with detailed questions on TTP, lifestyle factors, and work tasks (e.g. application of pesticides, re-entry activities, and work hours) during six months prior to conception of the most recent pregnancy. Associations between TTP and exposure to pesticides were studied in Cox's proportional hazards models among 398 female greenhouse workers and 524 referents. **Results:** The initial fecundability ratio (FR_{adjusted}) for greenhouse workers versus referents was 1.11 (95%CI: 0.96–1.29). This FR proved to be biased by the reproductively unhealthy worker effect. Restricting the analyses to fulltime workers only gave an FR_{adjusted} of 0.89 (95%CI: 0.67–1.19). Among primigravidae greenhouse workers, an association was observed between prolonged TTP and gathering flowers (FR = 0.46, 95%CI: 0.18–1.19). **Conclusion and Discussion:** This study adds some evidence to the hypothesis of adverse effects of pesticide exposure on time-to-pregnancy, but more research is needed.

519 THE HEMOCHROMATOSIS FAMILY STUDY (HEFAS): INCREASED MORBIDITY AND SIMILAR MORTALITY COMPARED TO CONTROLS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: HFE-related hereditary hemochromatosis (HH) is an iron overload disease for which screening is recommended to prevent morbidity and mortality. However, discussion has risen on the clinical penetrance of the HFE-gene mutations. **Objective:** In the present study the morbidity and mortality of families with HFE-related HH is compared to a normal population. **Methods:** C282Y-homozygous probands with clinically overt HFE-related HH and their first-degree relatives filled in a questionnaire on health, diseases and mortality among relatives. Laboratory results on serum iron parameters and HFE-genotype were collected. The self-reported morbidity, family mortality and laboratory results were compared with an age and gender matched subpopulation of the Nijmegen Biomedical Study (NBS), a population-based survey conducted in the eastern part of the Netherlands. **Results:** Two-hundred-twenty-eight probands and 743 first-degree relatives participated in the HEFAS. Serum iron parameters were significantly elevated in the HEFAS population compared to the NBS controls. Also, the morbidity within HEFAS families was significantly increased for fatigue, hypertension, liver disease, myocardial

infarction, osteoporosis and rheumatism. Mortality among siblings, children and parents of HEFAS probands and NBS participants was similar. *Discussion:* The substantially elevated morbidity within HEFAS families justifies further exploration for a family cascade screening program for HH in the Netherlands.

520 WARNING LABELS IN CIGARETTE PACKS: LEVEL OF AWARENESS AND EFFECTIVENESS AMONG PORTUGUESE ADOLESCENTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objectives: To evaluate awareness levels and effectiveness of warning labels in cigarette packs, among Portuguese students enrolled in the 7th to the 12th grades. *Design and Methods:* A cross sectional-study was carried out in May (2004) in a high school population (7th–12th grades) in the North of Portugal (n = 1005). A confidential self-reported questionnaire was administered. Warning labels effectiveness was evaluated by changes in smoking behaviour and cigarette consumption, during the period between June/2003 (before the implementation of the tobacco warnings labels in Portugal) and May/2004. Continuous variables were compared by the t-test for paired samples and Kruskal-Wallis Test. Crude and adjusted Odds Ratios and confidential intervals were calculated by logistic regression analysis. *Results:* The majority of students (71.8%) have a high level of awareness about warning labels content. This knowledge was significantly associated with school grade and current smoking status. None of these variables was significantly associated with changes in smoking behaviour. Although not reaching statistic significance, the majority of teenagers (75.4%) increased or kept their smoking pattern. Awareness level was not associated with smoking prevalence or consumption decreases. *Conclusions:* Current warning labels are ineffective in changing smoking behaviour among Portuguese adolescents.

521 MORTALITY IN ELDERLY INJURED PATIENTS: THE ROLE OF COMORBIDITIES

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Injuries are an important cause of morbidity. The presence of pre-existing chronic conditions (PECs) have been shown to be associated with higher mortality. *Objectives:* Aim of this study is to evaluate the association between PECs and risk of death in elder trauma patients. *Methods:* An injury surveillance, based on the integration between Emergency, Hospital, and mortality databases of Lazio region, year 2000, was used. Patients were the elder people visited at the Emergency Departments, and hospitalised. PECs were evaluated on the basis of the Charlson Comorbidity Index (CCI). To measure the effect of PECs on the probability of death, we used logistic regression. *Results:* 8145 patients were admitted to the hospital. The 17.9% of the injured subjects were affected by one or more chronic conditions. Risk of death for non urgent and urgent patients increased at increasing CCI score (ORCCI:1–2 = 2.2;95% IC:1.6–2.8;ORCCI:3+ = 8.8; 95% IC:5.3–14.5; reference no PECs.) (ORCCI:1–2 = 1.7; 95% IC:1.1–2.8; ORCCI:3+ = 5.1; 95% IC: 2.2–12.0), respectively. Mortality in very urgent patients was not affected by the PECs. *Conclusion:* PECs are strong determinants of mortality in not urgent and urgent patients. This result reveals the need to address

preventive interventions in favour of older people with chronic conditions.

522 COMORBIDITY IN NEUROLOGICAL AND PSYCHIATRIC DISEASES: A POPULATION BASED CONTROLLED STUDY

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In people suffering from a neurological or psychiatric disease, comorbidity has a negative impact on health and health care utilization. *Objectives:* To examine comprehensively the occurrence of comorbid diseases in seven cohorts of patients with depression, stroke, multiple sclerosis [MS], Parkinson's disease [PD], dementia, migraine, epilepsy. *Design and Methods:* This cross-sectional study was based on morbidity data recorded by 134 Dutch general practitioners covering a population of N = 276,921. Cohort sizes ranged from N = 241 to N = 6,641. The relation with 37 disease categories was studied by performing comparisons with age and gender matched control cohorts. Multilevel logistic regression analyses were repeated for each case cohort with 10 control cohorts to exclude coincidental findings. *Results:* An extensive range of 26 disease categories was found to be comorbid with depression with lower ORs for somatic (range 1.22–2.48) than for psychiatric comorbidities (range 2.24–4.07). The comorbidity profile of stroke patients was also wide, including 21 disease categories. Patients with migraine and epilepsy both had 11 comorbid disease categories, patients with MS, PD and dementia had less comorbidity. *Conclusion:* People with neurological or psychiatric disease frequently suffer from other conditions. The established relations are relevant for further etiological studies and for providing appropriate care.

523 FLUCTUATING HIGH-SENSITIVITY C-REACTIVE PROTEIN IN STABLE CHRONIC HEART FAILURE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: C-reactive protein (CRP) was shown to predict prognosis in heart failure (HF). *Objective:* To assess variability of CRP over time in patients with stable HF. *Methods:* We measured high-sensitivity CRP (hsCRP) 3 times (3-week intervals) in patients with stable HF. Patients whose hsCRP was > 1 mg/dl or whose clinical status deteriorated were excluded. Two consecutive hsCRP measurements were available for 50 patients: 37 men, mean(SD) age 69.6(11.9) years, 82% depressed left ventricular systolic function. Forty-four patients had a third measurement. Using the cutoff point of 0.3mg/dl for prediction of adverse cardiac events we assessed the proportion of patients who changed risk category. *Results:* Median(P25-P75) baseline hsCRP was 0.19mg/dl(0.12–0.34). hsCRP varied largely particularly for higher levels. The 5th and 95th percentiles of differences between first two measurements were –0.20mg/dl and +0.55mg/dl. Correlation coefficient between these measurements: 0.55, p < 0.001. Eleven (22%) patients changed risk category, kappa = 0.53, p < 0.001. Among patients whose first two measurements were concordant, 16.7% changed category in third

measurement, kappa = 0.65, $p < 0.001$. *Conclusion:* Large variability in hsCRP in stable HF may decrease the validity of risk stratification based on single measurements. It remains to be demonstrated whether the pattern of change over time adds predictive value in HF patients.

524 DETERMINANTS OF ANTIHYPERTENSIVE TREATMENT IN THE GENERAL POPULATION

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: First-choice drug for antihypertensive treatment is controversial. *Objective:* To identify determinants of frequency and patterns of antihypertensive drug treatment. *Methods:* In a health survey, 1889 randomly selected community-dwellers ≥ 40 years were interviewed. Proportions were compared using chi-square test. Treatment probability predictors were identified using multivariate logistic regression. *Results:* Of 1119 hypertensive participants, 542 were treated: 63.1% monotherapy, 29.5% 2 drugs, 7.4% ≥ 3 drugs. Treatment was more prevalent among women (52.8% versus 41.6%, $p < 0.001$), elderly (mean(SD) age 64.5(9.9) versus 60.0(10.9), $p < 0.001$), nonsmokers (50.1% versus 38.0%, $p = 0.008$), diabetics (63.5% versus 46.1%, $p < 0.001$), obese (55.8% versus 48.7% in overweight and 35.8% in normal weight, $p < 0.001$) and with ischemic heart disease (IHD) (79.2% versus 43.9%, $p < 0.001$). 51.5% took diuretic, 39.3% angiotensin converting enzyme inhibitor (ACEI), 19.9% beta-blocker, 16.8% dihydropyridine (DHP), 8.9% nonDHP calcium antagonist (NDHP) and 8.7% angiotensin-II receptor blocker (ARB). Use of ACEI was associated with age and diabetes; beta-blocker with younger age, smoking, IHD; diuretic with female gender, body mass index, absence of IHD; DHP with male gender, IHD; NDHP with IHD and diabetes. *Conclusions:* Prevalence of antihypertensive drug treatment was low and monotherapy was the most frequently prescribed regimen. Age, gender, smoking and cardiovascular comorbidities influenced drug choice.

525 INSTRUMENTAL VARIABLES AND SURVIVAL OUTCOMES: THEORY AND APPLICATION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Instrumental variables can be used to adjust for confounding in observational studies. This method has not yet been applied with censored survival outcomes. *Objectives:* To show how instrumental variables can be combined with survival analysis. *Design and Methods:* In a sample of 415 patients with type-1 diabetes who started renal-replacement therapy in the Netherlands between 1985 and 1996, the effect of pancreas-kidney transplantation versus kidney transplantation on mortality was analyzed using region as the instrumental variable. Because the hospital could not be chosen with this type of transplantation, patients can be assumed to be naturally randomized across hospitals. We calculated an adjusted difference in survival probabilities for every time point including the appropriate confidence interval (CI95%). *Results:* The 5-year difference in survival probabilities between the two transplantation methods, adjusted for measured and unmeasured confounders, was 0.37 (CI95%: 0.18–0.57) favoring the pancreas-kidney transplantation. This is substantially larger than the intention-to-treat estimate of 0.13 (CI95%: 0.01–0.25) where

policies are compared. *Conclusion and discussion:* Instrumental variables are not restricted to uncensored data, but can also be used with a censored survival outcome. Hazard ratios with this method have not yet been developed. The strong assumptions of this technique apply similarly with survival outcomes.

526 LATE CARDIAC TOXICITY AFTER TREATMENT FOR HODGKIN'S LYMPHOMA

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Cardiac diseases cause excess morbidity and mortality in survivors of Hodgkin's lymphoma (HL). *Objective:* Assessment of the incidence of cardiac diseases in long-term survivors of HL. *Material and methods:* We compared the incidence of cardiac diseases with general population rates in 1,019 5-year survivors of HL treated before the age of 31 years between 1965 and 1995. Median age at diagnosis of HL was 22.9 years. Treatment effects on cardiac risk were quantified in multivariate Cox regression analysis. *Results:* After a median follow-up of 19.5 years 277 patients developed cardiac diseases; 62 myocardial infarctions [Standardized Incidence Ratio (SIR) = 5.0; 95%CI: 3.3–11.8] and 36 congestive heart failures [SIR = 8.1; 95%CI: 5.6–11.2]. SIR of coronary heart disease was 5.7 [95%CI: 4.8–6.7] and remained significantly increased up to 30 years of follow-up. Cox regression analysis showed a 3.2-fold (95% CI, 1.6–6.4) increased risk of congestive heart failure after anthracyclines and a 5.3-fold (95% CI, 1.6–16.8) increased risk of coronary heart disease after radiotherapy to the mediastinum. *Conclusion:* The incidence of several cardiac diseases was strongly increased after treatment for HL, even after prolonged follow-up. Anthracyclines increased the risk of congestive heart failure and radiotherapy to the mediastinum increased the risk of coronary heart disease.

527 QUALITATIVE ANALYSIS OF PARENTS, TEACHERS AND STUDENTS' BELIEFS ABOUT EDUCATION OF REPRODUCTIVE HEALTH TO STUDENTS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The concept of reproductive health is emerging as an essential need for health development. *Objectives:* To know the opinions of parents, teachers and students about education of reproductive health issues to students of mid and high schools. *Design and Methods:* Focus Group Discussions (FGD) as a qualitative research was chosen. A series of 24 group discussions with participation of 162 persons (64 students, 50 teachers, and 48 parents) was held. Each group had included 6 to 9 persons. *Results:* All the participants noted to a true need in education of puberty health in order to provide essentials for pre-adolescent students to adopt the psycho- and somatic changes of puberty. However, a few fathers and a group of mothers believed that education of family planning is not suitable for students. A need for education of AIDS and marital problems for students was the major concern in all groups. The female students emphasized a need for programming counseling in pre-marital period. *Conclusion:* Essentials in puberty health, family planning, AIDS and marital problems should be provided in mid- and high schools in order to narrow the knowledge gap of the students.

528 SOCIAL SUPPORT AND PREECLAMPSIA-ECLAMPSIA IN LOW-INCOME PREGNANT AND PUERPERAL WOMEN
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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: The association between social support and hypertension in pregnancy remains controversial. **Objective:** The objective of this study was to investigate whether level of social support is a protective factor against preeclampsia and eclampsia. **Design and Methods:** A case-control study was carried out in a public high-risk maternity hospital in Rio de Janeiro, Brazil. Between July 2003-May 2004, all 225 cases, identified at diagnosis, and 459 controls, matched on gestational age, were included in the study. Participants were interviewed about clinical history, socio-demographic and psychosocial characteristics. The principal exposure was the level of social support available during the pregnancy, using the Medical Outcomes Study scale. Adjusted Odds Ratios were estimated using multivariate conditional logistic regression. **Results:** Multiparous women with a higher level of social support had a lower risk of presenting with preeclampsia and eclampsia (OR = 0.7), although this association was not statistically significant (95% CI 0.4–1.2). In primiparous women, a higher level of social support was seen amongst cases (OR = 2.1; 95% CI 1.5–2.9). An interaction between level of social support and stressful life events was not identified. These results contribute to increased knowledge of the relationship between preeclampsia and psychosocial factors in low-income pregnant and puerperal women.

533 DEVELOPMENT OF AN EPIDEMIOLOGICAL CASE-DEFINITION FOR CHRONIC FATIGUE SYNDROME/MYALGIC ENCEPHALOMYELITIS (CFS/ME)

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Current case-definitions for CFS/ME are designed for clinical-use and not appropriate for health needs assessment. A robust epidemiological case-definition is crucial in order to achieve rational allocation of resources to improve service provision for people with CFS/ME. **Objectives:** To identify the clinical features that distinguish people with CFS/ME from those with other forms of chronic fatigue and to develop a reliable epidemiological case-definition. **Methods-** Primary care patient data for unexplained chronic fatigue was assessed for symptoms, exclusionary and comorbid conditions and demographic characteristics. 101 cases were assigned to disease and non-disease groups by three members of the Chief Medical Officer's Working Group on CFS/ME (reliability- Cronbach's alpha 0.644). **Results:** Preliminary multivariate analyses were conducted and classification and regression tree analysis included a 10-fold cross-validation approach to prevent over fitting. The results suggested that there were at least four strong discriminating variables for CFS/ME with 'post-exertional malaise' being the strongest predictor. Risk and classification tables showed an overall correct classification rate of 81.2%. **Conclusion:** The analyses demonstrated that the application of the combination of the four discriminating variables (the defacto epidemiological case-definition) and pre-defined comorbid conditions had the ability to differentiate between CFS/ME and non-CFS/ME cases.

536 LIFESTYLE FACTORS ASSOCIATED WITH HPV16 AND HPV18 INFECTION IN 5000 UK WOMEN WITH LOW-GRADE ABNORMAL CERVICAL SMEARS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Infection with high-risk human papillomavirus (HPV) is a necessary cause for cervical cancer. Vaccines against the most common types (HPV16, HPV18) are being developed. Relatively little is known about factors associated with HPV16 or HPV18 infection. We investigated associations between lifestyle factors and HPV16 and HPV18 infection. **Methods:** 5031 UK women aged 20–59 years with a recent abnormal cervical smear underwent HPV testing and completed a lifestyle questionnaire. HPV16 and HPV18 status was determined using type-specific PCRs. Associations between lifestyle factors and HPV status were assessed by multivariate logistic regression models. **Results:** 16.5% (95%CI 15.4%–17.6%) of women were HPV16-positive. 8.6% (95% CI 7.9%–9.5%) were HPV18-positive. For both types, the proportion testing positive decreased with increasing age, and increased with increasing grade of cytological abnormality. After adjusting for these factors, significant associations remained between (i) HPV16 and marital, employment, and smoking status and (ii) HPV18 and marital status and contraceptive pill use. Gravity, ethnicity, barrier contraceptive use and socio-economic status were not related to either type. **Conclusions** We identified modest associations between several lifestyle factors and HPV16 and HPV18. Studies of this type help elucidate HPV natural history in different populations and will inform development of future vaccine delivery programmes.

538 TESTOSTERONE SUPPLEMENTATION IN ELDERLY MEN WITH LOW TESTOSTERONE. TRIAL DESIGN AND BASELINE CHARACTERISTICS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

In ageing men testosterone levels decline, while cognitive function, muscle and bone mass, sexual hair growth, libido and sexual activity decline and the risk of cardiovascular diseases increase. We set up a double-blind, randomized placebo-controlled trial to investigate the effects of testosterone supplementation on functional mobility, quality of life, body composition, cognitive function, vascular function and risk factors, and bone mineral density in older hypogonadal men. We recruited 237 men with serum testosterone levels below 17 nmol/l and ages 60–80 years. They were randomized to either four capsules of 40 mg testosterone undecanoate (TU) or placebo daily for 26 weeks. Primary endpoints are functional mobility and quality of life. Secondary endpoints are body composition, cognitive function, aortic stiffness and cardiovascular risk factors and bone mineral density. Effects on prostate, liver and hematological parameters will be studied with respect to safety. Measure of effect will be the difference in change from baseline visit to final visit between TU and placebo. We will study whether the effect of TU differs across subgroups of baseline waist

girth, testosterone level, age, and level of outcome under study. At baseline, mean age, BMI and testosterone levels were 67 (yrs), 27 (kg/m²) and 13.x (nmol/l), respectively.

539 EFFICIENCY BETWEEN TWO TYPES OF ORAL HEALTH EDUCATION PROGRAMMES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

At a student population, the carie's prevalence was 56,28%. *Objectives:* To evaluate the efficiency between two types of oral health education programmes and the adherence towards tooth brushing. *Study Design:* Case control study: 333 youngsters took part, 134 in the case group. An health education programme was carried out in 8 schools and included two types of strategies: a participative strategy (learning based on the colouring of the dental plaque) towards a case group; and a traditional strategy (oral expository method) towards a control group. During the outcome of the programmes, the oral health condition evaluation was done through CPO index, the adherence towards tooth brushing and the (IHO's) oral hygiene index. *Results:* In the initial dental exam the (IHO) average was of 1,60. Three months after the application of the oral health programme, there was a general decrease in the average of IHO's to 1,30. *Discussion and Conclusion:* In the case group the decrease was higher: 0,36 to 0,20. The students submitted to a session of oral health education based on the colouring of the dental plaque showed a lower IHO's average and higher knowledge. This can be due to the teaching session being more active, participative and demonstrative.

542 VIOLENT BEHAVIOUR AMONG HIGH SCHOOL STUDENTS FROM TIMIS COUNTY, ROMANIA

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Violence perpetuated by adolescents is a major problem in many societies. *Objectives:* The aim of this study is to examine high school students' violent behaviour and to identify predictors. *Design and Methods:* A cross-sectional study was conducted in Timis County, Romania between May–June 2004. The sample consisted of 149 randomly selected classes, stratified proportionally according to grades 9–12, high school profile, urban and rural environment. The students completed a self administered questionnaire in their classroom. A weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection. *Results:* A total of 2908 students were included in the survey. During the last 12 months, 24.3% of adolescents got mixed into a physical fight outside school and 14.5% on school property. Significant predictors are: male gender (OR = 4.93; 95%CI: 3.80–6.39), verbal aggression (OR = 2.45; 95%CI: 1.92–3.13), binge drinking (OR = 1.74; 95%CI: 1.34–2.26), higher levels of truancy (OR = 1.87; 95%CI: 1.32–2.65), poor school performance (OR = 1.92; 95%CI: 1.05–3.51), carrying a weapon (OR = 2.39; 95%CI: 1.79–3.19), having physically aggressive friends (OR = 1.74; 95%CI: 1.39–2.18), not so satisfied about relationship with parents (OR = 2.47; 95%CI: 1.53–3.99). *Conclusion:* The predictors identified by the survey can be used in preventive programmes.

544 PERCEIVED RISKS OF DRUG USE AMONG HIGH SCHOOL STUDENTS FROM TIMIS COUNTY, ROMANIA

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Drug use by adolescents has become an increasing public health problem in many countries. *Objectives:* The aim of this study is to identify prevalence of drug use and to examine high school students' perceived risks of substance use. *Design and Methods:* A cross-sectional study was conducted in Timis County, Romania between May–June 2004. The sample consisted of 149 randomly selected classes, stratified proportionally according to grades 9–12, high school profile, urban and rural environment. The students completed a self administered questionnaire in their classroom. Eighteen items regarding illicit drug use suggesting different intensity of use were listed. The response categories were 'no risk', 'slight risk', 'moderate risk', 'great risk' and 'don't know'. *Results:* A total of 2908 students were included in the survey. The lifetime prevalence of any illicit drug was 5.3%. Significant beliefs associated with drug use are: trying marijuana once or twice ($p < 0.001$), smoking marijuana occasionally ($p = 0.003$), trying LSD once or twice ($p = 0.035$), trying cocaine once or twice ($p = 0.001$), trying heroine once or twice ($p = 0.002$). *Conclusion:* The overall drug use prevalence is small. However, use of some drugs once or twice is not seen as a very risky behaviour.

545 LONGTERM PREVALENCE OF POSTTRAUMATIC STRESS DISORDER SYMPTOMS IN PATIENTS AFTER SURGERY FOR SECONDARY PERITONITIS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Severely ill patients are at increased risk for developing post-traumatic stress (PTSD) symptoms; some have argued that ICU-stay aggravates this risk. *Objective:* To determine the longterm prevalence of PTSD symptoms after secondary peritonitis and whether ICU-stay was an independent risk factor. *Methods:* A cohort of consecutive patients treated for secondary peritonitis were sent the Posttraumatic Stress Syndrome inventory (PTSS-10) and Impact of Events Scale-Revised (IES-R) 4–10 years following their surgery for secondary peritonitis. *Results:* From the 278 patients operated upon between 1994 and 2000, questionnaires were sent to the 131 long-term survivors of which 88% responded ($n = 101$). PTSD-related symptoms were found in 17% of patients by both questionnaires. Patients admitted to ICU ($n = 39$) were significantly older, with higher APACHE-II scores, but reported similar PTSD symptomology scores compared to non-ICU patients ($n = 61$). Traumatic memories during ICU and hospital-stay were most predictive for higher scores. Adverse memories did not occur more often in the ICU group than in the hospital-ward group *Conclusions:* Longterm PTSD-related symptoms in patients with secondary peritonitis were very prevalent in both patients admitted to ICU and hospital ward. Traumatic memories during ICU or hospital ward stay were most predictive of these scores.

549 EVALUATION OF USER SATISFACTION WITH THE HEALTH OMBUDSMAN SERVICE IN BRAZIL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The Health Ombudsman Service was created in Ceará, Brazil, in 1991, with the objective of receiving user opinions about public services. **Objectives:** To describe user profiles, evaluating their satisfaction with health services and the ombudsman service itself. **Design and Methods:** A transversal and exploratory study with a random sample of 292 users who had used the service in the last three months. The data were analyzed with the Epi Info program. **Results:** Women were those who used the service most (74.1%). The users sought the service for complaints (64.7%), guidance (12.3%) and commendation (11.5%). Users made the following complaints about health services: lack of care (57.8%), poor assistance (52.0%) lack of medication (8.6%). In relation to the ombudsman service, the following failures were mentioned: lack of autonomy (14.7%), delay in solving problems (8.0%) and few ombudsmen (6.6%). **Conclusion:** Participation of the population in use of the serviced is small. The service does not satisfy the expectations of users, it is necessary to publicize the service and try to establish an effective partnership between users and ombudsmen so that the population finds in the Ombudsman Service an instrument to put into effect social control and improve the quality of health services.

554 INSULIN RESISTANCE IS ASSOCIATED WITH BREAST CANCER IN CHILEAN WOMEN ONLY AFTER MENOPAUSE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

In Chile, the rates of breast cancer and diabetes have dramatically increased in the last decade. The role of insulin resistance in the development of breast cancer, however, remains unexplored. We conducted a hospital-based case-control to assess the relationship of insulin resistance (IR) and breast cancer in Chilean pre and postmenopausal women. We compared 175 women, 33–86 y, with incident breast cancer diagnosed by biopsy and 209 controls with normal mammography. Insulin and glucose were measured in blood and IR was calculated by homeostasis model assessment method. Anthropometric measurements and socio-demographic and behavioural data were also collected. Odds ratios (ORs) and 95% confidence intervals (CIs) were estimated by multivariate logistic regression. The risk of breast cancer increased with age. IR was significantly associated to breast cancer in postmenopausal women (OR = 2.03, 95%CI = 1.11–3.74), but not in premenopausal ($p > 0.05$). Socioeconomic status and smoking appeared as important risk factors for breast cancer. Obesity was not associated with breast cancer at any age ($p > 0.05$). In these women, IR increased the risk of breast cancer only after menopause. Overall, these results suggest a different risk pattern for breast cancer before and after menopause. **Keywords:** Insulin resistance; Breast Cancer; Chile.

556 AVAILABILITY AND COMPARABILITY OF INFORMATION FOR ECHI INDICATORS IN EUROPEAN HEALTH SURVEYS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Previous European Community Health Indicators (ECHI) projects have proposed a shortlist of 82 indicators as a common conceptual structure for health information. The European Community Health Indicators and Monitoring (ECHIM) is a 3-year project to develop and implement health indicators and to develop health monitoring. **Objectives:** Our aim is to assess the availability and comparability of the ECHI-shortlist indicators in European countries. **Methods:** Four widely used health indicators i) perceived general health ii-iii) prevalence of any and certain chronic diseases or conditions iv) limitations in activities of daily living (ADL) were evaluated.

Our evaluation of available sources for these indicators is based on the European Health Interview & Health Examination Surveys Database (171 surveys). Encountered methodological and other problems of the selected indicators are illustrated. **Results:** Availability and comparability of perceived general health as well as prevalence of chronic conditions is quite good. Comparable indicators are available for most European countries from various surveys. The comparability of ADL-indicators is poorer, as various different instruments are in use. **Conclusions** This international comparison of health indicators highlights methodological problems encountered when comparing data from several countries. Further development of standardised instruments corresponding to the ECHI definitions and international harmonisation must continue.

561 IS RECOMMENDABLE THE CONSUMPTION OF FRUITS AND VEGETABLES FOR PREVENTING BREAST CANCER IN CHILEAN WOMEN?

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

In Chile, breast cancer, obesity and sedentary behaviour rates are increasing. The role of specific nutrients and exercise in the risk of breast cancer remains unclear. The aim of the present study was to evaluate the role of fruits and vegetables intake and physical activity in the prevention of breast cancer. We undertook an age matched case-control study. Cases were 170 women with breast cancer histologically confirmed and controls were 170 women with normal mammography, admitted to the same hospital. A structured questionnaire was used to obtain dietary information and measurement of physical activity was obtained from the International Physical Activity Questionnaire. Odds ratios (ORs) and 95% confidence intervals (CIs) were estimated by conditional logistic regression adjusted by obesity, socioeconomic status and smoking habit. A significant association was found with fruit intake (OR = 0.57, 95%CI = 0.35–0.94). The consumption of vegetables (OR = 0.91, 95%CI = 0.80–1.04), moderate (OR = 1.00, 95%CI = 0.62–1.59) and high physical activity (OR = 1.13, 95%CI = 0.51–2.50) were not observed as protective factors. In conclusion, the consumption of fruit is protective in breast cancer. These findings need to be replicated at Chile to support the role of diet and physical activity in breast cancer and subsequence contribution in public health policy. **Keywords:** Diet; Physical Activity; Breast Cancer; Chile.

562 SERUM CONCENTRATIONS OF ZINC, COPPER, MANGANESE AND MAGNESIUM IN PATIENTS WITH LIVER CIRRHOSIS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

The role of trace elements in pathogenesis of liver cirrhosis and its complications is still not clearly understood. Serum concentrations of zinc, copper, manganese and magnesium were determined in 100 patients with alcoholic liver cirrhosis and 50 healthy subjects by means of plasma sequential spectrophotometer. Serum levels of zinc were significantly lower (median 0.77 vs 11.0 μ mol/l, $p = 0.001$) in patients with liver cirrhosis in comparison to controls. Serum levels of copper were significantly higher in patients with liver cirrhosis (23.71 vs 13.32 μ mol/l, $p < 0.001$) as well as manganese (4.60 vs 0.02 μ mol/l, $p = 0.001$). Concentration of magnesium was not significantly different between patients with liver cirrhosis and controls (0.94 vs 0.88 mmol/l, $p = 0.060$). There was no difference in trace elements concentrations between Child-Pugh groups. Zinc level was significantly lower in patients with hepatic encephalopathy in comparison to cirrhotic patients without encephalopathy (0.60 vs 0.96 μ mol/l, $p = 0.020$). Manganese was significantly higher in cirrhotic patients with ascites in comparison to those without ascites (6.05 vs 2.60 μ mol/l, $p = 0.039$). Correction of trace elements concentrations might have beneficial effect on complications and maybe progression of liver cirrhosis. It would be recommendable to provide analysis of trace elements as a routine.

563 PASSIVE SMOKING AND SIBLINGS ENHANCE THE ASSOCIATION BETWEEN ATOPY AND RECURRENT RESPIRATORY TRACT INFECTIONS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Respiratory tract infections (RTI) are very common in childhood and knowledge of pathogenesis and risk factors is required for effective prevention. **Objective:** To investigate the association between early atopic symptoms and occurrence of recurrent RTI during first 4 years of life. **Design and Methods:** In the prospective Prevention and Incidence of Asthma and Mite Allergy birth cohort study, 4146 children were followed from birth to the age of 4 years. Information on atopic symptoms, potential confounders, and effect modifiers like passive smoking, daycare attendance and presence of siblings was collected at ages 3 months and 1 year by parental questionnaires. Information on RTI was collected at ages 1, 2, 3, and 4 years. **Results:** Children with early atopic symptoms, i.e. itchy skin rash and/or eczema or doctor-diagnosed cow's milk allergy at 1 year of age had a slightly higher risk to develop recurrent RTI (aOR 1.20 (0.83–1.73); and 1.98 (1.06–3.70), respectively). The association between atopic symptoms and recurrent RTI was stronger in children whose mother smoked during pregnancy and who had siblings (aOR 4.12 (1.47–11.49)). **Conclusions:** Children with atopic symptoms have an

increased risk to develop recurrent RTI. This association is enhanced by presence of siblings and maternal smoking.

568 METABOLIC HAZZARS OF OBESITY. POLISH MULTICENTER STUDY ON DIABETES EPIDEMIOLOGY

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

The aim : The aim of the study was to assess the Relative Risk (RR) of obesity and abdominal fat distribution on the insulin resistance (IR), diabetes, hyperlipidemia and hypertension in Polish population. **Materials and methods:** 6000 subjects at age 35–75, were randomized and invited to the study. In 2838 participants anthropometric and blood pressure examination was performed. Fasting lipids, fasting and after glucose load glucose and insulin were determined. IR was defined as the upper quartile of the HOMA-IR distribution for the normal glucose tolerant population. **Results:** Overweight and obesity was observed in 39,7% and 25,1% of subjects. Visceral obesity was found in 2143 subjects (88,9%-men and 73,4%-women). RR of IR in obesity was 3,94 (95% CI:3,09–5,04), for obese subjects at age below 45 was 6,6 (95% CI:3,6–12,0). In men with visceral obesity RR of IR was the highest for men aged below 55. RR of diabetes was increasing with the increase of body weight, in obese subjects with abdominal fat distribution was 2,88 (95%CI:2,20–3,79). The same was observed for the hypertension and hyperlipidemia. **Conclusions:** Obesity and the abdominal fat distribution seems to be an important risk factor of IR, diabetes, hypertension, hyperlipidemia, especially in the younger age groups.

570 AGE MODIFIES THE EFFECT OF CLASSICAL MYOCARDIAL INFARCTION RISK FACTORS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Age as an effect modifier in cardiovascular risk remains unclear. **Objective:** To evaluate age-related differences in the effect of risk factors for acute myocardial infarction (AMI). **Methods:** In a population-based case-control study, with data collected by trained interviewers, 696 consecutive male cases of first myocardial infarction (participation rate 98%) and 867 randomly selected male control dwellers (participation rate 70%) were compared. Effect-measure modification was evaluated by the statistical significance of a product term of each independent variable with age. Unconditional logistic regression was used to estimate ORs in each age stratum (<46 years/>45 years). **Results:** There was a statistically significant interaction between education (>9 vs. <5 years), sports practice, diabetes and age: the adjusted (education, AMI family history, dyslipidemia, hypertension, diabetes, angina, waist circumference, sports practice, alcohol and caffeine consumption, and energy intake) ORs (95%CI) were respectively 0.16 (0.07–0.33), 0.76 (0.45–1.28) and 8.35 (1.64–42.6) in younger, and 0.46 (0.30–0.69), 0.36 (0.24–0.52) and 1.84 (1.08–3.16) in older participants. **Conclusions:** In males, age has a significant interaction with education, sports practice and diabetes in the occurrence of AMI. The effect is evident in the magnitude but not in the direction of the association.

571 DIETARY FACTORS DECREASING THE RISK OF LEADING HISTOLOGICAL LUNG CANCER TYPES IN MEN

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

There are few studies on the role of diet in lung cancer etiology. Thus, we calculated both, squamous cell and small cell carcinoma risks in relation to the frequency of consumption of vegetables, cooked meat, fish and butter in Silesian male in industrial area of Poland. In the case-control study, the studied population comprised 237 men with squamous cell carcinoma and 122 men with small cell carcinoma, and 649 healthy controls. Multivariate logistic regression was employed to calculate lung cancer risk in the relation to simultaneous influence of dietary factors. The relative risk was adjusted for age and smoking. We observed a significant decrease in lung cancer risk related to more frequent consumption of raw vegetables, cooked meat and fish. However, stronger protective effect was reported for squamous cell carcinoma. Frequent fish consumption significantly decreases the risk especially in cigarette smokers. The frequent consumption of pickles lowers squamous cell carcinoma risk in all cases but small cell carcinoma risk only in smokers. The presence of butter, cooked meat, fish and vegetables in diet significantly decreases the lung cancer risk especially in smokers. The association between diet and lung cancer risk is more pronounced for squamous cell carcinoma.

572 FROM PATIENT IDENTIFICATION TO TRIAL PARTICIPATION; SELECTION MECHANISMS IN IRRITABLE BOWEL SYNDROME RESEARCH

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: In functional disease research selection mechanisms need to be studied to assure external validity of trial results. **Objective:** We compared demographic and disease-specific characteristics, history, co-morbidity and psychosocial factors of patients diagnosed, approached and randomised for a clinical trial analysing the efficacy of fibre therapy in Irritable Bowel Syndrome (IBS). **Design and Methods:** In primary care 1078 patients were diagnosed with IBS by their GP in the past two years. Characteristics were compared between (1) randomised patients (n = 108); (2) patients who did not give their informed consent (n = 235); (3) patients who decided not to participate (n = 270); and (4) those not responding to the mailing (n = 465). **Results:** The groups showed no significance differences in age and gender (74% females, mean age 41 years, s.d. 12). Patients consulting their GP for the trial compared to patients not attending their GP showed significant more severe IBS symptoms, more abdominal pain during the previous three months, and a longer history of IBS (p < 0.001). Patients randomised have more comorbidity (p = 0.001). **Conclusion and Discussion:** Patients included in this IBS trial differ from no participating and excluded patients mainly in IBS symptomatology, history and comorbidity. This may affect the external validity of the trial results.

573 ANTENATAL ANTI-D-PROPHYLAXIS WITH 1000 IE IN WEEK 30 IS EFFECTIVE IN PREVENTION OF RHESUS-D-IMMUNIZATION

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Rhesus(Rh)-D-immunization can cause severe hemolytic disease of the newborn. Since 1969 a national prevention programme is running, which reduced RhD-immunization with 80%. Since 1-7-1998 Rh-D-negative Dutch women also receive antenatal anti-D-prophylaxis with 1000 IE anti-D in week 30 of first pregnancy to further reduce the risk for Rh-D-immunization. **Objective:** To determine the effect of antenatal anti-D-prophylaxis (1000 IE) on the incidence of Rh-D-immunization in next pregnancy. **Methods:** Population study. All parae-I (one foregoing delivery) with Rh-D-immunization identified by nationwide red cell antibody screen in 1999/2002/2004 were included. Based on known birth-intervals between first and second children (National Birth Statistics), numbers of women with and without antenatal anti-D prophylaxis were calculated. **Results:** New Rh-D-antibodies were detected in 133 women in second pregnancy; 33 received accidentally no postnatal prophylaxis after first delivery; for 8 this was uncertain. Antenatal prophylaxis was given to 37/92 women (38/100 including women with uncertain prophylaxis). Incidence of RhD-immunization after only postnatal anti-D-prophylaxis in 1999/2002/2004 was 54-63/9.434 = 0.57-0.67%; after antenatal and postnatal anti-D-prophylaxis 37-40/13.695 = 0.27-0.29%. Relative Risk 0.40-0.51. **Conclusion:** Antenatal anti-D-prophylaxis with 1000 IE reduces Rhesus-D-immunization in the next pregnancy with 50-60%. This is in line with previous published, smaller, studies in the UK.

574 PREVALENCE OF RISK FACTORS FOR CIGARETTE SMOKING AMONG PORTUGUESE TEENAGERS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objectives: To evaluate smoking prevalence among teenagers and identify associated social-behavioral factors. **Study Design and Methods:** A cross sectional-study was carried out in May (2004) in high school population (7th-12th grades) in the north of Portugal (n = 1005). A confidential self-reported questionnaire was administered. Crude and adjusted Odds Ratios and confidence intervals were calculated by logistic regression analysis. **Results:** Overall smoking prevalence was 19.5% (boys = 26.1%; girls = 14.6%) (OR = 2.06; CI 95% = 1.50-2.83; p < 0.001). Smoking prevalence was significantly and positively associated with gender, smoking parents, school failure and school grade; in the group of students with smoking relatives, smoking was significantly associated with parents who smoke near the student (OR = 4.32; CI 95% = 2.41-7.74; p < 0.001); in the group of the secondary grade (10th-12th grades) smoking was significantly associated with belonging to 'non science-courses' (OR = 1.81; CI 95% = 1.18-2.78; p = 0.007). **Conclusions:** Smoking is a growing problem among Portuguese adolescents, increasing with age, prevailing among males, although major increases have been documented in the female population. Parents' behaviours and habits have an important impact in their children's smoking behaviour.

School failure is also an important factor associated with smoking. There is a need for further prevention programmes that should include families and consider students' social environment.

575 AGE, ARTIFICIAL DELIVERY, POSTMATURITY ARE RISK FACTORS FOR RHESUS-D-IMMUNIZATION DESPITE ADEQUATE ANTI-D-PROPHYLAXIS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Rhesus(Rh)-D-immunization can cause severe hemolytic disease of the newborn. Since 1969 RhD-negative Dutch women receive postnatal anti-D-prophylaxis (1000 IE); since 1-7-1998 also antenatal anti-D-prophylaxis (1000 IE) in week 30 of first pregnancy. **Objectives:** To determine risk factors for Rh-D-immunization despite antenatal and postnatal anti-D-prophylaxis in first pregnancy. **Methods:** Case-control study. Cases: 41 RhD-immunized Parae-1, detected by routine antibody screen early in second pregnancy, who received ante- and postnatal anti-D-prophylaxis in first pregnancy. **Controls:** 342 RhD-negative or -positive Parae-1 without antibodies. Data were collected from obstetric caregivers, laboratories or women themselves. Factors with p-value < 0.20 in univariate analysis were analyzed by multivariate logistic regression analysis. **Results:** Risk factors: younger age (0.865/year; 95%-CI: 0.77-0.97), complicated assisted delivery (OR 50.8; 95%-CI: 1.2-2153), postmaturity (OR 4.0; 95%-CI: 1.1-14.3), caesarean section (OR 2.9; 95%-CI: 1.1-7.7). Of cases 59% showed none of the last three risk factors. **Conclusion:** In about 40% of cases increased fetomaternal hemorrhage, as associated with artificial delivery, or insufficient antenatal prophylaxis late in pregnancy upon postmaturity, may contribute to failure of anti-D-prophylaxis. More strict compliance to existing guidelines concerning determination of fetomaternal hemorrhage and accordingly adjusted anti-D-prophylaxis or routinely administration of extra anti-D-prophylaxis after artificial delivery, might further decrease RhD-immunization.

576 A MULTILEVEL ANALYSIS OF SUBSTANCE ABUSE IN POLISH UPPER- SECONDARY SCHOOL STUDENTS: IMPORTANCE OF SCHOOL CONTEXT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Social environment of school can contribute to etiology of health behaviors. **Objective:** To evaluate the role of school context for substance abuse in youth. **Design:** A cross-sectional study was carried out in 2005, using self-completed classroom-administered questionnaire. **Subjects:** From a representative sample of 2893 students, a sub-sample of 1880 students was selected (including 85/130 classes with at least 15 persons without missing data)*. **Methods:** Substance abuse was measured by: tobacco smoking at present, episodes of drunkenness and marijuana use in the lifetime. Overall index was created as main independent variable, ranging 0-9 (Cronbach's alpha = 0.71). Class membership, type of school, gender, place of domicile, and school climate were included as contextual variables, measured on individual or group level. **Results:** On individual level, the mean index was equal to 3.5 (SD = 2.9), and ranged from 3.1 in general comprehensive schools to 4.6 in basic vocational schools and from 1.0 to 7.4 for separated classes. About 16.3% of total variance in this index may be attributed to differences between classes. **Conclusion:** Individual differences in substance abuse in youth could be partly explained by factors at school level. * Project No 2 POSD 064 27.

578 SOCIAL INEQUALITIES MEDIATE THE ASSOCIATION BETWEEN TYPE OF DELIVERY AND POSTPARTUM COMPLICATIONS IN BRAZIL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Rates of C-section in Brazil are very high, 33.8% in 2004. Brazil illustrates an extreme example of medicalization of birth. C-section, as any major surgery, increases the risk of morbidity, which can persist long after discharge from hospital. **Objectives:** To investigate how social, reproductive, prenatal care and delivery factors interact after hospital discharge, influencing post partum complications. **Design and Methods:** A cross-sectional study of 200 women gathered information through home interviews and clinical examination during post-partum. A Hierarchical Logistic Regression Model of factors associated with post-partum complications was applied. **Results:** Physical and emotional post partum complications were almost twice as high among women having C-section. Most of this effect were associated with lower socioeconomic conditions which influences, were mainly explained by longer duration of delivery (even in the presence of medical indications), and less social support when returning home. **Conclusion:** Risk of C-section complications is higher among women from the lower socioeconomic strata. Social Inequalities mediate the association between type of delivery and postpartum complications. **Discussion:** C-section complications should be taken into account when decisions concerning type of delivery are made. Social support after birth, from the public health sector, has to be provided for women in socioeconomic deprivation.

580 EFFECT OF UNEMPLOYMENT LEVEL ON SURVIVAL DURING TRANSITION IN POLAND - A SMALL-AREA ECOLOGICAL STUDY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

The relationship between unemployment and increased mortality was previously reported in western countries. The aim of this study was to assess the influence of the changes in unemployment rate on survival in general population in Northern Poland at the time of economic transition. To analyze the association between the unemployment and risk of death we collected survival data from 62736 death certificates and data on rates of unemployment from 8 regions of Gdansk County from period 1991-1996. Kaplan-Meier method and Cox proportional hazard model were used in univariate and multivariate analysis. A change of unemployment (percentage) in the year of death in the area of residence, sex and educational level (6 categories) were included into multivariate analysis. The change of unemployment rate was associated with significantly worse overall survival: hazard ratio 1.02 95% confidence interval 1.016 to 1.024. The highest risk associated with the change of unemployment in the area of residence was for death from congenital defects (hazard ratio 1.16 95% confidence interval 1.04 to 1.3) and for death from cardiovascular diseases (hazard ratio 1.036 95% confidence interval 1.032 to 1.042). **Conclusion:** The change of unemployment rate may be a useful ecological measure of socioeconomic risk factors influencing survival.

582 AN INTERVENTION TO IMPROVE ADVERSE DRUG EVENT REPORTING: A CLUSTER-RANDOMIZED TRIAL AMONG PORTUGUESE PHYSICIANS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: There is no evidence from randomized trials as to whether or not educational interventions improve voluntary reporting systems in terms of quantity or quality. *Objectives:* Evaluation of the effectiveness of educational outreach visits aimed at improving adverse drug reaction (ADR) reporting by physicians. *Design and Methods:* Cluster-randomized controlled trial covering all Health System physicians in northern Portugal. Four spatial-clusters assigned to intervention group (n = 1388) received outreach visits tailored to training needs detected in previous study and 11 clusters were assigned to the control (n = 5063). The main was the total number of reported ADR; the second was the number of serious, unexpected, high-causality and new-drug-related ADR. A follow-up was conducted for a period of 30 months. **RESULTS:** The intervention increased reports as follows: total ADR, 9.7-fold (P < 0.0001); serious ADR, 6.1-fold (P = 0.001); high-causality ADR, 8.5-fold (P < 0.001); unexpected ADR, 32.6-fold (P < 0.001); and new-drug-related ADR, 8.2-fold (P = 0.002). The intervention had its maximum effect during the first four months (23.3-fold increase, P < 0.001), yet the effect was nonetheless maintained over the four 4-month periods post-intervention (P = 0.06). *Discussion and Conclusion:* Physician training based on academic detailing visits improves reporting quality and quantity. This type of intervention could result in sizeable improvements in voluntary reporting in many countries.

586 SOCIAL INEQUALITIES AND INVERSE EQUITY UNDERLYING HIGH RATES OF CESAREAN SECTION IN SOUTH BRAZIL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Non-medically indicated C-sections increase risks for mothers and babies. In Brazil, 33.8% of deliveries in 2004, were by cesarean, with rates well above the expected for medical indications in both, the private and the public sector. *Objectives:* To investigate associations between social factors and cesarean rates. Our research question was: Can the 'inverse equity hypothesis' explain trends in cesarean rates in Santa Catarina State from 2000 to 2004? *Design and Methods:* Data from the Brazilian Registry of Birth Certificates was used to estimate Prevalence Ratios (PR) of cesarean among primiparae (123,104 deliveries) for social variables and year of delivery (2000 to 2004). PR were adjusted using Poisson Regression. *Results:* Adjusted PR were highly associated (p < 0.001) with higher maternal literacy, greater number of prenatal consultations and white skin color of the newborn; a significant decrease in PR in the period appeared for all social variables. *Conclusion:* The higher rates among the wealthier groups suggests the 'inverse equity hypothesis' where access to technology varies inversely with socioeconomic status and risk. *Discussion:* Greater access of lower socioeconomic groups to technology and more liberal decisions towards cesarean, may contribute to explain these

findings. Interventions should focus on maternity staff and service organization.

588 MEDICAL INDICATIONS CANNOT EXPLAIN THE HIGH RATES OF CESAREAN SECTIONS IN SOUTH BRAZIL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Non-medical factors have been associated with the high rates of cesarean-sections in Brazil, 33.8% in 2004. However, no evidence of association between higher rates and better outcomes for mother and child were found. *Objectives:* To investigate factors associated with cesarean rates, from 2002 to 2004, under the hypothesis that medical indications cannot explain differences. *Design and Methods:* A cross-sectional study of 2,960 deliveries in a University Hospital in South Brazil in 2002 and 2004. Differences in adjusted Prevalence Ratios (PR) and in Population Attributable Risk (PAR) for absolute and relative indications and non-medical factors were estimated for each year of delivery. *Results:* Cesarean rates increased from 30.7% in 2002 to 39.6% in 2004. Differential in rates (2002–2004) were attributable to time of delivery and previous cesarean. Relative medical indications, mainly dystocia and fetal distress, were more commonly assigned in 2004 (p = < 0.001). There were no evidence of differences in absolute indications between the years. *Conclusion:* Most of the increase in rates in the period may be attributable to relative and non-medical indications. *Discussion:* Policies to promote rational use of C-sections should take into account the role played by obstetrician's convenience and the increased medicalization of birth on cesarean rates.

595 IDEFICS: IDENTIFICATION AND PREVENTION OF DIETARY- AND LIFESTYLE-INDUCED HEALTH EFFECTS IN CHILDREN AND INFANTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: The changing environment has led to unhealthy dietary habits and low physical activity of children resulting in overweight/obesity and related comorbid conditions. *Objective:* IDEFICS is a five-year multilevel epidemiological approach proposed under the sixth EU framework to counteract the threatening epidemic of diet- and lifestyle-induced morbidity by evidence-based interventions. *Design and Methods:* A population-based cohort of 17,000 children 2 to 10 years old will be established in nine European countries to investigate the aetiology of these diseases. Culturally adapted multi-component intervention strategies will be developed, implemented and evaluated prospectively. *Results:* IDEFICS compares regional, ethnic and sex-specific distributions of the above disorders and their key risk factors in children within Europe. The impact of sensory perception, genetic polymorphisms and the role of internal/external triggers of food choice and children's consumer behaviour are elucidated. Risk profile inventories for children susceptible to obesity and its co-morbid conditions are identified. Based on controlled intervention studies an evidence-based set of guidelines for health promotion and disease prevention is developed. *Conclusions:* Provision of effective intervention modules, easy to implement in larger populations, may reduce future obesity related disease incidence. *Discussion:* Transfer of

feasible guidelines into practice requires involvement of health professionals, stakeholders and consumers.

596 SOURCE OF PAYMENT, OBSTETRICIAN PROFILE AND WOMENS PREFERENCES EXPLAINING HIGH CAESAREAN RATES IN SOUTH BRAZIL

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Non-medically indicated cesarean deliveries increase morbidity and health care costs. Brazil has one of the highest rates of caesarean sections in the world. Variations in rates are positively associated with socioeconomic status. *Objectives:* To investigate factors associated with cesarean sections in public and private sector wards in South Brazil. *Design and Methods:* Cross sectional data from post partum interviews and clinical records of 216 consecutive deliveries (112 in the main public and 104 in a private maternity) was analyzed using logistic regression. *Results:* Multiple regression showed privately insured women having much higher cesarean rates than those delivering in public sector wards (OR = 9.4; CI95%: 4.5–32.6). Obstetricians individual rates varied from 38%–100%. Doctors working in both, public and private sectors had a higher rates of cesarean in private wards ($p < 0.01$). Wanting and having a cesarean was significantly more common among privately insured women. *Conclusion:* Women from wealthier families are at higher risk of cesarean, particularly those willing this type of delivery and whose obstetrician works in the private sector. *Discussion:* Women potentially at lower clinical risk are more like to have a caesarean. The obstetricians' role and women's preferences must be further investigated to tackle this problem.

598 EFFECTIVENESS OF BCG-VACCINATION OF IMMIGRANT CHILDREN IN THE NETHERLANDS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: In the Netherlands, BCG-vaccination is offered to immigrant children and children of immigrant parents in order to prevent severe tuberculosis. The effectiveness of this policy has never been studied. *Objectives:* Assessing the effectiveness of the BCG-vaccination policy in the Netherlands. *Design and Methods:* We used data on the size of the risk population per year (from Statistics Netherlands), number of children with meningitis or miliary tuberculosis in the risk population per year, and vaccination status of those cases (from the Netherlands Tuberculosis Register) over the period 1996–2003. We estimated the vaccine efficacy and annual risk of acquiring meningitis or miliary tuberculosis by log-linear modelling and treating the vaccination coverage as missing data. *Results:* In the period 1996–2003 13 cases of meningitis or miliary tuberculosis were registered. The risk for unvaccinated to children to acquire such a serious tuberculosis infection was 4.54 (95%CI 2.26–9.62) per 100000 per year; the reduction in risk for vaccinated children was 81% (95%CI 31–94%). *Conclusion and Discussion:* This means that, discounting future effects with 4%, a 1088 (95%CI: 560–2500) extra children should be vaccinated to prevent one extra case of meningitis or miliary tuberculosis. Given that BCG-vaccination is relatively inexpensive, the current policy could even be cost-saving.

600 PSYCHOTIC EXPERIENCES IN THE GENERAL POPULATION: LONGITUDINAL PATTERNS ASSOCIATED WITH TWO SYNDROMES

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Psychotic symptom experiences in the general population are frequent and often longlasting. *Objectives:* The Zurich Cohort Study offered the opportunity of differentiating the patterns of psychotic experiences over a span of 20 years. *Design and Methods:* The Zurich Study is based on a stratified community sample of 591 persons born in 1958 (women) and 1959 (men). The data were collected at six time points since 1979. We examined variables from two subscales of the SCL-90-R – ‘paranoid ideation’ and ‘psychoticism’ – using factor analysis, cluster analysis and polytomous logistic regression. *Results:* Two new subscales were derived representing ‘thought disorders’ and ‘schizotypal signs’. Continuously high symptom load on one of these subscales (both subscales) was found in 7% (1.7%) of the population. Cannabis use was the best predictor of continuously high symptom load in the ‘thought disorders’ subscale, whereas several variables representing adversity in childhood / youth were associated with continuously high symptom load in the ‘schizotypal signs’ subscale. *Conclusion and Discussion:* Psychotic experiences can be divided at least in two different syndromes – thought disorders and schizotypal signs. Despite similar longitudinal course patterns and also similar outcomes these syndromes rely on different risk factors, thus possibly defining separate pathways to psychosis.

601 COMPARISON OF EUROPEAN BIRTH COHORT STUDIES ON ASTHMA AND ALLERGIC DISEASES - A GA2LEN INITIATIVE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: The reasons for the rise in asthma and allergies remain unclear. To identify influential factors several European birth cohort studies on asthma and allergic diseases have been initiated since 1985. *Objective:* The aim of one work package within the Global Allergy and Asthma European Network (GA2LEN), sponsored by the European Commission, was to identify and compare European birth cohorts specifically designed to examine asthma and allergic diseases. *Methods:* For each study, we collected detailed information (mostly by personal visits) regarding recruitment process, study setting, follow-up rates, subjective/objective outcomes and exposure parameters. *Results:* By June 2005, we assessed 18 European birth cohort studies on asthma and allergic

diseases. The largest 5 recruited over 3000 children each. Most studies determined specific Immunoglobulin E levels to various allergens or used the ISAAC questionnaire for evaluation of asthma or allergic rhinitis symptoms. However, the assessment of other objective and subjective outcomes (e.g. lung function or definitions of eczema) were rather heterogeneous across the studies. **Conclusions** Due to the unique cooperation within the GA2LEN project a common database was established containing study characteristics of European birth cohorts on asthma and allergic diseases. The possibility to pool data and perform meta-analyses is currently being evaluated.

602 SOCIAL INEQUALITY IN BIRTH WEIGHT. A NORDIC COMPARATIVE AND COLLABORATIVE STUDY OF THE DEVELOPMENT 1980–2005

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Birth weight is an important marker of health in infancy and health trajectories later in life. Social inequality in birth weight is a key component in population health inequalities. **Objective:** To comparatively study social inequality in birth weight in Denmark, Finland, Norway, and Sweden from 1980 to 2005. **Design and Methods** As part of the NORdic Collaborative project on Health And Social inequality in Early life (NORCHASE), register-based data covering all births in all involved countries 1980–2005 was linked with national registries on parental socio-economic position, covering a host of different markers including income, education and occupation. Also, nested cohort studies provide opportunity to test hypotheses of mediation. **Results:** Preliminary results show that the social inequality in birth weight, small for gestational age, and low birth weight has increased in Denmark through out the period. Also, preliminary results from Finland, Norway and Sweden will be presented. **Discussion:** Cross-country comparisons pose several methodological challenges. These challenges include characterizing the societal context of each country so as to correctly interpret inter-country differences in social gradients, along with dealing with differences in the data collection methods and classification schemes used by different national registries. Also, strategies for influencing policy will be discussed.

603 FIREARM SUICIDES AND THE AVAILABILITY OF FIREARMS: ANALYSIS OF LONGITUDINAL INTERNATIONAL DATA

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Modifying the availability of suicide methods is a major issue in suicide prevention. **Objectives:** We investigated changes in the proportion of firearm suicides in Western countries since the 1980's, and their relation to the change of legislation and regulatory measures. **Design and Methods:** Data from previous publications, from the WHO mortality database, and from the International Crime Victims Survey (ICVS) were used in a multi-level analysis. **Results:** Multilevel modeling of longitudinal data confirmed the effect of the proportion of households owning firearms on firearm suicide rates. Several countries stand out with an

obvious decline in firearm suicides since the 1980s: Norway, United Kingdom, Canada, Australia, and New Zealand. In all of these countries legislative measures have been introduced which led to a decrease in the proportion of households owning firearms. **Conclusion and Discussion:** The spread of firearms is a main determinant of the proportion of firearm suicides. Legislative measures restricting the availability of firearms are a promising option in suicide prevention.

604 GENDER AND EDUCATION EXPLAIN A LARGE FRACTION OF THE VARIABILITY IN FATIGUE IN ADULTS

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Fatigue is a non-specific but frequent symptom in a number of conditions, for which correlates are unclear. **Objectives:** To estimate socio-demographic and clinical factors determining the magnitude of fatigue. **Methods:** As part of a follow-up evaluation of a cohort of urban Portuguese adults, socio-demographic and clinical variables for 563 consecutive participants were collected through personal interview. Lifetime history of chronic disease diagnosis was inquired (depression, cancer, cardiovascular, rheumatic, and respiratory conditions), anthropometry was measured, and haemoglobin determined. Krupp's 9-item Fatigue Severity Scale was applied and severe fatigue defined as mean score over 4. Mean age (SD) was 62.3 (9.9) and 58.8% of participants were females. Logistic regression was used to compute adjusted odds ratios, and attributable fractions were estimated using the formula $AR = 1 - S(OR_j)$. **Results:** Adjusted for age and clinical conditions, female gender (OR = 1.56, 95%CI: 1.08–2.26) and education (under 5-years schooling: OR = 1.61, 95%CI: 1.10–2.34) were associated with severe fatigue. Obesity (OR = 1.87, 95%CI: 1.21–2.90) and diagnosed cardiovascular disease (OR = 2.23, 95%CI: 1.28–3.90) also increased fatigue. Attributable fractions were 21.1% for gender, 14.2% for education, 9.8% for obesity, and 10.9% for cardiovascular disease. **Conclusion:** Gender and education have large impact on severe fatigue, and, to a lesser extent, obesity and cardiovascular disease.

605 ANALYSIS OF INFANTIL MORTALITY IN SOBRAL, BRAZIL

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Introduction: Analysis of infant mortality allows identification of death contributing factors and assessment of child health care quality. **Objective:** To study characteristics of infant and fetal mortality using data from a committee for prevention of maternal and infant mortality, in Sobral, Brazil. **Methods:** All cases of infant deaths between 2002 and 2004 were analyzed. Medical records were reviewed and mothers, interviewed. Using a tool to identify preventable deaths (SEADE classification – Brazil) the committee characterized causes of death. Meetings with governmental groups involved in family health care took place to identify death contributing factors. **Results:** In 2002, infant mortality decreased from 29.7 to 18.9. In the next 2 years there was an increase from 23.1 to 26.6. The increase in 2003 was due to respiratory illnesses. In 2004,

was due to diarrhea. Analysis of preventable deaths indicated a reduction from 32 to 20 deaths that could have been prevented by Adequate Gestational Care, and an increase in preventable deaths by Early Diagnosis and Treatment. *Conclusion:* Pre-natal and delivery care improved whereas care for children less than 1 yr old worsened. Analysis of death causes allowed a reduction of infant mortality rate to 16.44 in 2005.

607 NO DIETARY PATTERN IS SPECIFIC FOR METABOLIC SYNDROME. A CROSS-SECTIONAL STUDY WITHIN THE EPIPORTO COHORT

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Objective: To identify dietary patterns and its association with metabolic syndrome. *Design and Methods:* We evaluated 2166 non-institutionalised adults. Diet was assessed using a semi-quantitative dietary frequency questionnaire, and dietary patterns were identified using principal components analysis followed by cluster analysis (K-means method) with bootstrapping (choosing the clusters presenting the lowest intra-cluster variance). Metabolic syndrome (MetS) was defined according to the NCEP-ATP-III. *Results:* The overall prevalence of metabolic syndrome was 20.6%. In the population sample 4 clusters were identified in females - 1.Healthy, 2.Milk/Soup; 3.Fast food; 4.Wine/Low calories; and 4 in males - 1.Milk/Carbohydrates; 2. Codfish/Soup; 3.Fast food; 4.Low calories. In males, using Milk/Carbohydrates as the reference and adjusting for age and education, high blood pressure (OR = 1.72; 95%CI:1.04–2.85) and high triglycerides (OR = 1.61;95%CI:1.00–2.60) were associated with the fast food pattern, and low calories pattern presented higher frequency of high blood pressure (OR = 1.61; 95%CI:1.01–2.55). In females, after age and education adjustment, no significant association was found either with metabolic syndrome or its individual features and the dietary patterns identified. *Conclusion:* We found no specific dietary pattern associated with an increased prevalence of metabolic syndrome. However, a fast food diet was significantly more frequent in males with dyslipidemia and high blood pressure.

609 PREVALENCE OF STRESS URINARY INCONTINENCE AND IMPACT OF EDUCATION CAMPAIGN FOLLOWING CHILDBIRTH

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Aim: To determine the prevalence of Stress Urinary Incontinence (SUI) before, during pregnancy and following childbirth, and also to analyse the impact of a health education campaign about SUI prevention, following childbirth in Viana District, Portugal. *Methods:* Participants (n = 336), interviewed during hospitalization, after birth and two months later at Health Centres, were divided into two groups: a first group of non-exposed and a second exposed to a health education campaign. This second group was encouraged to perform an exercise programme and given a 'SUI-prevention-treatment' brochure, approved by the Regional Health Authority. *Results:* SUI prevalence was 5.4%(95%CI: 3.0–7.8) before pregnancy, 51.5%(95%CI: 46.1–56.9) during pregnancy and 10.2(95%CI: 6.8–13.7) four weeks after birth. Less than half of the women with SUI sought help from healthcare professionals. Statistical significant differences were found between groups: SUI

knowledge level and practice of pelvic floor muscles re-education exercises were higher in the exposed group (2.6 and 5.1 times, respectively). *Conclusions:* SUI affects a great number of women but only a small percentage reveals it. This campaign improved women knowledge and modified their else behaviors. Healthcare professionals must be aware of this reality, providing an early and continuous intervention that would optimise the verified benefits of this campaign.

611 HOUSING INFRASTRUCTURE MODIFIES THE EFFECT OF SOCIAL INEQUALITIES ON CHILD DEVELOPMENT: A MULTILEVEL ANALYSIS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Social inequalities have been associated with poorer developmental outcomes, but little is known about the role of the area of residence. *Objectives:* Examine whether the housing infrastructure of the area modifies the effect of socio-economic conditions of the families on child development. *Design and Methods:* Community-based survey of 3052 under-fives in Southern Brazil applied hierarchical multi-level linear regression to investigate determinants of child development, measured by a score from the Denver Developmental Screening Test. *Results:* In multivariable models, the mean score of child development increased with maternal and paternal education and work qualification, family income and better housing and was higher when the mother was in paid work (all p < 0.001). Paternal education had an effect in areas of lower housing quality only; the effect of occupational status and income in these areas were twice as large as in better-provided areas (likelihood test for all interactions p < 0.05). This model explained 37% of the variation in developmental score between the areas of residence. *Conclusion:* The housing quality and sanitation of the area modified the effects of socioeconomic conditions on child development. **DISCUSSION:** Housing and sanitation programs are potentially beneficial to decrease the negative effect of social disadvantage on child development.

612 PREVALENCE OF NEWBORNS BORN WITH ISLET AUTOANTIBODIES VARIES GEOGRAPHICALLY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: It is known that both genetic and environmental factors are involved in the early development of Type1 Diabetes (T1D), and that incidence varies geographically. However we still need to explain why there is variation in incidence. *Objectives:* In order to better understand the role of non-genetic factors, we decided to examine whether prevalence of newborns with high risk genotypes or islet autoantibodies varies geographically. *Design and Methods:* The analysis was performed on a cohort of 29912 newborns born to non-diabetic mothers, between September 2000 and August 2004, who were included in Diabetes Prediction in Skåne study (DiPiS) in Sweden. Neighbourhoods were defined by administrative boundaries and variation in prevalence was investigated using multi-level regression analysis. *Results:* We observed

that prevalence of newborns with islet autoantibodies differed across the 33 municipalities of Skåne ($s = 0.16$, $p < 0.01$), with highest prevalence found in wealthy urban areas. However there was no observed difference in the prevalence of newborns with high risk genes. *Conclusion and Discussion:* Newborns born with autoantibodies to islet antigens appear to cluster by region. We suggest that non-genetic factors during pregnancy may explain some of the geographical variation in the incidence of T1D.

614 EPIDEMIOLOGY AND RISK ASSESSMENT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Risk assessment is a science-based discipline used for decision making and regulatory purposes, such as setting acceptable exposure limits. Estimation of risks attributed to exposure to chemical substances are traditionally mainly the domain of toxicology. It is recognized, however, that human, epidemiologic data, if available, are to be preferred to data from laboratory animal experiments. *Objectives:* How can epidemiologic data be used for (quantitative) risk assessment? *Results:* We described a framework to conduct quantitative risk assessment based on epidemiological studies. Important features of the process include a weight-of-the-evidence approach, estimation of the optimal exposure-risk function by fitting a regression model to the epidemiological data, estimation of uncertainty introduced by potential biases and missing information in the epidemiological studies, and calculation of excess lifetime risk through a life table to take into account competing risks. Sensitivity analyses are a useful tool to evaluate the impact of assumptions and the variability of the underlying data. *Conclusion and Discussion:* Many types of epidemiologic data, ranging from published, sometimes incomplete data to detailed individual data, can be used for risk assessment. Epidemiologists should better facilitate such use of their data, however.

615 HIGH-VIRULENCE H. PYLORI STRAINS INCREASE RISK OF ALL INTESTINAL METAPLASIAS BUT SMOKING INCREASES ONLY COMPLETE TYPE

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: High-virulence H. pylori (HP) strains and smoking increase the risk of gastric precancerous lesions. Its association with specific types of intestinal metaplasia (IM) in infected subjects may clarify gastric carcinogenesis pathways. *Objectives:* To quantify the association between types of IM and infection with high-virulence HP strains (simultaneously CagA+, vacAs1 and vacAm1) and current smoking. *Design and Methods:* Male volunteers (n = 201) underwent gastroscopy and completed a self-administered questionnaire. Participants were classified based on mucin expression patterns in biopsy specimens (antrum, body and incisura). HP vacA and cagA were directly genotyped by PCR/reverse hybridization. Data were analysed using multinomial logistic regression (reference: normal/superficial gastritis), models including HP virulence, smoking and age. *Results:* High-virulence strains increased the risk of all IM types (complete: OR = 3.08, 95%CI:1.20–7.89; incomplete: OR = 9.23, 95%CI:2.20–38.72; mixed: OR = 6.27, 95%CI:2.55–15.43) but smoking was only

associated with an increased risk of complete IM (OR = 2.99 95%CI:1.15–7.78). Compared to non-smokers infected with low-virulent strains, infection with the high-virulence HP increased the risk of IM similarly for smokers (OR = 11.00, 95%CI:3.59–33.71) and non-smokers (OR = 9.65 95%CI:3.82–24.40). *Conclusion:* Gastric precancerous lesions, with different potential for progression, are differentially modulated by HP virulence and smoking. The risk of IM associated with high-virulence HP is not further increased by smoking.

619 OPTIMAL LOCALIZATION OF BASIC URGENCY UNITS IN A PORTUGUESE DISTRICT

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: In May 1999, the Portuguese government created the Basic Urgency Units (BUU). These BUU must attend at least 40.000 persons, be open 24 hours per day, and be at maximum 60 minutes of distance to all the users. *Objectives:* Determine the optimal location of BUU, considering the existing Health Centers, in the Viseu district, North Portugal. *Methods:* From a matrix of distances between population and Health Centers an Accessibility Index was created (sum of distances traveled by population to reach a BUU). The location-allocation models were used to create simulations based on p-median model, Maximal Covering Location Problem (MCLP) and Set Covering Location Problem (SCLP). The solutions were ranked by weighting the variables of accessibility (50%), number of doctors in the Health Centers (5%), equipments (20%), distance/time (20%) and total number of BUU (5%). *Results:* The best solution has 3 BUU, 89 doctors, attends 59 000 users and the accessibility index is 8.859 Km. *Conclusions:* It was proved that it is impossible to attend all the criterion for creation of a BUU. In some areas with low population density, to sum at least 40 000 persons in a BUU, the travel time is necessarily more than 1 hour.

622 A STUDY OF OCCUPATIONAL FATIGUE IN STAFF AT A FLY-IN/FLY-OUT FERTILIZER MINE IN REMOTE NORTHERN AUSTRALIA

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: A prospective observational study of fatigue in staff working a 10 day/5 off/8 night/5 off roster of 12 hour shifts was conducted at a fly-in/fly-out fertilizer mine in remote northern Australia. *Objectives:* To determine whether fatigue in staff increased: from the start compared to the finish of shift; with the number of consecutive shifts; and from day- compared to night-shift. *Methods:* Data of sleep diaries, the Mackworth Clock test and the Swedish Occupational Fatigue Inventory were obtained at the start and finish of each shift from August to November 2004. *Results:* A total of 51 staff participated in the study. Reaction times, sleepiness and lack of energy scores were highest at the finish of nights 1 to 4. The reaction times increased significantly at both the start and finish of day 8 onwards, and at the finish of night 7. Reaction times and lack of motivation were highest during night-shift. *Conclusions:* From the above results, a disturbed diurnal rhythm and decreased motivation during night-shift; and a roster of more than eight consecutive shifts can be inferred as the primary contributors to staff fatigue. *Discussion:* The implications for changes to workplace practices and environment will be discussed.

624 TO REVIEW OR NOT: IMPACT ON THE DAILY PRACTICE OF EXPERTS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

The aim of this survey was to assess the impact of a meta-analysis comparing resurfacing with nonresurfacing of the patella on the daily practice of experts. Participants in this study were 87 experts which had participated in a previous survey on personal preferences regarding patella resurfacing. These experts in the field of patella resurfacing were identified by a thorough search of Medline, an internet search (with Google™ search engine), and personal references from the identified experts. Participants of the 'Knee Arthroplasty Trial' (KAT) in the United Kingdom were also included. Two surveys were sent to the participants, one before and one after the publication of the meta-analysis. The response rate is 39 questionnaires or 45%. The vast majority of responders are not persuaded to change change their practice after reading the meta-analysis. This is only in part due to the fact that best evidence and practice coincide. Other reasons given are methodology related, an observation which is shared by the authors of the review, which force the orthopedic community to improve its research methodology. Reasons such as 'I do not believe in meta-analysis' either demands a fundamental discussion or demands the reader to take evidence based medicine more seriously.

626 CORONARY HEART DISEASE RISK, TYPE 2 DIABETES AND COMPUTERISED DECISION SUPPORT IN PRIMARY CARE

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Patients with type 2 diabetes (DM2) have a 2–3 fold increased risk of cardiovascular disease. Delegating routine tasks and Computerized Decision Support Systems (CDSS) such as Diabetes Care Protocol (DCP) may improve treatment of cardiovascular risk factors HbA1c, blood pressure and cholesterol. DCP includes consultation-hours exclusively scheduled for DM2 patients, rigorous delegation of routine tasks in diabetes care to trained paramedics, and software to support medical management. **Objective:** To investigate the effects of DCP, used by practice assistants, on the risk of coronary heart disease for patients with DM2. **Design and Methods:** In an open-label pragmatic trial in 72 general practices with 7893 patients, HbA1, blood pressure and cholesterol were examined before and prospectively one year after implementation of DCP. The primary outcome was the change in the 10 year UKPDS Coronary Heart Disease (CHD) risk estimate. **Results:** The median 10 year UKPDS CHD risk estimate improved significantly from 21.7% to 19.0%. HbA1 decreased from 7.2% to 6.9%, Systolic Blood pressure from 148.4 to 144.0 mmHg and total cholesterol from 5.1 to 4.7 mmol/l. (all $p < 0.01$). **Conclusion:** Delegating routine task in diabetes care to trained paramedics and using CDSS improves the cardiovascular risk of DM2 patients.

627 PREDICTION OF TUBERCULOSIS IN EXPOSED IMMIGRANTS BY TUBERCULIN SKIN TEST, IFN-G TESTS AND EPIDEMIOLOGIC FACTORS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Currently immigrants in western countries are only investigated for active tuberculosis (TB) by use of a chest X-ray. Recent latent tuberculosis infection (LTBI) is hard to diagnose in this specific population because the only available test method, the tuberculin skin test (TST), has a low positive predictive value (PPV). Recently interferon-gamma (IFN-g) tests have become available that measure cellular responses to specific *M. tuberculosis* antigens and might have a better PPV. **Objective:** To determine the predictive value of TST and two different IFN-g tests combined with epidemiological characteristics for developing active TB in immigrants who are close contacts of smear positive TB patients. **Methods** In this prospective cohort study 800 close contacts will be included. Demographic characteristics and exposure data are investigated. Beside their normal examination they will all have a TST. Two different IFN-g tests will be done in those with a TST induration of ≥ 5 mm. These contacts will be followed for 2 years to determine the occurrence of TB. **Results** Since April 2005, 13 municipal health services have started with the inclusion. Preliminary results on the predictive value of TST, both IFN-g tests and epidemiological characteristics will be presented.

628 AGREEMENT BETWEEN EMERGENCY ROOM AND DISCHARGE DIAGNOSES IN A POPULATION OF INJURED INPATIENTS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Different factors contribute to the quality of ED (Emergency Department) care of an injured patient. **Objective:** determine factors influencing the disagreement between ER diagnoses and those assigned at hospital admission in injured patients, and evaluate if disagreement between the diagnoses could have worsened the outcome. **Methods:** All the ER visits of the 60 Emergency Departments of Lazio Region for unintentional injuries followed by hospitalisation in 2000. Concordant diagnoses were established on the basis of the Barel matrix cells. Logistic regression was used to assess the role of individual and ER care factors on the probability of concordance. A logistic regression where death within 30 days was the outcome and concordance the determinant was used. **Results:** 22,892 injury ER visits were considered. In 62.2% cases, the ER and discharge diagnoses were concordant. Higher concordance was found with increasing age and less urgent cases. Factors influencing concordance were: the hour of the visit, ER level, initial outcome, length of stay in hospital. Patients who had non concordant diagnoses had a 30% higher probability of death. **Conclusions:** A correct diagnosis at first contact with the emergency room is associated with lower mortality.

629 INCREASED RISK OF BREAST CANCER BUT BETTER SURVIVAL: MAJOR HEALTH CARE BURDEN IN THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Breast cancer is the most important cancer for women. Both incidence and mortality are high in the Netherlands compared to other European countries. **Objective:** To quantify the trends in breast cancer incidence, mortality and survival since 1960 in the Netherlands. **Design and Methods** We used the population-based databases of the Netherlands Cancer Registry, the Eindhoven Cancer Registry (ECR) and the Central Bureau of Statistics. Patients from the ECR were followed until 1-1-2005 for vital status and relative survival was calculated. **Results:** The number of breast cancer cases increased from 7900 in 1989 to 11.500 in 2003, an annual increase of 1.3% ($p < 0.001$). The death rate decreased 1,4% annually ($p < 0.001$), which resulted in 3400 deaths in 2003. The relative 5-yr survival was less than 50% for patients diagnosed in the seventies, this increased to over 80% for patient diagnosed since 2000, patients with stage I disease even have a 96% 5-yr relative survival. **Conclusion:** The alarming increase in breast cancer incidence is accompanied with a serious improvement in survival rates. This results in a large number of women (ever) diagnosed with breast cancer, about 119,000 in 2005 of whom 80% demand some kind of medical care.

630 DIFFERENCES IN PERCEIVED HEALTH AND PRIMARY CARE USE BETWEEN MIGRANTS AND NATIVES IN THE NETHERLANDS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: Nine % of the population in the Netherlands belongs to non-western ethnic minorities. Perceived health is worse and health care use different from Dutch natives. **Objectives.** Which factors are associated with ethnic differences in self-rated health? Which factors are associated with differences in utilisation of GP care? **Methods:** During one year all contacts with GPs were registered. Adult Surinam, Antillean, Turkish, Moroccan and Dutch responders were included (total N: 10.252). We performed multivariate analyses of determinants of self-rated health and on the number of contacts with GPs. **Results:** Self-rated health differ from native Dutch: Surinam/Antillean (OR 2.4) and Turkish/Moroccan patients (OR 4.7/3.8), especially in Turkish/Moroccan females. More Turks visit the GPs at least once a year (OR 1.5). Less Surinamese (OR 0.5) and Antillean patients (OR 0.9) visit their GPs than the Dutch do. People from ethnic minorities in good health visit their GPs more often (3.9 – 4.4 consults per year vs. 3.4). Incidence rates of acute respiratory infections and chest complaints were significantly higher than in the Dutch. **Conclusions:** Ethnicity is independently associated with self-rated health. Higher use of GP-care by ethnic minorities in good health, points towards possible inappropriate use of resources.

634 OUR YOUTH DETERMINES THE FUTURE: DO THEY FULFIL IT? FIRST RESULTS OF THE LIMBURG YOUTH MONITORING PROJECT 2005

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

In October 2005, for the third time all Municipal Health Services in Limburg (the south-east part of the Netherlands) have conducted a survey among pupils of the secondary schools (14–16 years of age, N = 19.449). We studied trends in (psychological) health, lifestyle risks (such as smoking, drinking, using drugs, bad diet, insufficient exercise) safety and criminal behavior of pupils. **Results:** For most of the above mentioned items, the situation in 2005 was better than in 1996. The relative number of smokers and cannabis users, particularly among pupils of the age of 16, were less in 2005 compared to the years 2001 and 1996: the number of smokers decreased:38% (1996), 32% (2001) and 24% in 2005. The number of cannabis users also decreased from 18% (1996) to 14% (2001) and 12% in 2005. However alcohol abuse among pupils (during the last four weeks before the investigation) was higher in 2005 (38%) compared to 2001 (35%) and 1996 (36%). Having unsafe sex was also higher in 2005 (15%) compared to 2001 (11%) and 1996 (14%). These results can be used in maintaining or developing local health policy by communities, schools and community services.

637 INCIDENCE OF CHD AND STROKE IN GERMANY FROM REGISTERS AND ESTIMATED BY A WHO METHOD USING NATIONAL STATISTICS

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Session: Poster session 1: June 29 2006

Presentation: Poster.

ABSTRACT

Background: Incidence of coronary heart disease (CHD) and stroke can be estimated from local, population-based registers. It is unclear, to what extent local register data are applicable on a nationwide level. Therefore, we compared German register data with estimates derived with WHO Global Burden of Disease (GBD) method. **Methods:** Incidence of CHD and stroke was computed with the GBD method using official German mortality statistics and prevalences from the German national health survey. Results were compared to estimates from the KORA/MONICA Augsburg register (CHD) and the Erlangen Stroke Project in southern Germany. **Results:** GBD estimates and register data showed good agreement: CHD (age group 25–74 years) 155,862 (GBD) versus 159,245 (register) and stroke (all ages) 157,104 versus 167, 892 incident cases per year. CHD incidence among all age groups was estimated with the GBD method to be 250,000 per year (no register data available). CHD incidence in men and stroke incidence in women were underestimated with the GBD method as compared to register data. **Conclusions:** GBD method is a useful tool to estimate incidence of CHD and stroke. The computed estimates may be seen as lower limit for incidence data. Differences between GBD estimates and register data are discussed.

639 BEHAVIOR PROBLEMS AND PSYCHOTROPIC DRUG USE IN CHILDREN AND ADOLESCENTS WITH MENTAL RETARDATION

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Background: Children with mental retardation (MR) are a vulnerable not much studied population. **Objectives:** To investigate psychopharmacotherapy in children with MR and to examine possible factors associated with psychopharmacotherapy. **Methods:** Participants were recruited through all facilities for children with mental retardation in Friesland, the Netherlands, resulting in 865 participants, 4–18 years old, including all levels of mental retardation. The DBC and the PDD-MRS were used to assess general behavior problems and Pervasive Developmental Disorders (PDD). Information on medication was collected through a parent-interview. Logistic regression was used to investigate the relationship between the psychotropic drug use and the factors DBC, PDD, housing, age, gender and level of MR. **Results:** 10% of the participants used psychotropic medication. Main factors associated with receiving psychopharmacotherapy were PDD (OR 2.31) and DBC score (OR 1.03). Living away from home and MR-level also played a role whereas gender and age did not. DBC score was associated with clonidine, stimulants and anti-psychotics. PDD was the main factor associated with anti-psychotics use (OR 5.7). **Discussion:** Psychopharmacotherapy is especially prevalent among children with MR and comorbid PDD and general behavior problems. Although many psychotropic drugs are used off-label, specific drugs were associated with specific psychiatric or behavior problems.

641 SCHOOL PERFORMANCE AND FINAL EDUCATIONAL ATTAINMENT IN LONG-TERM CHILDHOOD CANCER SURVIVORS

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: increased survival in children with cancer has raised interest on the quality-of-life of long-term survivors. **Objective:** to compare educational outcomes of adult survivors of childhood cancer and healthy controls. **Methods:** retrospective cohort study including a sample of adult survivors (495) treated for childhood cancer in the three existing Italian Paediatric Research Hospitals. Controls (501) were selected among siblings, relatives or friends of survivors. When these controls were not available, a search was carried out in the same area of residence of the survivors through random digit dialling. Data collection was carried out through a telephone-administered structured questionnaire. **Results:** significantly more survivors than controls needed school support (adjusted Odds Ratio -ORAdj- 1.61, 95% CI 1.22–2.13); failed at least a grade after disease onset (ORAdj 1.46, 95% CI 1.09–1.97); achieved a lower educational level (ORAdj 1.77, 95% CI 1.27–2.45) and did not reach an educational level higher than their parents' (ORAdj 1.66, 95% CI 1.19–2.32). Subject's age, sex, parents' education and area of residence were taken into account as possible confounders. **Conclusions:** these findings suggest the need to provide appropriate school support to children treated for childhood cancer.

642 EPIDEMIOLOGY OF CONGENITAL MALFORMATIONS SENSITIVE TO FOLIC ACID IN ITALY

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Session: Posters session 3: July 1 2006

Presentation: Poster.

ABSTRACT

Background: In Italy supplementation with folic acid (FA) in the periconceptional period to prevent congenital malformations (CMs) is quite low. The National Health Institute has recently launched (2005) a programme to improve awareness about the role of FA in reducing the risk of serious defects also by providing 0.4 mg FA tablets free of charge to women planning a pregnancy. **Objectives:** We analysed CMs that are or may be sensitive to FA supplementation in order to establish an adequate baseline to allow a FA impact assessment in the next years and to investigate spatial differences among CMs registries, time trends and time-space interactions. Design and Methods Data collected over 1996–2003 by the Italian Registries members of EUROCAT and ICBDSR on births and induced abortions with neural tube defects, ano-rectal atresia, omphalocele, oral clefts, cardiovascular, limb reduction and urinary system defects. **Results:** All the CMs showed statistically significant differences among Registries with the exception of ano-rectal atresia. The majority of CMs by Registry showed stable or increasing trends over time. **Conclusions** Results show the importance of FA intake during the periconceptional period. Differences among Registries indicate also the need of having a baseline for each Registry to follow trends over time.

643 MRSA INCIDENCES AND PROPORTIONS: HOW WELL DO THESE CORRELATE ON A EUROPEAN LEVEL?

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Session: Posters session 2: June 30 2006

Presentation: Poster.

ABSTRACT

Country-specific resistance proportions are more biased by variable sampling and ascertainment procedures than incidence rates. Within the European Antimicrobial Resistance Surveillance System (EARSS) resistance incidence rates and proportions can be calculated. In this study, the association between antimicrobial resistance incidence rates and proportions and the possible effect of differential sampling of blood cultures was investigated. In 2004, EARSS collected routine antimicrobial susceptibility test data from invasive *S. aureus* isolates, tested according to standard protocols. Via a questionnaire denominator information was collected. The Spearman correlation coefficient and linear regression were used for statistical analysis. This year, 735 of 1205 hospitals and 483 of 758 laboratories from 28 of 30 EARSS countries responded to the questionnaire. They reported of, overall, 18,729 *S. aureus* isolates. In the different countries, MRSA proportions ranged from <1% to 40% and incidence rates per 1,000 patient days from 0.26–10–2 to 19.29–10–2. Overall, the proportions and rates highly correlated. Blood culturing rates only influenced the relationship between MRSA resistance proportions and incidence rates for Eastern European countries. In conclusion, resistance proportions seem to be very similar to resistance incidence rates, in the case of MRSA. Nevertheless, this relationship appears to be dependent of some level of blood culturing.

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