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EDITORIALE

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Carissimi,
ci mancava vero un contributo in ambito gastroenterologico che coinvolgesse la vitamina D e quindi eccolo in questo numero, in particolare sul tema della malattia celiaca, grazie alla disponibilità di esperti colleghi Gastroenterologi. Come vedrete il legame tra malattia celiaca e vitamina D è a doppio senso in quanto, se da una parte le lesioni intestinali possono portare a un malassorbimento di vitamina D con le note conseguenze negative sull'osso, dall'altra la carenza di vitamina D si associa a un'abnorme risposta infiammatoria che, almeno potenzialmente, potrebbe favorire l'esordio e il mantenimento dell'enteropatia stessa. In effetti gli Autori riportano evidenze dalla letteratura che inducono a ritenere che la vitamina D possa giocare un ruolo nella patogenesi della malattia celiaca, sia attraverso un effetto protettivo diretto sulla barriera intestinale, sia modulando la risposta immunitaria a favore dei meccanismi di tolleranza.
Di nuovo in particolare anche in questo campo ritroviamo il razionale per un effetto protettivo della vitamina D nei confronti della "cascata citochinica", risposta infiammatoria che se eccessiva può fare gravi danni (da cosiddetto "fuoco amico"), come ipotizzato anche in corso di COVID-19 [1]. A questo proposito abbiamo recentemente ipotizzato [2] che anche il pregresso uso di aminobisfosfonati, riducendo nel lungo termine il livello di linfociti T $\gamma\delta$ circolanti e quindi la cascata citochina responsabile della reazione di fase acuta, possa giustificare la riduzione osservata di polmoniti e di mortalità da polmoniti in pazienti trattati con questi farmaci [3].
Anche considerata la seconda ondata in corso della pandemia da SARS-Cov-2 non potevamo esimerci dal fare il punto per i nostri lettori sulle conoscenze relative al possibile ruolo dello stato vitaminico D nei confronti della malattia COVID-19, essendo noti e riconosciuti i suoi molteplici effetti immunomodulatori e ricchissima la recente letteratura in merito, che ci ha costretto anche in questo numero a una selezione bibliografica dedicata. Mi pare che si possano condividere le fondate e prudenti conclusioni degli Autori ai quali abbiamo affidato questo compito, secondo i quali i dati a disposizione rendono credibile un legame tra carenza di vitamina D e suscettibilità e severità della infezione da SARS-Cov-2.
Nella recente esperienza da noi condotta in occasione della precedente ondata pandemica abbiamo studiato la prevalenza della carenza di 25(OH)D tra pazienti ricoverati per COVID-19, cercando in particolare le associazioni tra lo stato vitaminico D e la gravità della malattia [4]. Tra i 61 pazienti inclusi nello studio, il 72,1% era carente di 25(OH)D (<20 ng/mL) e il 57,4% aveva 25(OH)D <15 ng/mL. La carenza di vitamina D era associata a un rischio aumentato di avere PO2 arteriosa < 60 mmHg, a un aumento di 3 volte del rischio di avere PCR alterata e a un incremento del rischio di presentare dispnea all'esordio della malattia. Tuttavia, come sapete, trattandosi di uno studio osservazionale retrospettivo non possiamo con questi risultati attribuire alla carenza di vitamina D un ruolo causale, anche in considerazione dei noti effetti della flogosi, specie se intensa, sui livelli sierici di 25(OH)D [5,6]. Solo i risultati di trial clinici che prevedano la supplementazione con vitamina D potranno darci risposte certe a questo riguardo, ma credo che comunque nel frattempo sia saggio non trovarsi a rischio di carenza di vitamina D.
Cosa ne pensate?
Statemi bene

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Bibliografia

1 Daneshkhah A, Agrawal V, Eshein A, et al Evidence for possible association of vitamin D status with cytokine storm and unregulated inflammation in COVID-19 patients. Aging Clin Exp Res 2020;32:2141-58. https://doi.org/10.1007/s40520-020-01677-y

2 Adami G, Fassio A, Giollo A, et al. Could previous exposure to nitrogen-containing bisphosphonates mitigate friendly fire? J Bone Miner Res 2020 Sep 4. https://doi.org/10.1002/jbmr.4163

3 Sing C-W, Kiel DP, Hubbard RB, et al. Nitrogen-containing bisphosphonates are associated with reduced risk of pneumonia in patients with hip fracture. J. Bone Miner Res 2020;35:1676-84. https://doi.org/10.1002/jbmr.4030

4 Adami G, Giollo A, Fassio A, et al. Vitamin D and disease severity in coronavirus disease 19 (COVID-19). Reumatismo, in press. https://www.reumatismo.org/index.php/reuma

5 Lee P. Vitamin D metabolism and deficiency in critical illness. Best Pract Res Clin Endocrinol Metab 2011;25:769-81.https://doi.org/10.1016/j.beem.2011.03.001.

6 Amrein K, Christopher KB, McNally JD. Understanding vitamin D deficiency in intensive care patients. Intensive Care Med 2015;41:1961-4. https://doi.org/10.1007/s00134-015-3937-4

Ruolo immunomodulante della vitamina D nella malattia celiaca

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Abstract

Del tutto recentemente stanno emergendo gli effetti extra-scheletrici della vitamina D soprattutto nel mantenimento dell'omeostasi immunologica e della barriera intestinale. Di conseguenza, appare plausibile l'ipotesi di un suo coinvolgimento nella patogenesi di molte condizioni immuno-mediate, tra cui la malattia celiaca. Questa è una malattia infiammatoria cronica che ha l'intestino tenue come organo bersaglio ed è scatenata dall'ingestione del glutine contenuto in alcuni cereali da parte di soggetti geneticamente predisposti. La malattia celiaca è la più frequente malattia non trasmissibile nel mondo in quanto si stima che la sua prevalenza oscilli tra 0,5-1%. Pur tuttavia, nonostante l'elevata se non assoluta attendibilità dei test diagnostici, la sua reale prevalenza è di gran lunga inferiore, circa 1‰, in quanto la poliedricità del quadro clinico e, soprattutto, la paucisintomaticità della gran parte dei casi, unitamente alla scarsa conoscenza di tale condizione, contribuiscono al fenomeno cosiddetto dell'"iceberg", in cui i casi diagnosticati rappresentano solo la punta del totale. Comunque, fino a oggi, la valutazione del tasso sierico di vitamina D è fortemente consigliata sia nelle forme pediatriche, sia in quelle dell'adulto di malattia celiaca, in quanto l'enteropatia di per sé, e l'eventuale contaminazione batterica del tenue che ne consegue, possono condurre a un malassorbimento di vitamina D, con ovvie ripercussioni a livello osseo. Da pochissimi anni, stanno crescendo le dimostrazioni di un suo ruolo immuno-modulante che si espleterebbe su tutte le popolazioni cellulari coinvolte nella risposta immunitaria. Inoltre, tale vitamina appare svolgere un'azione sia protettiva nei confronti della barriera intestinale, sia di regolazione dell'enterocinesi. Una sua carenza, pertanto, parrebbe rappresentare uno di quei fattori ambientali che, unitamente al glutine e alla suscettibilità genetica, sono necessari per l'innesco e il mantenimento delle lesioni intestinali in questa condizione patologica.

INTRODUZIONE

Del tutto recentemente si sta facendo strada l'affascinante idea di un ruolo della vitamina D diverso e non meno importante di quello svolto nel metabolismo osseo e legato alla regolazione della risposta immunitaria e della barriera intestinale [1]. Sta emergendo, infatti, il legame tra patrimonio di vitamina D e malattie immuno-mediate, quali la sclerosi multipla, il diabete tipo 1, l'artrite reumatoide, e il lupus eritematoso sistemico [2,3], per citarne alcune. Queste rappresentano la vera emergenza sanitaria dei Paesi Occidentali e di quelli in via di sviluppo in quanto la loro prevalenza è in continuo aumento ed è responsabile di elevati costi diretti, ma anche indiretti legati alla riduzione della qualità di vita e all'invalidità di una porzione rilevante della popolazione, soprattutto in età produttiva [4]. Tra queste, le malattie infiammatorie croniche intestinali sono scatenate dalla complessa interazione tra fattori genetici, immunologici e ambientali che rende anche ragione della loro variabilità clinica [5]. La malattia celiaca (MC) è la più frequente enteropatia nel mondo, in quanto la sua prevalenza si aggira intorno a 0,5-1% [6], anche se una larga proporzione di casi rimane non diagnosticata [7]. Anche la sua incidenza sta criticamente aumentando non solo per una migliore capacità diagnostica, ma anche per la pressione data da fattori ambientali [8]. Il legame tra MC e vitamina D è a doppio senso in quanto, se da una

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Conflitto di interessi

Rachele Ciccocioppo e Luca Frulloni dichiarano nessun conflitto di interesse.

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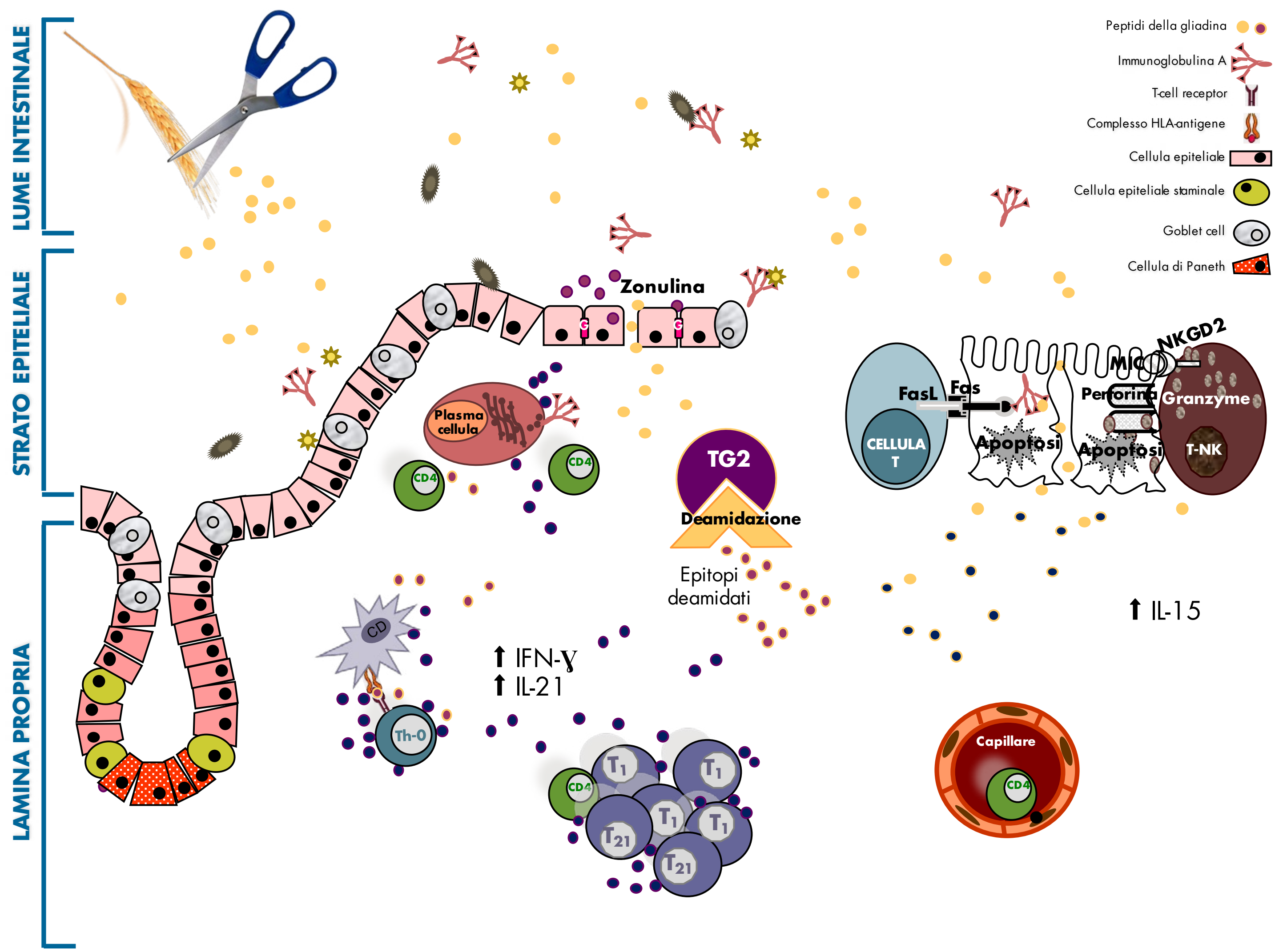


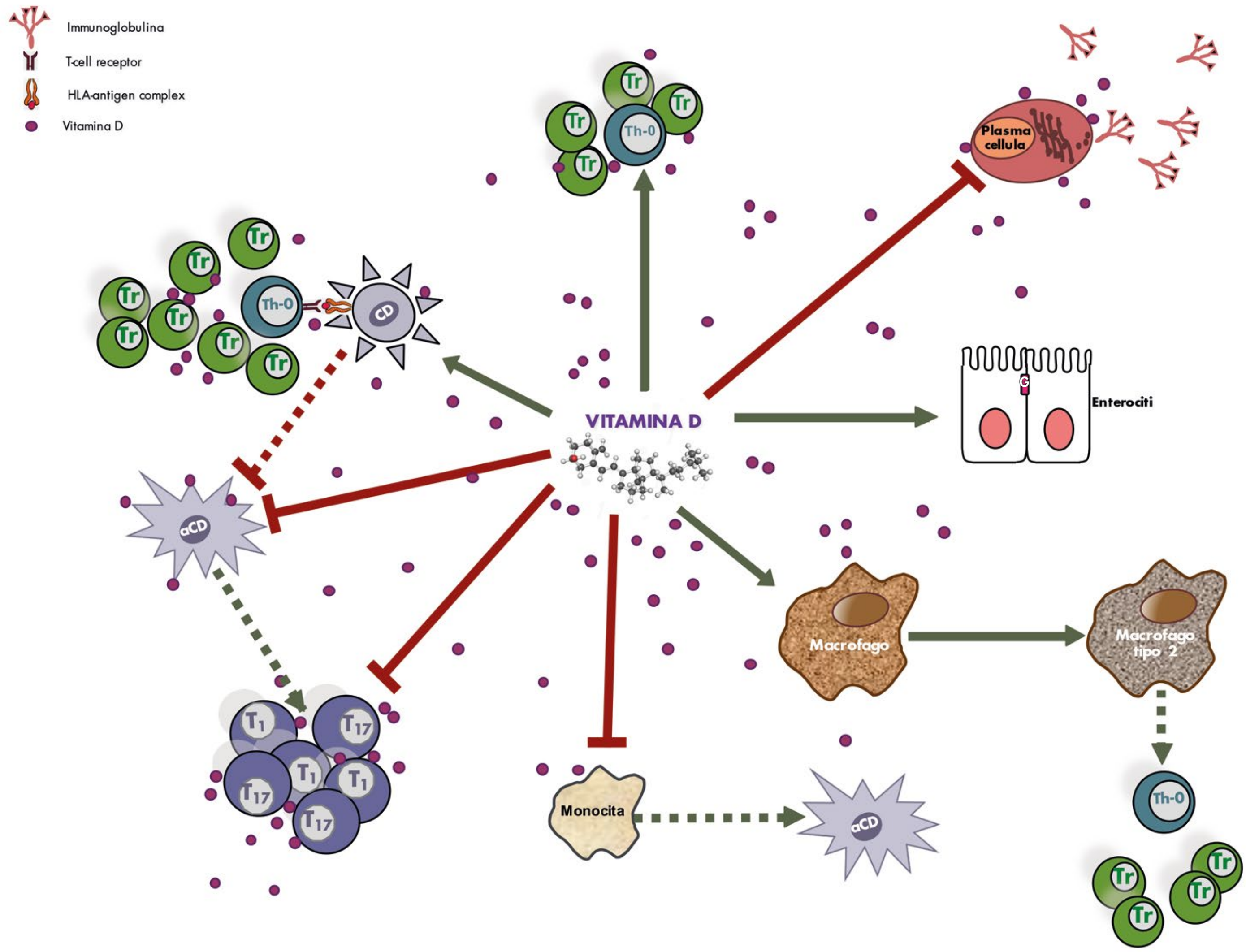
CD: cellula dendritica; Th-0: T helper-0; IFN: interferone; IL: interleuchina; TG2: transglutaminasi tissutale di tipo 2; G: complesso giunzionale inter-enterocitario; NK: natural killer; FasL: ligando del recettore Fas; Fas: recettore di morte; NKG2D: *natural killer group 2-member D*; MIC: *Major histocompatibility complex (MHC) class I-related chain molecules*; T_{21}: T helper-21; T_1: T helper-1; T-NK: linfocita T-natural killer.

FIGURA 1.
Immunopatogenesi delle lesioni intestinali nella malattia celiaca. Vedere testo.

parte le lesioni intestinali possono portare a un malassorbimento di vitamina D con le negative conseguenze sull'osso [9], una carenza di vitamina D si associa a un'abnorme risposta infiammatoria [10] che, almeno potenzialmente, potrebbe favorire l'esordio e il mantenimento dell'enteropatia stessa. In questa mini-review, partendo dall'immunopatogenesi della MC (Fig. 1), passeremo a trattare le evidenze sinora raccolte sugli effetti della vitamina D (e della sua carenza) sull'immunità innata e adattativa, e sulla barriera intestinale (Fig. 2), per poi citare i dati sinora disponibili nella MC.

LA MALATTIA CELIACA

Tale patologia può svilupparsi in soggetti geneticamente predisposti a seguito dell'ingestione del glutine e, d'altro canto, l'eliminazione del glutine dalla dieta è l'unica terapia ad oggi disponibile [11]. Si tratta di una malattia autoimmune che ha l'intestino tenue come organo bersaglio anche se, in una certa proporzione di casi, la malattia può colpire la cute (dermatite erpetiforme) o il cervelletto (atassia glutine-relata) [12]. Dal punto di vista dei meccanismi patogenetici che conducono alle lesioni localizzate nella mucosa intestinale e caratterizzate da: aumento dei linfociti intra-epiteliali, iperplasia delle cripte, atrofia di vario grado dei villi e infiltrato infiammatorio polimorfo della lamina propria [13], la MC rappresenta una condizione privilegiata in quanto sono ben noti gli aplotipi di suscettibilità genetica (HLA-DQ2/8), il trigger esterno (il glutine) e l'autoantigene (l'enzima transglutaminasi tissutale) [11]. Purtuttavia, la predisposizione genetica è presente in oltre il 30% della popolazione e il glutine è un alimento base della dieta pressoché di tutta la popolazione mondiale. È chiaro, pertanto, che sono necessari fattori aggiuntivi affinché le lesioni si realizzino



aCD: cellula dendritica attivata; CD: cellula dendritica; G: complesso giunzionale inter-enterocitario; Tr: linfocita T regolatorio; Th-0: T helper-0; T_1: T helper-1; T_{17}: T helper-17.

FIGURA 2.
Effetti immuno-modulanti ed epitelio-protettrici della vitamina D. Vedere testo.

e si mantengano e che ci aiutino anche a spiegare la variabilità dell'età di insorgenza della malattia stessa. Si parla, infatti, di "*missing environmental factors*" [14] e, tra questi, il microbiota, la tipologia del parto e dell'allattamento, l'epoca dello svezzamento, le infezioni virali e, recentemente, anche il tasso di vitamina D, sono stati chiamati in causa e sono l'oggetto delle attuali ricerche.

Immunopatogenesi

Il glutine rappresenta la componente proteica contenuta in alcuni cereali quali il grano, l'orzo, la segale e l'avena, e che rimane a seguito dell'eliminazione della crusca con la macinazione e dell'amido con la centrifugazione [15]. In realtà, si tratta di una miscela di proteine tra cui quelle solubili in alcol sono le gliadine nel grano, le ordeine nell'orzo, le secaline nella segale e le avenine nell'avena. La loro peculiarità risiede nel fatto che sono ricche di prolina e glutamina, il che conferisce alle rispettive farine le proprietà necessarie per la lievitazione e la panificazione. L'intestino umano non produce enzimi (prolil-endopeptidasi) in grado di scindere il legame tra questi aminoacidi per cui, dopo la digestione chimica operata dall'acidità gastrica e quella enzimatica da parte delle peptidasi intestinali, rimangono degli oligopeptidi non ulteriormente scindibili [16]. Nel caso in cui la barriera intestinale sia alterata a seguito, ad esempio, di un'infezione virale o una disbiosi [17], tali oligopeptidi attraversano l'epitelio e giungono nella lamina propria ove risiedono le cellule immuno-competenti che hanno il compito di mantenere la tolleranza immunologica nei confronti della miriade di antigeni batterici e dietetici presenti nel lume intestinale. Inoltre, è stato invocato anche un meccanismo diretto di tali oligopeptidi nell'indurre un danno di barriera e, quindi, determinare un'aumentata permeabilità intestinale attraverso il rilascio della zonulina [18], a seguito del loro legame con il recettore delle chemochine CXCR3 espresso sugli enterociti, con conseguente disassemblaggio delle molecole che compongono le giunzioni strette [19]. Queste, unitamente alle giunzioni aderenti e al complesso basale, sigillano gli enterociti tra di loro in modo da garantire il passaggio estremamente selettivo delle molecole per via trans- o para-cellulare e contribuiscono all'integrità di quell'unità anatomo-funzionale chiamata barriera intestinale [20]. Altri fattori che la compongono sono le immunoglobuline segretorie (sIgA), lo strato di muco che riveste gli enterociti, i linfociti intraepiteliali, nonché tutte le popolazioni cellulari presenti nella lamina propria e che fomano il cosiddetto "*gut-associated lymphoid tissue*", da cui dipende il mantenimento dell'omeostasi immunologica [21]. È proprio dallo stato di quiescenza o attivazione delle cellule antigene-presentanti residenti nella lamina propria che dipende il destino della risposta immunologica in senso tollerogenico o infiammatorio [22]. Infatti, recenti studi hanno dimostrato che la presenza di specie patobionte nel microbiota intestinale, unitamente ai peptidi della gliadina, determina un'attivazione delle cellule dendritiche che quindi percepiscono tali oligopeptidi come antigeni, li complessano con le molecole HLA-DQ2/8 e li presentano ai linfociti T CD4$^+$, con innesco di una cascata infiammatoria piuttosto che di una risposta tollerogenica [23]. La presenza di un microambiente infiammatorio determina anche l'attivazione dell'enzima transglutaminasi tissutale che, se da una parte rappresenta l'autoantigene della MC [24], dall'altra opera una deamidazione selettiva di tali oligopeptidi, in particolare il 33mer, con sostituzione dei residui di glutamina con acido glutamico, che li rende immunodominanti, e quindi in grado di amplificare la risposta proliferativa e secretoria dei linfociti T-specifici [25]. Questi ultimi, così stimolati, producono una cascata di citochine pro-infiammatorie, largamente dominata dall'interferone-γ e dall'interleuchina-15, con conseguente attivazione dei linfociti CD8$^+$ cito-tossici, macrofagi, e cellule natural-killer responsabili, infine, dell'atrofia dei villi [26]. Questa si produce, infatti, a seguito di un'esagerata apoptosi enterocitaria legata sia a meccanismi citolitici Fas/ligando di Fas e perforina/granzyme, sia al distacco dalla membrana basale, che non viene compensata dall'aumentata proliferazione a livello delle cripte [27]. Tale enteropoiesi inefficace contribuisce alla perdita della competenza funzionale della barriera intestinale, in quanto la superficie mucosa si trova ad essere rivestita da cellule in ritardo maturativo e, quindi, dotate di un complesso giunzionale inefficace. Infine, i linfociti T-helper presentano gli epitopi ai linfociti B che, differenziandosi in plasmacellule, producono gli anticorpi specifici [28] che possiamo dosare nel siero dei pazienti e sono dotati di elevata accuratezza diagnostica [29].

EFFETTI IMMUNOMODULANTI DELLA VITAMINA D

Il recettore della vitamina D (VDR), localizzato a livello nucleare e responsabile degli effetti biologici della vitamina D, è codificato da un gene altamente polimorfico che fa parte della superfamiglia dei recettori per gli steroidi [30].

Recentemente, l'espressione di tale recettore è stata identificata anche in tessuti non coinvolti nel metabolismo osseo e minerale e, in particolare, in cellule del sistema immunitario, come quelle presentanti l'antigene [31]. Pertanto, alcuni polimorfismi del VDR potrebbero aumentare o diminuire la suscettibilità a malattie immuno-mediate, tra cui la stessa MC [32]. Ciò ha dato il via a una serie di studi che hanno dimostrato come la vitamina D sia implicata nella risposta immunitaria sia innata che adattativa [33]. Infatti, l'enzima che converte la 25-idrossi-vitamina D nella sua forma attiva è espresso anche nei monociti-macrofagi e viene attivato a seguito del legame dei recettori Toll-like sulla loro superficie con i rispettivi antigeni virali e batterici, con il risultato di potenziare le difese nei confronti delle infezioni [34]. Inoltre, la vitamina D inibisce la differenziazione dei monociti in cellule dendritiche riducendo, pertanto, la capacità di presentare l'antigene e di innescare una risposta infiammatoria [35].

La vitamina D possiede anche un'azione diretta sulle cellule dendritiche, come dimostrato da studi *in vitro*, inibendo la loro maturazione e quindi il loro potere antigene-presentante, e favorendo l'acquisizione di un profilo tollerogenico [36,37].

Per quanto riguarda la risposta adattativa, la vitamina D riduce la differenziazione dei linfociti T verso un profilo pro-infiammatorio, mentre promuove l'espansione della quota ad attività regolatoria [38].

Inoltre, i linfociti T che esprimono elevati livelli di VDR sulla loro superficie sarebbero sensibili a un'azione immunomodulante della vitamina D, in senso anti-infiammatorio. E ciò è di grande interesse nell'ambito della patogenesi della MC in quanto i linfociti T gliadina-specifici sono i principali responsabili del danno mucosale e del processo linfomagenico legato a questo tipo di infiammazione cronica [39].

Per quanto riguarda gli effetti sui linfociti B, sempre studi *in vitro* hanno dimostrato che la vitamina D è in grado di ridurre la loro differenziazione in plasmacellule e di aumentarne l'apoptosi esitando, in ultima analisi, in una riduzione della produzione delle immunoglobuline e quindi, anche degli auto-anticorpi [40].

Inoltre, il VDR è localizzato anche sugli enterociti, ove ne regola la proliferazione, la differenziazione e l'apoptosi, in pratica governa l'enterocinetica, giocando quindi un ruolo di primo piano nei meccanismi di difesa e nella funzionalità della barriera intestinale [41]. A tal proposito, occorre menzionare i lavori di Chen et al. in cui si dimostra che la vitamina D svolge un effetto protettivo sulla barriera epiteliale *in vitro* e *in vivo* agendo sulla via *myosin light-chain kinase-dipendente* che, a sua volta, è attivata dall'aumento del fattore nucleare-kB indotto da uno stimolo infiammatorio [42,43]. In particolare, la via *myosin light-chain kinase*-dipendente agisce direttamente sull'assemblaggio dei filamenti di actina, determinado una contrazione del citoscheletro e quindi una distruzione delle giunzioni strette. Ciò è di estrema importanza se consideriamo che il disassemblaggio di queste ultime è già stato dimostrato nella MC [44].

In seguito, il gruppo di Dong ha confermato l'effetto protettivo della vitamina D nei confronti delle giunzioni strette enterocitarie sia utilizzando un modello *in vitro* di monostrato di cellule $CaCo_2$ in cui la rottura della barriera epiteliale era indotta dai peptidi della gliadina, sia in un modello *in vivo* glutine-sensibile [45]. In particolare, in entrambi i modelli, la vitamina D era capace di inibire il rilascio di zonulina indotto dalla gliadina, proteggere l'integrità delle giunzioni strette e, quindi, di mantenere la competenza della barriera. Ma il primo lavoro che ha messo in relazione un possibile ruolo extra-osseo della vitamina D nella

MC del bambino è quello di Tanpowpong et al. [46]. Gli autori hanno dimostrato come la carenza di vitamina D potrebbe contribuire ad alterare la barriera intestinale, rendendo i soggetti più suscettibili alle infezioni enteriche e, di conseguenza, al rischio di sviluppare un'abnorme risposta immunitaria nei confronti degli antigeni presenti nel lume intestinale. Ciò ha completamente rivoluzionato il modo in cui noi clinici pensiamo alla vitamina D nella MC ove una sua carenza era considerata solo un effetto dell'enteropatia e non una possibile causa. Infine, in una coorte di celiaci adulti, la carenza di vitamina D correlava con l'aumentata frequenza di psoriasi, sebbene non di altre malattie autoimmuni [47]. Tutto ciò ci conduce a pensare che la semplice determinazione dei livelli sierici di tale vitamina nella MC sia riduttiva, pertanto auspichiamo che in futuro vengano condotti studi volti ad approfondire la globalità dei suoi effetti nel determinare il rischio di sviluppare tale patologia, di perpetuare il danno d'organo e, forse, anche di sviluppare le complicanze.

CONCLUSIONI

Da quanto esposto, appare evidente che la vitamina D possa giocare un ruolo di primo piano nella patogenesi della MC sia attraverso un effetto protettivo diretto sulla barriera intestinale, sia modulando la risposta immunitaria a favore dei meccanismi di tolleranza. Ciò conduce a ipotizzare che programmi di prevenzione della sua carenza possano contribuire ad arginare l'aumento dell'incidenza non solo di questa patologia, ma anche di molte altre malattie infiammatorie croniche. In tal senso, vale la pena ricordare che una carenza di vitamina D della madre durante la gravidanza sembra legata a un'aumentato rischio di sviluppare malattie autoimmuni, tra cui la MC, soprattutto nei primi due anni di vita [48]. Ovviamente, non è pensabile di supplementare tutta la popolazione, soprattutto chi ha un adeguato introito giornaliero di vitamina D, in quanto un sovradosaggio non solo è dannoso per l'osso, ma anche per l'omeostasi immunologica in quanto favorisce una polarizzazione in senso T-helper 2 [49,50]. È fondamentale, pertanto, portare avanti programmi di prevenzione e di screening sulla popolazione volti a identificare un'eventuale carenza della vitamina D al fine di limitare le conseguenze su larga scala.

Ringraziamenti

Un sentito ringraziamento ai celiaci e ai loro familiari per la disponibilità a partecipare a ricerche volte a migliorare la nostra conoscenza sulla malattia e, quindi, la loro condizione.

Bibliografia

1 Hanel A, et al. Vitamin D and evolution: pharmacologic implications. Biochem Pharmacol 2020;173:113595. https://doi.org/10.1016/j.bcp.2019.07.024

2 Murdaca G, et al. Emerging role of vitamin D in autoimmune diseases: an update on evidence and therapeutic implications. Autoimmun Rev 2019;18:102350. https://doi.org/10.1016/j.autrev.2019.102350

3 Illescas-Montes R, et al. Vitamin D and autoimmune diseases. Life Sciences 2019;233:116744. https://doi.org/10.1016/j.lfs.2019.116744

4 Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet 2015;386:743–800. https://doi.org/10.1016/S0140-6736(15)60692-4

5 de Souza HSP & Fiocchi C. Immunopathogenesis of IBD: current state of the art. Nat Rev Gastroenterol Hepatol 2016;13:13-27. https://doi.org/10.1038/nrgastro.2015.186

6 Singh P, et al. Global prevalence of celiac disease: systematic review and meta-analysis. Clin Gastroenterol Hepatol 2018;16:823-836. https://doi.org/10.1016/j.cgh.2017.06.037

7 Catassi C, et al. Coeliac disease in the year 2000: exploring the iceberg. Lancet 1994;343:200-203. https://doi.org/10.1016/s0140-6736(94)90989-x

8 King JA, et al. Incidence of celiac disease is increasing over time: a systematic review and meta-analysis. Am J Gastroenterol 2020;115:507-525. https://doi.org/10.14309/ajg.0000000000000523

9 Micic D, et al. Celiac disease and its role in the development of metabolic bone disease. J Clin Densitom 2020;23(2):190-199. https://doi.org/10.1016/j.jocd.2019.06.005

10 Yamamoto E, et al. Immunological effects of vitamin D and their relations to autoimmunity. J Autoimmun 2019;100:7-16. https://doi.org/10.1016/j.jaut.2019.03.002

11 Di Sabatino A, et al. Coeliac disease. Lancet 2009;373:1480-1493. https://doi.org/10.1016/S0140-6736(09)60254-3

12 Sapone A, et al. Spectrum of gluten-related disorders: consensus on new nomenclature and classification. BMC Med 2012;10:13. https://doi.org/10.1186/1741-7015-10-13

13 Corazza GR, et al. Comparison of the interobserver reproducibility with different histologic criteria used in celiac disease. Clin Gastroenterol Hepatol 2007;5:838-843. https://doi.org/10.1016/j.cgh.2007.03.019

14 Ludvigsson JF, et al. The missing environmental factor in celiac disease. J Med 2014;371:1285-1294.

15 Wieser H. Chemistry of gluten proteins. Food Microbiol 2007;24:115–119. https://doi.org/10.1056/NEJMe1408011

16 Shan L, et al. Comparative biochemical analysis of three bacterial prolyl endopeptidases: Implications for coeliac sprue. Biochem J 2004;383:311–318. https://doi.org/10.1042/BJ20040907

17 Luissint A-C, et al. Inflammation and the intestinal barrier: leukocyte-epithelial cell interactions, cell junction remodelling, and mucosal repair. Gastroenterology 2016;151:616-632. https://doi.org/10.1053/j.gastro.2016.07.008

18 Fasano A, et al. Zonulin, a newly discovered modulator of intestinal permeability, and its expression in coeliac disease. Lancet 2000;355:1518-1519. https://doi.org/10.1016/S0140-6736(00)02169-3

19 Lammers KM, et al. Gliadin induces an increase in intestinal permeability and zonulin release by binding to the chemokine receptor CXCR3. Gastroenterology 2008;135:194-204. https://doi.org/10.1053/j.gastro.2008.03.023

20 Peterson LW, et al. Intestinal epithelial cells: regulators of barrier function and immune homeostasis. Nat Rev Immunol 2014;14:141–153. https://doi.org/10.1038/nri3608

21 Martini E, et al. Mend Your Fences: The Epithelial Barrier and its Relationship With Mucosal Immunity in Inflammatory Bowel Disease. Cell Mol Gastroenterol Hepatol 2017;4:33-46. https://doi.org/10.1016/j.jcmgh.2017.03.007

22 Amon L, et al. The ontogenetic path

of human dendritic cells. Mol Immunol 2020;120:122-129. https://doi.org/10.1016/j.molimm.2020.02.010

23 Caminero A, et al. Duodenal bacteria from patients with celiac disease and healthy subjects distinctly affect gluten breakdown and immunogenicity. Gastroenterology 2016;151:670-683. https://doi.org/10.1053/j.gastro.2016.06.041

24 Dieterich W, et al. Identification of tissue transglutaminase as the autoantigen of celiac disease. Nat Med 1997;3:797-801. https://doi.org/10.1038/nm0797-797

25 Shan L, et al. Structural basis for gluten intolerance in celiac sprue. Science 2002;297:2275–2279. https://doi.org/10.1126/science.1074129

26 Sollid LM. Molecular basis of celiac disease. Annu Rev Immunol 2000;18:53–81. https://doi.org/10.1146/annurev.immunol.18.1.53

27 Ciccocioppo R, et al. Increased enterocyte apoptosis and Fas-Fas ligand system in celiac disease. Am J Clin Pathol 2001;115:494-503. https://doi.org/10.1309/UV54-BHP3-A66B-0QUD

28 Iversen R, et al. Efficient T cell-B cell collaboration guides autoantibody epitope bias and onset of celiac disease. Proc Natl Acad Sci U S A 2019;116:15134-15139. https://doi.org/10.1073/pnas.1901561116

29 Husby S, et al. AGA clinical practice update on diagnosis and monitoring of celiac disease - changing utility of serology and histologic measures: expert review. Gastroenterology 2019;156:885-889. https://doi.org/10.1053/j.gastro.2018.12.010

30 Haussler MR, et al. The vitamin D hormone and its nuclear receptor: molecular actions and disease states. J Endocrinol 1997;154:S57-73.

31 Kamen DL, et al. Vitamin D and molecular actions on the immune system; modulation of innate and autoimmunity. J Mol Med 2010;88:441-450. https://doi.org/10.1007/s00109-010-0590-9

32 San-Pedro JI, et al. Heterogeneity of vitamin D receptor gene association with celiac disease and type 1 diabetes mellitus. Autoimmunity 2005;38:439-444. https://doi.org/10.1080/08916930500288455

33 Charoenngam N, et al. Immunologic effects of vitamin D on human health and disease. Nutrients 2020;12:2097. https://doi.org/10.3390/nu12072097

34 Neme A, et al. The vitamin D-dependent transcriptome of human monocytes. J Steroid Biochem Mol Biol 2016;164:180-187. https://doi.org/10.1016/j.jsbmb.2015.10.018

35 Nurminen V, et al. Primary vitamin D target genes of human monocytes. Front Physiol 2019;10:194. https://doi.org/10.3389/fphys.2019.00194

36 Barragan M, et al. Regulation of dendritic cell function by vitamin D. Nutrients 2015;7:8127-8151. https://doi.org/10.3390/nu7095383

37 Ferreira GB, et al. 1,25-Dihydroxyvitamin D3 alters murine dendritic cell behaviour in vitro and in vivo. Diabetes/Metab Res Rev 2011;27:933–941. https://doi.org/10.1002/dmrr.1275

38 Baeke F, et al. Human T lymphocytes are direct targets of 1, 25-dihydroxyvitamin D3 in the immune system. J Steroid Biochem Mol Biol 2010;121:221–227. https://doi.org/10.1016/j.jsbmb.2010.03.037

39 Ettersperger J, et al. Interleukin-15-dependent T-cell-like innate intraepithelial lymphocytes develop in the intestine and transform into lymphomas in celiac disease. Immunity 2016;45:610-625. https://doi.org/10.1016/j.immuni.2016.07.018

40 Rolf L, et al. Vitamin D effects on B cell function and autoimmunity. Ann NY Acad Sci 2014;1317:84-91. https://doi.org/10.1111/nyas.12440

41 Du J, et al. 1, 25-Dihydroxyvitamin D protects intestinal epithelial barrier by regulating the myosin light chain kinase signaling pathway. Inflamm Bowel Dis 2015;21:2495–2506. https://doi.org/10.1097/mib.0000000000000526

42 Chen S-W, et al. Protective effect of 1, 25-dihydroxyvitamin D3 on ethanol-induced intestinal barrier injury both in vitro and in vivo. Toxicol Lett 2015;237:79–88. 10.1016/j.toxlet.2015.06.006

43 Chen S, et al. 1,25-Dihydroxyvitamin D3 preserves intestinal epithelial barrier function from TNF-α induced injury via suppression of NF-kB p65 mediated MLCK-P-MLC signaling pathway. Biochem Biophys Res Commun 2015;460:873–878. 10.1016/j.bbrc.2015.03.125

44 Ciccocioppo R, et al. Altered expression, localization, and phosphorylation of epithelial junctional proteins in celiac disease. Am J Clin Pathol 2006;125:502-511. https://doi.org/10.1309/DTYRA-91G8R0KTM8M 10.130

45 Dong S, et al. Protective Effect of 1,25-Dihydroxy Vitamin D3 on Pepsin-Trypsin-Resistant Gliadin-Induced Tight Junction Injuries. Dig Dis Sci 2018;63:92–104. 10.1007/s10620-017-4738-0

46 Tanpowpong P, et al. Early-life vitamin D deficiency and childhood-onset coeliac disease. Public Health Nutr 2014;17:823–826. https://doi.org/10.1017/S1368980013003510

47 Tavakkoli A, et al. Vitamin D status and concomitant autoimmunity in celiac disease. J Clin Gastroenterol 2013;47:515–519. https://doi.org/10.1097/MCG.0b013e318266f81b

48 Marild K, et al. Maternal and neonatal vitamin D status, genotype and childhood celiac disease. PLoS ONE 2017;12:e0179080. https://doi.org/10.1371/journal.pone.0179080

49 Bittker SS, et al. Potential risk factors for celiac disease in childhood: a case-control epidemiological survey. Clin Exp Gastroenterol 2019;12:303-319. https://doi.org/10.2147/CEG.S210060

50 Bittker SS. Elevated Levels of 1, 25-Dihydroxyvitamin D in Plasma as a Missing Risk Factor for Celiac Disease. Clin Exp Gastroenterol 2020;13:1-15. https://doi.org/10.2147/CEG.S222353

La vitamina D e il COVID-19: un raggio di sole nella tempesta?

VITAMIN D
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La patologia COVID-19 (*COronaVIrus Disease-2019*), come in molte patologie emergenti, presenta caratteristiche biologiche, manifestazioni cliniche e di imaging strumentale assolutamente uniche. COVID-19 è la conseguenza, in alcuni soggetti, dell'infezione da *Severe Acute Respiratory Syndrome CoronaVirus-2* (SARS-CoV-2), a oggi il settimo tipo di coronavirus in grado di infettare l'uomo [1]. L'infezione si è rapidamente diffusa a tutto il pianeta partendo dalla Cina [2]. Il virus ha un'elevata trasmissibilità, principalmente attraverso *droplets* emesse con la fonazione e il respiro, o tramite contatto diretto (sebbene nelle fasi più avanzate dell'infezione il virus sia riscontrabile anche nelle feci e questo non esclude una possibile via di infezione oro-fecale) [1]. COVID-19 ha un'incubazione che va da 1 giorno a 2 settimane, con un picco tra il 3° e 7° giorno. Lo spettro di espressione clinica varia da forme del tutto asintomatiche fino a quadri drammatici come l'*Acute Respiratory Distress Syndrome* (ARDS). I sintomi più comuni nelle forme lievi-moderate sono febbre, astenia e la tosse secca, alle quali possono seguire o accompagnare cefalea, congestione nasale, faringodinia, mialgie e artralgie. Raramente vi è in coinvolgimento gastro-intestinale (specie nei bambini) con nausea, vomito e diarrea [1]. Una proporzione variabile di soggetti infettati, spesso durante la seconda settimana di malattia, sviluppa difficoltà respiratoria, ipossia, desaturazione e tachipnea. Questi sono i segni tipici del coinvolgimento polmonare severo che può arrivare fino alla polmonite bilaterale di tipo interstiziale e che a sua volta può purtroppo evolvere in ARDS, caratterizzata da morbilità e mortalità considerevoli [1]. Frequente è anche la presenza di disturbi del sistema coagulativo e una trombocitopenia con conseguente aumentato rischio di emorragia, associata o meno ad altri disordini ematologici, come trombosi periferica, trombosi venosa profonda, tromboembolia polmonare e coagulazione intravasale disseminata (DIC) [1].

Considerate le attuali limitazioni dei trattamenti antivirali a oggi disponibili, la gestione clinica si basa essenzialmente sul controllo della risposta infiammatoria abnorme e sul supporto respiratorio in ambiente ospedaliero. Questo spiega perché la pandemia abbia finito per sconvolgere anche le economie e i sistemi sanitari più consolidati, imponendo un ripensamento sull'allocazione degli sforzi e delle risorse. Sembra scontato in un momento di crisi abbassare l'attenzione da tutte quelle condizioni che non sono considerate "essenziali". Tuttavia, siamo davvero sicuri che questa strategia sia corretta? Su questo tema (in particolare per quanto riguarda il problema osteoporosi) è stato pubblicato un interessante editoriale [3] dove viene riportata una massima di Jawaharlala Neru (erede spirituale di Gandhi), che affermava: "in una crisi, ogni piccola cosa conta". Questa citazione dovrebbe far riflettere, soprattutto perché, a oggi, sono ancora pochi i dati a disposizione non solo relativamente ai trattamenti concretamente efficaci, ma anche riguardo i fattori in grado di condizionare la suscettibilità all'infezione e la sua gravità.

Certamente, le vitamine sono "una piccola cosa", ma la vitamina D in particolare (o meglio, la sua carenza) potrebbe avere un ruolo non irrilevante, anche in relazione ai suoi dibattuti effetti extrascheletrici. Sebbene siamo perfettamente d'accordo con l'*European Society for Clinical and Osteoarthritis* (ESCEO) sul fatto che non vi siano al momento evidenze sufficienti per raccomandare l'uso della supplementazione vitaminica D per la prevenzione e/o trattamento di patologie extrascheletriche [4], dobbiamo anche ricordare come sia stato proprio questo *position paper* a sottolineare la crescente mole di dati disponibili (soprattutto indiretti ma anche diretti) a supporto degli effetti extrascheletrici della vitamina D [4].

Fino a oggi, l'infezione da SARS-CoV-2 pare essere risultata più frequente e particolarmente aggressiva anche in termini di mortalità nei paesi del Sud Europa (specie Italia e

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Numero di pazienti che devono essere supplementati (NNT) con vitamina D per evitare un'infezione respiratoria acuta (da metanalisi di 25 studi con oltre 11.300 soggetti)

INTERA CASISTICA SENZA SUBANALISI	NNT = 33
Solo supplementazione quotidiana o settimanale	NNT = 20
Solo soggetti con livelli di vitamina D < 10 ng/ml	NNT = 8
Solo soggetti con livelli di vitamina D < 10 ng/ml + solo supplementazione quotidiana o settimanale	NNT = 4

FIGURA 1.
Dai dati di questa vasta metanalisi emerge come la supplementazione vitaminica D sia in grado di ridurre significativamente il rischio di infezioni respiratorie acute. La protezione (in termini di NNT) è più marcata nei soggetti gravemente carenti e appare particolarmente rilevante con l'uso della somministrazione quotidiana o settimanale (da Martineau et al., 2017, mod) [6].

Spagna), che sono gli stessi maggiormente coinvolti dalla condizione di ipovitaminosi D [5]. In Italia le regioni più colpite sono quelle del Nord, rispetto alle più soleggiate Regioni Meridionali e, soprattutto, durante il periodo invernale. I soggetti anziani, e soprattutto quelli nelle lungodegenze, nei quali l'ipovitaminosi D è sostanzialmente endemica, sono quelli che hanno pagato le conseguenze più drammatiche della malattia e lo stesso dicesi per gli obesi, anch'essi a elevato rischio di deficit vitaminico D.

Come abbiamo già detto, COVID-19 è prevalentemente una malattia infettiva respiratoria e la mole di dati a favore di un significativo effetto della vitamina D nel prevenire e mitigare le infezioni respiratorie è divenuta in questi ultimi anni sempre più consistente. Un'interessante metanalisi pubblicata nel 2019 ha analizzato i dati di oltre 11.300 pazienti provenienti da 25 studi randomizzati, dimostrando un effetto protettivo della supplementazione vitaminica D verso le infezioni respiratorie acute, effetto non solo statisticamente ma anche clinicamente significativo: *Number Needed to Treat* (NNT) = 33. Ovviamente, l'efficacia è risultata maggiore nei soggetti affetti da una severa carenza (NNT = 8) (Fig. 1). Questa azione protettiva della vitamina D non è tuttavia risultata evidente nella subanalisi dei 15 studi che prevedevano l'uso della somministrazione con boli e, pertanto, l'effetto protettivo parrebbe quindi in gran parte sostenuto dall'effetto della supplementazione quotidiana o settimanale (10 studi), dove il risultato è stato particolarmente interessante (Fig. 1) [6]. Un'altra metanalisi si è invece concentrata sui pazienti con BPCO (broncopneumopatia cronica ostruttiva) dimostrando ancora una volta come la supplementazione vitaminica D sia in grado sostanzialmente di dimezzare il numero delle riacutizzazioni respiratorie moderate/severe nei pazienti con stato carenziale al baseline (<10 ng/ml) [7]. Questa ultima osservazione appare fondamentale visto il gran numero di studi clinici negativi sulla vitamina D recentemente pubblicati, che purtroppo condividono proprio questo limite, ovvero l'arruolamento di una maggioranza di soggetti non solo non carenti ma spesso addirittura con valori ben al di sopra del limite ideale [8]. La vitamina D, infatti, non andrebbe considerata un agente farmacologico, bensì un micronutriente. Conseguentemente, la sua supplementazione risulta indicata ed efficace strettamente in condizioni di deficit.

Il ruolo immunomodulatore della vitamina D è noto da tempo. Essa è in grado di sostenere l'immunità innata mediante la produzione di peptidi antimicrobici, quali le catelicidine, le defensine e l'IL-37. Inoltre, mediante la modulazione delle principali citochine proinfiammatorie, quali IL-6, TNF-alfa e interferone-gamma, è in grado di agire sull'immunità adattativa controllando la risposta mediata dai linfociti Th1 [9]. Questo controllo chiaramente inizia a zoppicare in condizioni di deficit vitaminico D, il quale tuttavia si ripristina dopo un'adeguata supplementazione. Un recente studio su cellule dell'epitelio respiratorio ha dimostrato che il pretrattamento con concentrazioni fisiologiche di metaboliti della vitamina D (calcifediolo o calcitriolo) sia in grado di produrre una transitoria resistenza all'infezione da Rinovirus (Rv-16) e di attenuare la produzione indotta dal virus delle molecole di adesione necessarie sia al Rinovirus che allo *Streptococcus pneumoniae*. Tutto questo si accompagna all'attivazione del gene per la catelicidina e alla modulazione di NF-kB, ulteriori possibili meccanismi alla base degli effetti protettivi della vitamina D sul rischio di infezione da Rinovirus e di sovra-infezione batterica [10]. Per quanto riguarda il virus SARS-CoV-2, i dati per il momento sono ancora limitati, ma un report preliminare di uno studio che ha valutato il potenziale antivirale di diverse molecole ha documentato l'effetto inibitorio del calcitriolo sull'epitelio nasale infettato dal virus [11]. Questo dato appare di particolare interesse se consideriamo uno studio israeliano su 14.000 soggetti testati per infezione da SARS-CoV-2 che avevano eseguito almeno un precedente dosaggio sierico della 25-idrossi-vitamina D [25(OH)D]. Dai risultati emerge come avere livelli di vitamina D sub-ottimali (< 30 ng/ml) rappresenti un potenziale fattore di rischio di infezione da SARS-CoV-2, di sviluppo conseguentemente di COVID-19 e, in particolare, di necessità di ospedalizzazione [12]. Questi risultati appaiono in linea con quelli di uno studio americano su un campione di 489 soggetti che avevano una pregressa valutazione dello stato vitaminico D nell'anno precedente. Di questa coorte, 71 soggetti sono in seguito risultati positivi per infezione da SARS-CoV-2. Lo studio ha documentato come l'essere "probabilmente" carenti (livelli circolanti di 25(OH)D < 20 ng/ml oppure di $1,25(OH)_2D$ < 18 pg/ml) fosse associato a un rischio 1,77 volte maggiore di essere positivi al test [13].

Al contrario, un simile studio inglese non ha replicato tale riscontro [14], sebbene valori "anamnestici" di metaboliti della vitamina D potrebbero non essere rappresentativi della reale condizione al momento dell'infezione e quindi apportare un limite non indifferente di questo tipo di esperienze scientifiche.
Un rilevamento interessante dello studio americano già citato [13] è che nei 48 soggetti inizialmente carenti e che grazie alla supplementazione vitaminica D sono arrivati a livelli adeguati, il rischio di essere positivi test per SARS-CoV-2 sarebbe risultato sovrapponibile a quello dei soggetti che erano fin dall'inizio repleti di vitamina D. Questo sembrerebbe appunto supportare l'effetto protettivo della supplementazione vitaminica D quando in grado di normalizzare lo stato vitaminico del soggetto. Il numero limitato dei casi, tuttavia, si associa a un intervallo di confidenza troppo grande per poter sostenere questa ipotesi in maniera solida.
Differente è invece il disegno di uno studio svizzero che ha valutato i livelli circolanti di 25(OH)D in una coorte di pazienti con sintomi sospetti per COVID-19 dopo qualche settimana dall'esecuzione del tampone, dimostrando come nei soggetti poi risultati positivi i livelli fossero significativamente più bassi (mediana circa 11 ng/ml) rispetto ai negativi (mediana circa 25 ng/ml) [15]. Il dato appare interessante anche se non si può escludere che proprio l'infezione virale di per sé possa essere stata la causa del deficit vitaminico D. La relativamente breve durata dell'infezione (poche settimane), tuttavia, rende comunque questa ipotesi tutto sommato meno probabile.
La vitamina D, oltre a fornire una potenziale protezione dall'infezione, potrebbe anche condizionare l'evoluzione e la gravità della stessa, come del resto suggerisce anche il dato relativo alle ospedalizzazioni dello studio israeliano sopra citato [12]. La modulazione/soppressione da parte della vitamina D di un'eventuale eccessiva risposta Th1 potrebbe infatti contribuire a contrastare la tempesta citochinica alla base del danno polmonare e della progressione verso l'ARDS [9]. Infatti, la carenza vitaminica D è dimostrata essere associata a un maggior rischio di sviluppare ARDS [16]. Inoltre, la sua correzione, parrebbe essere in grado di ridurre il danno capillare alveolare prodottosi nei soggetti carenti [16]. Questa capacità protettiva della vitamina D sembra essere secondaria all'azione locale del metabolita attivo calcitriolo sul sistema renina-angiotensina mediante un effetto diretto sull'espressione degli enzimi ACE [17]. Ciò risulta particolarmente interessante se consideriamo che l'ACE-2 è ritenuto essere il recettore chiave per le infezioni da SARS-CoV-2. Come infatti noto, il virus si legherebbe tramite la proteina *spike* proprio al recettore ACE-2 per poter penetrare nelle cellule polmonari e in seguito agirebbe downregolando sia l'attività che l'espressione dell'enzima stesso [9].

In conclusione, i dati a nostra disposizione rendono a nostro avviso credibile un legame tra carenza di vitamina D e suscettibilità e severità della infezione da SARS-CoV-2. Sulla base di questo razionale, diversi studi clinici interventistici sono stati avviati in pazienti con quadri di infezione severa. Si tratta di una sfida che molti esperti, noi compresi, riteniamo sarà difficile da vincere [18]. In questa tipologia di pazienti, infatti, l'abnorme risposta infiammatoria è probabilmente già troppo sostenuta per ipotizzare un significativo beneficio da parte della supplementazione vitaminica D, anche in soggetti molto carenti. Inoltre, i farmaci steroidei o immunosoppressori utilizzati in questi casi hanno effetti tali da mascherare quelli potenziali della vitamina D, che rimane pur sempre un micronutriente. In ogni caso, vista la prevalenza del deficit vitaminico D, questi soggetti andrebbero a nostro avviso comunque supplementati.
Più promettente potrebbe essere invece lo studio sul beneficio della supplementazione (quotidiana o settimanale) nella riduzione della suscettibilità all'infezione e progressione verso forme più severe.
Rimane infine un fondato timore sull'impatto che la nota AIFA 96 potrebbe aver avuto sulla prevalenza del deficit vitaminico D, non solo nei soggetti più fragili dal punto di vista osseo, ma anche in quelli più a rischio di COVID-19.
Sottolineamo quindi la necessità di una forte presa di posizione in tempi rapidi, prima dell'inizio dei mesi invernali e di un'eventuale ripresa della forza della pandemia, soprattutto se davvero convinti che "in una crisi, ogni piccola cosa conta".

Bibliografia

1 Zhou M, Zhang X, Qu J. Coronavirus disease 2019 (COVID-19): a clinical update. Front Med 2020;14:126-35. https://doi.org/10.1007/s11684-020-0767-8

2 Wu F, Zhao S, Yu B, et al. A new coronavirus associated with human respiratory disease in China. Nature 2020;579:265-9. https://doi.org/10.1038/s41586-020-2008-3

3 Paskins Z, Crawford-Manning F, Bullock L, et al. Identifying and managing osteoporosis before and after COVID-19: rise of the remote consultation? Osteoporos Int J Establ Result Coop Eur Found Osteoporos Natl Osteoporos Found USA 2020;31:1629-32. https://doi.org/10.1007/s00198-020-05465-2

4 Cianferotti L, Bertoldo F, Bischoff-Ferrari HA, et al. Vitamin D supplementation in the prevention and management of major chronic diseases not related to mineral homeostasis in adults: research for evidence and a scientific statement from the European society for clinical and economic aspects of osteoporosis and osteoarthritis (ESCEO). Endocrine 2017;56:245-61. https://doi.org/10.1007/s12020-017-1290-9

5 Manios Y, Moschonis G, Lambrinou C-P, et al. A systematic review of vitamin D status in southern European countries. Eur J Nutr 2018;57:2001-36. https://doi.org/10.1007/s00394-017-1564-2

6 Martineau AR, Jolliffe DA, Hooper RL, et al. Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. BMJ 2017;356:i6583. https://doi.org/10.1136/bmj.i6583

7 Jolliffe DA, Greenberg L, Hooper RL, et al. Vitamin D to prevent exacerbations of COPD: systematic review and meta-analysis of individual participant data from randomised controlled trials. Thorax 2019;74:337-45. http://dx.doi.org/10.1136/thoraxjnl-2018-212092

8 Gatti D, Bertoldo F, Adami G, et al. Vitamin D supplementation: much ado about nothing. Gynecol Endocrinol Off J Int Soc Gynecol Endocrinol 2020;36:185-9. http://dx.doi.org/10.1080/09513590.2020.1731452

9 Chandran M, Chan Maung A, Mithal A, et al. Vitamin D in COVID-19: dousing the fire or averting the storm? – A perspective from the Asia-Pacific. Osteoporos Sarcopenia 2020 Jul 23; in press. https://doi.org/10.1016/j.afos.2020.07.003

10 Greiller CL, Suri R, Jolliffe DA, et al. Vitamin D attenuates rhinovirus-induced expression of intercellular adhesion molecule-1 (ICAM-1) and platelet-activating factor receptor (PAFR) in respiratory epithelial cells. J Steroid Bio-

chem Mol Biol 2019;187:152-9. https://doi.org/10.1016/j.jsbmb.2018.11.013

11 Mok CK, Ng YL, Ahidjo BA, et al. Calcitriol, the active form of vitamin D, is apromising candidate for COVID-19 prophylaxis. MedRxiv 2020; published online June 22. https://doi.org/10.1101/2020.06.21.162396

12 Merzon E, Tworowski D, Gorohovski A, et al. Low plasma 25(OH) vitamin D level is associated with increased risk of COVID-19 infection: an Israeli population-based study. FEBS J 2020 Jul 23. https://doi.org/10.1111/febs.15495

13 Meltzer DO, Best TJ, Zhang H, et al. Association of vitamin D status and other clinical characteristics with COVID-19 test results. JAMA Netw Open 2020;3:e2019722. https://doi.org/10.1001/jamanetworkopen.2020.19722

14 Hastie CE, Pell JP, Sattar N. Vitamin D and COVID-19 infection and mortality in UK Biobank. Eur J Nutr 2020 Aug 26. https://doi.org/10.1007/s00394-020-02372-4

15 D'Avolio A, Avataneo V, Manca A, et al. 25-Hydroxyvitamin D concentrations are lower in patients with positive PCR for SARS-CoV-2. Nutrients 2020;12:1359. https://doi.org/10.3390/nu12051359.

16 Dancer RCA, Parekh D, Lax S, et al. Vitamin D deficiency contributes directly to the acute respiratory distress syndrome (ARDS). Thorax 2015;70:617-24. https://doi.org/10.1136/thoraxjnl-2014- 206680

17 Xu J, Yang J, Chen J, et al. Vitamin D alleviates lipopolysaccharide-induced acute lung injury via regulation of the renin-angiotensin system. Mol Med Rep 2017;16:7432-8. https://doi.org/10.3892/mmr.2017.7546

18 Martineau AR, Forouhi NG. Vitamin D for COVID-19: a case to answer? Lancet Diabetes Endocrinol 2020;8:735-6. https://doi.org/10.1016/S2213-8587(20)30268-0

SELEZIONE BIBLIOGRAFICA

VITAMIN D UpDates
2020;3(4):132-167

CARDIOLOGIA

- Adamczak M, Surma S, Więcek A. Vitamin D and Arterial Hypertension: Facts and Myths. Curr Hypertens Rep. 2020 Jul 15;22(8):57. https://doi.org/10.1007/s11906-020-01059-9. PMID: 32671631 Review.
- Al-Bayyari N, Hailat R, Subih H, et al. Vitamin D(3) reduces risk of cardiovascular and liver diseases by lowering homocysteine levels: double-blinded, randomised, placebo-controlled trial. Br J Nutr. 2020 Jun 1:1-8. https://doi.org/10.1017/S0007114520001890. Online ahead of print. PMID: 32475360
- Al-Sumaih I, Johnston B, Donnelly M, et al. The relationship between obesity, diabetes, hypertension and vitamin D deficiency among Saudi Arabians aged 15 and over: results from the Saudi health interview survey. BMC Endocr Disord. 2020 Jun 5;20(1):81. https://doi.org/10.1186/s12902-020-00562-z. PMID: 32503594
- Amiri M, Zimorovat A, Raeisi-Dehkordi H. Meta-analysis of vitamin D supplementation on endothelial function: Methodological limitations. Nutr Metab Cardiovasc Dis. 2020 Jul 24;30(8):1405-1406. https://doi.org/10.1016/j.numecd.2020.04.026. Epub 2020 May 5. PMID: 32513583
- Bahrami LS, Ranjbar G, Norouzy A, et al. Vitamin D supplementation effects on the clinical outcomes of patients with coronary artery disease: a systematic review and meta-analysis. Sci Rep. 2020 Jul 31;10(1):12923. https://doi.org/10.1038/s41598-020-69762-w. PMID: 32737345
- Bauer P, Kraushaar L, Dörr O, et al. Association of 25-hydroxy vitamin D level with the blood pressure response to a maximum exercise test among professional indoor athletes. Eur J Appl Physiol. 2020 Aug;120(8):1931-1941. https://doi.org/10.1007/s00421-020-04421-6. Epub 2020 Jun 25. PMID: 32588193
- Bener A, Al-Hamaq AOAA, Zughaier SM, et al. Assessment of the Role of Serum 25-Hydroxy Vitamin D Level on Coronary Heart Disease Risk With Stratification Among Patients With Type 2 Diabetes Mellitus. Angiology. 2020 Aug 25:3319720951411. https://doi.org/10.1177/0003319720951411. Online ahead of print. PMID: 32840113
- Billington EO, Burt LA, Plett R, et al. Effect of high-dose vitamin D supplementation on peripheral arterial calcification: secondary analysis of a randomized controlled trial. Osteoporos Int. 2020 Jun 15. https://doi.org/10.1007/s00198-020-05500-2. Online ahead of print. PMID: 32556518
- Boucher BJ, Grant WB. Difficulties in designing randomised controlled trials of vitamin D supplementation for reducing acute cardiovascular events and in the analysis of their outcomes. Int J Cardiol Heart Vasc. 2020 Jun 25;29:100564. https://doi.org/10.1016/j.ijcha.2020.100564. eCollection 2020 Aug. PMID: 32617386
- Cha JJ, Wi J. Association of Vitamin D Deficiency with Profound Cardiogenic Shock in Patients Resuscitated From Sudden Cardiac Arrest. Shock. 2020 Jun;53(6):717-722. https://doi.org/10.1097/SHK.0000000000001441. PMID: 31490356
- Dieberg G, Nick L P, Melissa J P, et al. Author's Reply to Amiri et al.- Meta-analysis of vitamin D supplementation on endothelial function: Methodological limitations. Nutr Metab Cardiovasc Dis. 2020 Jul 24;30(8):1406-1407. https://doi.org/10.1016/j.numecd.2020.04.028. Epub 2020 May 18. PMID: 32595084
- Farrell SW, Leonard D, Barlow CE, et al. Cardiorespiratory Fitness, Serum Vitamin D, and Prevalence of Metabolic Syndrome in Men. Med Sci Sports Exerc. 2020 Jul 16. https://doi.org/10.1249/MSS.0000000000002445. Online ahead of print. PMID: 32694363
- Fassula AS, Gonzalez-Chica D, Giehl MC, et al. Moderator role of vitamin D concentrations on the association between metabolic syndrome and C-reactive protein among adults. Arch Endocrinol Metab. 2020 Jun 29:S2359-39972020005004208. https://doi.org/10.20945/2359-

3997000000272. Online ahead of print. PMID: 32609153

- Foulkes S, Kukuljan S, Nowson CA, et al. Effects of a multi-modal resistance exercise program and calcium-vitamin D(3) fortified milk on blood pressure and blood lipids in middle-aged and older men: secondary analysis of an 18-month factorial design randomised controlled trial. Eur J Nutr. 2020 Jul 14. https://doi.org/10.1007/s00394-020-02325-x. Online ahead of print. PMID: 32666313
- Gilani A, Ramsay S, Welsh P, et al. Vitamin D deficiency is associated with increased risk of postural hypotension in older men: a cross-sectional analysis from The British Regional Heart Study. Br J Gen Pract. 2020 Jun;70(suppl 1):bjgp20X711209. https://doi.org/10.3399/bjgp20X711209. PMID: 32554649
- Giménez VMM, Sanz RL, Marón FJM, et al. Vitamin D-RAAS connection: An Integrative Standpoint into Cardiovascular and Neuroinflammatory Disorders. Curr Protein Pept Sci. 2020 Jun 6. https://doi.org/10.2174/1389203721666200606220719. Online ahead of print. PMID: 32504501
- Guo X, Lin H, Liu J, et al. 1,25-Dihydroxyvitamin D attenuates diabetic cardiac autophagy and damage by vitamin D receptor-mediated suppression of FoxO1 translocation. J Nutr Biochem. 2020 Jun;80:108380. https://doi.org/10.1016/j.jnutbio.2020.108380. Epub 2020 Mar 19. PMID: 32299030
- Ignatiev A, Turchin N, Ermolenko T, et al. [The efficiency of therapy with vitamin D metabolites of structural and functional changes in the bone tissue in women with arterial hypertension, obesity and deficiency vitamin d]. Georgian Med News. 2020 Jun;(303):93-97. PMID: 32841188
- Jin D, Zhu DM, Hu HL, et al. Vitamin D status affects the relationship between lipid profile and high-sensitivity C-reactive protein. Nutr Metab (Lond). 2020 Jul 14;17:57. https://doi.org/10.1186/s12986-020-00455-x. eCollection 2020. PMID: 32684941
- Nunes IFOC, Cavalcante AACM, Carvalho MVOB, et al. Meta-Analysis of the Association Between the rs228570 Vitamin D Receptor Gene Polymorphism and Arterial Hypertension Risk. Adv Nutr. 2020 Jun 29:nmaa076. https://doi.org/10.1093/advances/nmaa076. Online ahead of print. PMID: 32597926
- Orces CH, Montalvan M, Tettamanti D. The Effect of Statins on Serum Vitamin D Concentrations Among Older Adults. Cureus. 2020 Jul 1;12(7):e8950. https://doi.org/10.7759/cureus.8950. PMID: 32765995
- Oudshoorn C, Mezzadri M, Colin EM, et al. Serum vitamin D levels are associated with structural and functional properties of the carotid artery in older men and women. Eur Geriatr Med. 2020 Jun;11(3):409-415. https://doi.org/10.1007/s41999-020-00296-0. Epub 2020 Feb 21. PMID: 32297258
- Ozer PK, Emet S, Karaayvaz EB, et al. Silent myocardial dysfunction in vitamin D deficiency. Arch Med Sci Atheroscler Dis. 2020 Jul 11;5:e153-e162. https://doi.org/10.5114/amsad.2020.97110. eCollection 2020. PMID: 32832715
- Pishgahi M, Niroomand M, Bozorgmehr R, et al. Association between Serum Vitamin D Level and Echocardiographic Abnormalities in Patients with Thalassemia Major. Cardiovasc Hematol Disord Drug Targets. 2020 Jun 30. https://doi.org/10.2174/1871529X20666200701104931. Online ahead of print. PMID: 32611304
- Pál É, Hricisák L, Lékai Á, et al. Ablation of Vitamin D Signaling Compromises Cerebrovascular Adaptation to Carotid Artery Occlusion in Mice. Cells. 2020 Jun 12;9(6):1457. https://doi.org/10.3390/cells9061457. PMID: 32545499
- Ren L, Xuan L, Han F, et al. Vitamin D supplementation rescues simvastatin induced myopathy in mice via improving mitochondrial cristae shape. Toxicol Appl Pharmacol. 2020 Aug 15;401:115076. https://doi.org/10.1016/j.taap.2020.115076. Epub 2020 May 30. PMID: 32479918
- Ruz MEA, Momani A, Shajrawi AA. Vitamin D Mediates the Relationship Between Depressive Symptoms and Quality of Life Among Patients With Heart Failure. J Cardiovasc Nurs. 2020 Jul 30. https://doi.org/10.1097/JCN.0000000000000734. Online ahead of print. PMID: 32740223
- Sanz R, Mazzei L, Santino N, et al. Vitamin D-mitochondria cross-talk could modulate the signaling pathway involved in hypertension development: a translational integrative overview. Clin Investig Arterioscler. 2020 Jul-Aug;32(4):144-155. https://doi.org/10.1016/j.arteri.2020.02.002. Epub 2020 May 23. PMID: 32456803 Review. English, Spanish.
- Satish M, Gunasekar P, Asensio JA, et al. Vitamin D attenuates HMGB1-mediated neointimal hyperplasia after percutaneous coronary intervention in swine. Mol Cell Biochem. 2020 Aug 1. https://doi.org/10.1007/s11010-020-03847-y. Online ahead of print. PMID: 32737774
- Tasdighi E, Hekmat M, Beheshti M, et al. Vitamin D Treatment Attenuates Heart Apoptosis After Coronary Artery Bypass Surgery: A Double-Blind, Randomized, Placebo-Controlled Clinical Trial. J Cardiovasc Pharmacol Ther. 2020 Jul;25(4):338-345. https://doi.org/10.1177/1074248420920495. Epub 2020 Apr 23. PMID: 32323557
- Tay HM, Yeap WH, Dalan R, et al. Increased monocyte-platelet aggregates and monocyte-endothelial adhesion in healthy individuals with vitamin D deficiency. FASEB J. 2020 Jul 6. https://doi.org/10.1096/fj.202000822R. Online ahead of print. PMID: 32627899
- Verdoia M, Nardin M, Rolla R, et al. Prognostic impact of Vitamin D deficiency in patients with coronary artery disease undergoing percutaneous coronary intervention. Eur J Intern Med. 2020 Aug 20:S0953-6205(20)30332-0. https://doi.org/10.1016/j.ejim.2020.08.016. Online ahead of print. PMID: 32830035
- Verdoia M, Nardin M, Rolla R, et al. Vitamin D levels condition the outcome benefits of renin-angiotensin system inhibitors (RASI) among patients undergoing percutaneous coronary intervention. Pharmacol Res. 2020 Aug 22;160:105158. https://doi.org/10.1016/j.phrs.2020.105158. Online ahead of print. PMID: 32841717
- Verdoia M, Solli M, Ubertini E, et al. Low vitamin D levels affect left ventricular wall thickness in severe aortic stenosis. J Cardiovasc Med (Hagerstown). 2020 Aug 26. https://doi.org/10.2459/JCM.0000000000001084. Online ahead of print. PMID: 32858630

- Wang Y, Zhang Y, Wei J, et al. Vitamin D for inflammation biomarkers in coronary artery disease: A protocol for systematic review and meta-analysis. Medicine (Baltimore). 2020 Jul 31;99(31):e21407. https://doi.org/10.1097/MD.0000000000021407. PMID: 32756139
- Ware WA, Freeman LM, Rush JE, et al. Vitamin D status in cats with cardiomyopathy. J Vet Intern Med. 2020 Jul;34(4):1389-1398. https://doi.org/10.1111/jvim.15833. Epub 2020 Jun 17. PMID: 32557856
- Wolf ST, Jablonski NG, Ferguson SB, et al. Four weeks of vitamin D supplementation improves nitric oxide-mediated microvascular function in college-aged African Americans. Am J Physiol Heart Circ Physiol. 2020 Aug 28. https://doi.org/10.1152/ajpheart.00631.2020. Online ahead of print. PMID: 32857616
- Wu Y, Wang Y, Liu X, et al. Ziziphora clinopodioides flavonoids based on network pharmacology attenuates atherosclerosis in rats induced by high-fat emulsion combined with vitamin D(3) by down-regulating VEGF/AKT/NF-κB signaling pathway. Biomed Pharmacother. 2020 Sep;129:110399. https://doi.org/10.1016/j.biopha.2020.110399. Epub 2020 Jul 3. PMID: 32768933
- Zarei M, Najafi M, Movahedi E, et al. The predictive role of circulating telomerase and vitamin D for long-term survival in patients undergoing coronary artery bypass grafting surgery (CABG). PLoS One. 2020 Aug 13;15(8):e0237477. https://doi.org/10.1371/journal.pone.0237477. eCollection 2020. PMID: 32790742
- Zhao A, Zhao K, Xia Y, et al. Periconceptional use of cod liver oil, a vitamin D source, could decrease the risk of CHD in offspring. Cardiol Young. 2020 Aug 28:1-7. https://doi.org/10.1017/S1047951120002280. Online ahead of print. PMID: 32856579
- Çakır OM. Low vitamin D levels predict left atrial thrombus in nonvalvular atrial fibrillation. Nutr Metab Cardiovasc Dis. 2020 Jun 25;30(7):1152-1160. https://doi.org/10.1016/j.numecd.2020.03.023. Epub 2020 Apr 9. PMID: 32456946

CORONA VIRUS DISEASE

- Alexander J, Tinkov A, Strand TA, et al. Early Nutritional Interventions with Zinc, Selenium and Vitamin D for Raising Anti-Viral Resistance Against Progressive COVID-19. Nutrients. 2020 Aug 7;12(8):E2358. https://doi.org/10.3390/nu12082358. PMID: 32784601 Free article. Review.
- Ali N. Role of vitamin D in preventing of COVID-19 infection, progression and severity. J Infect Public Health. 2020 Jun 20:S1876-0341(20)30531-1. https://doi.org/10.1016/j.jiph.2020.06.021. Online ahead of print. PMID: 32605780
- Alpalhão M, Filipe P. SARS-CoV-2 pandemic and Vitamin D deficiency-A double trouble. Photodermatol Photoimmunol Photomed. 2020 Jun 1:10.1111/phpp.12579. https://doi.org/10.1111/phpp.12579. Online ahead of print. PMID: 32476189
- Alshahawey M. COVID-19 and Vitamin D deficiency; the two pandemics. Are they correlated? Int J Vitam Nutr Res. 2020 Jul 17:1-2. https://doi.org/10.1024/0300-9831/a000671. Online ahead of print. PMID: 32674673
- Arboleda JF, Urcuqui-Inchima S. Vitamin D Supplementation: A Potential Approach for Coronavirus/COVID-19 Therapeutics? Front Immunol. 2020 Jun 23;11:1523. https://doi.org/10.3389/fimmu.2020.01523. eCollection 2020. PMID: 32655583
- Arya A, Dwivedi VD. Synergistic effect of vitamin D and remdesivir can fight COVID-19. J Biomol Struct Dyn. 2020 Jun 9:1-2. https://doi.org/10.1080/07391102.2020.1773929. Online ahead of print. PMID: 32456606
- Aygun H. Vitamin D can prevent COVID-19 infection-induced multiple organ damage. Arch Pharmacol. 2020 Jul;393(7):1157-1160. https://doi.org/10.1007/s00210-020-01911-4. Epub 2020 May 25. PMID: 32451597
- Baktash V, Hosack T, Patel N, et al. Vitamin D status and outcomes for hospitalised older patients with COVID-19. Postgrad Med J. 2020 Aug 27:postgradmedj-2020-138712. https://doi.org/10.1136/postgradmedj-2020-138712. Online ahead of print. PMID: 32855214
- Bauer SR, Kapoor A, Rath M, et al. What is the role of supplementation with ascorbic acid, zinc, vitamin D, or N-acetylcysteine for prevention or treatment of COVID-19? Cleve Clin J Med. 2020 Jun 8. https://doi.org/10.3949/ccjm.87a.ccc046. Online ahead of print. PMID: 32513807
- Bergman P. The link between vitamin D and COVID-19: distinguishing facts from fiction. J Intern Med. 2020 Jul 11:10.1111/joim.13158. https://doi.org/10.1111/joim.13158. Online ahead of print. PMID: 32652766
- Bertoldi G, Gianesello L, Calò LA. Letter: ACE2, Rho kinase inhibition and the potential role of vitamin D against COVID-19. Aliment Pharmacol Ther. 2020 Aug;52(3):577-578. https://doi.org/10.1111/apt.15895. PMID: 32656827
- Bilezikian JP, Bikle D, Hewison M, et al. MECHANISMS IN ENDOCRINOLOGY: Vitamin D and COVID-19. Eur J Endocrinol. 2020 Aug 1:EJE-20-0665.R1. https://doi.org/10.1530/EJE-20-0665. Online ahead of print. PMID: 32755992 Review.
- Boucher BJ. Vitamin D status as a predictor of Covid-19 risk in Black, Asian and other ethnic minority groups in the UK. Diabetes Metab Res Rev. 2020 Jun 26:e3375. https://doi.org/10.1002/dmrr.3375. Online ahead of print. PMID: 32588937
- Brenner H, Holleczek B, Schöttker B. Vitamin D Insufficiency and Deficiency and Mortality from Respiratory Diseases in a Cohort of Older Adults: Potential for Limiting the Death Toll during and beyond the COVID-19 Pandemic? Nutrients. 2020 Aug 18;12(8):E2488. https://doi.org/10.3390/nu12082488. PMID: 32824839
- Carpagnano GE, Di Lecce V, Quaranta VN, et al. Vitamin D deficiency as a predictor of poor prognosis in patients with acute respiratory failure due to COVID-19. J Endocrinol Invest. 2020 Aug 9:1-7. https://doi.org/10.1007/s40618-020-01370-x. Online ahead of print. PMID: 32772324
- Carter SJ, Baranauskas MN, Fly AD. Considerations for Obesity, Vitamin D, and Physical Activity Amid the COVID-19 Pandemic. Obesity (Silver Spring). 2020 Jul;28(7):1176-1177. https://doi.org/10.1002/oby.22838. Epub 2020 May 21. PMID: 32299148
- Chakhtoura M, Napoli N, El Hajj Fulei-

han G. Commentary: Myths and facts on vitamin D amidst the COVID-19 pandemic. Metabolism. 2020 Aug;109:154276. https://doi.org/10.1016/j.metabol.2020.154276. Epub 2020 May 26. PMID: 32470350

- Chandran M, Chan Maung A, Mithal A, et al. Vitamin D in COVID - 19: Dousing the fire or averting the storm? - A perspective from the Asia-Pacific. Osteoporos Sarcopenia. 2020 Jul 23. https://doi.org/10.1016/j.afos.2020.07.003. Online ahead of print. PMID: 32838048
- Ebadi M, Montano-Loza AJ. Perspective: improving vitamin D status in the management of COVID-19. Eur J Clin Nutr. 2020 Jun;74(6):856-859. https://doi.org/10.1038/s41430-020-0661-0. Epub 2020 May 12. PMID: 32398871
- Ekiz T, Kara M, Özçakar L. Revisiting vitamin D and home-based exercises for patients with sleep apnea facing the COVID-19 quarantine. J Clin Sleep Med. 2020 Aug 15;16(8):1409-1410. https://doi.org/10.5664/jcsm.8586. PMID: 32432542
- Facchiano A, Facchiano A, Bartoli M, et al. Reply to Jakovac: About COVID-19 and vitamin D. Am J Physiol Endocrinol Metab. 2020 Jun 1;318(6):E838. https://doi.org/10.1152/ajpendo.00185.2020. PMID: 32432923
- Faqihi F, Alharthy A, Pirompanich P, et al. Co-infection of SARS-CoV-2 and Bordetella bronchiseptica in a young man with idiopathic non-cystic bronchiectasis and vitamin D(3) deficiency. Respir Med Case Rep. 2020 Aug 28:101203. https://doi.org/10.1016/j.rmcr.2020.101203. Online ahead of print. PMID: 32874904
- Garg M, Al-Ani A, Mitchell H, et al. Editorial: low population mortality from COVID-19 in countries south of latitude 35 degrees North-supports vitamin D as a factor determining severity. Authors' reply. Aliment Pharmacol Ther. 2020 Jun;51(12):1438-1439. https://doi.org/10.1111/apt.15796. Epub 2020 May 12. PMID: 32352178
- Gauzzi MC, Fantuzzi L. Reply to Jakovac: COVID-19, vitamin D, and type I interferon. Am J Physiol Endocrinol Metab. 2020 Aug 1;319(2):E245-E246. https://doi.org/10.1152/ajpendo.00315.2020. PMID: 32672049 Free PMC article.
- Grant WB, Baggerly CA, Lahore H. Reply: "Vitamin D Supplementation in Influenza and COVID-19 Infections. Comment on: Evidence That Vitamin D Supplementation Could Reduce Risk of Influenza and COVID-19 Infections and Deaths Nutrients 2020, 12(4), 988". Nutrients. 2020 Jun 1;12(6):1620. https://doi.org/10.3390/nu12061620. PMID: 32492787
- Grant WB, McDonnell SL. Letter in response to the article: Vitamin D concentrations and COVID-19 infection in UK biobank (Hastie et al.). Diabetes Metab Syndr. 2020 Jun 13;14(5):893-894. https://doi.org/10.1016/j.dsx.2020.05.046. Online ahead of print. PMID: 32563941
- Hadizadeh F. Supplementation with vitamin D in the COVID-19 pandemic? Nutr Rev. 2020 Jul 17:nuaa081. https://doi.org/10.1093/nutrit/nuaa081. Online ahead of print. PMID: 32679589
- Hastie CE, Mackay DF, Ho F, et al. Corrigendum to "Vitamin D concentrations and COVID-19 infection in UK Biobank" [Diabetes Metabol Syndr: Clin Res Rev 2020 14 (4) 561-5]. Diabetes Metab Syndr. 2020 Jul 23;14(5):1315-1316. https://doi.org/10.1016/j.dsx.2020.07.021. Online ahead of print. PMID: 32755828 Free PMC article.
- Hastie CE, Mackay DF, Ho F, et al. Vitamin D concentrations and COVID-19 infection in UK Biobank. Diabetes Metab Syndr. 2020 Jul-Aug;14(4):561-565. https://doi.org/10.1016/j.dsx.2020.04.050. Epub 2020 May 7. PMID: 32413819
- Hastie CE, Pell JP, Sattar N. Vitamin D and COVID-19 infection and mortality in UK Biobank. Eur J Nutr. 2020 Aug 26:1-4. https://doi.org/10.1007/s00394-020-02372-4. Online ahead of print. PMID: 32851419
- Hedlund R, Diamond TK, Uversky VN. The latitude hypothesis, vitamin D, and SARS-Co-V2. J Biomol Struct Dyn. 2020 Jul 17:1-3. https://doi.org/10.1080/07391102.2020.1794973. Online ahead of print. PMID: 32677591
- Henrina J, Lim MA, Pranata R. COVID-19 and misinformation: how an infodemic fuelled the prominence of vitamin D. Br J Nutr. 2020 Jul 27:1-2. https://doi.org/10.1017/S0007114520002950. Online ahead of print. PMID: 32713358 Free PMC article.
- Ilie PC, Stefanescu S, Smith L. The role of vitamin D in the prevention of coronavirus disease 2019 infection and mortality. Aging Clin Exp Res. 2020 Jul;32(7):1195-1198. https://doi.org/10.1007/s40520-020-01570-8. Epub 2020 May 6. PMID: 32377965
- Jain SK, Parsanathan R. Can Vitamin D and L-Cysteine Co-Supplementation Reduce 25(OH)-Vitamin D Deficiency and the Mortality Associated with COVID-19 in African Americans? J Am Coll Nutr. 2020 Jul 13:1-6. https://doi.org/10.1080/07315724.2020.1789518. Online ahead of print. PMID: 32659175
- Khemka A, Suri A, Singh NK, et al. Role of Vitamin D Supplementation in Prevention and Treatment of COVID-19. Indian J Clin Biochem. 2020 Jul 30:1-2. https://doi.org/10.1007/s12291-020-00908-3. Online ahead of print. PMID: 32837034
- Kow CS, Hadi MA, Hasan SS. Vitamin D Supplementation in Influenza and COVID-19 Infections Comment on: "Evidence that Vitamin D Supplementation Could Reduce Risk of Influenza and COVID-19 Infections and Deaths" Nutrients 2020, 12(4), 988. Nutrients. 2020 Jun 1;12(6):1626. https://doi.org/10.3390/nu12061626. PMID: 32492809
- Kumar D, Gupta P, Banerjee D. Letter: does vitamin D have a potential role against COVID-19? Aliment Pharmacol Ther. 2020 Jul;52(2):409-411. https://doi.org/10.1111/apt.15801. Epub 2020 May 20. PMID: 32432810
- Malek Mahdavi A. A brief review of interplay between vitamin D and angiotensin-converting enzyme 2: Implications for a potential treatment for COVID-19. Rev Med Virol. 2020 Jun 25:10.1002/rmv.2119. https://doi.org/10.1002/rmv.2119. Online ahead of print. PMID: 32584474
- Manson JE, Bassuk SS. Commentary. Eliminating Vitamin D Deficiency During the COVID-19 Pandemic: A Call to Action. Metabolism. 2020 Jul 23:154322. https://doi.org/10.1016/j.metabol.2020.154322. Online ahead of print. PMID: 32712223 Free PMC article.

- Mansur JL. Letter: low population mortality from COVID-19 in countries south of latitude 35 degrees North supports vitamin D as a factor determining severity. Aliment Pharmacol Ther. 2020 Jul;52(2):411-412. https://doi.org/10.1111/apt.15820. Epub 2020 Jun 3. PMID: 32402107
- Mardani R, Alamdary A, Mousavi Nasab SD, et al. Association of vitamin D with the modulation of the disease severity in COVID-19. Virus Res. 2020 Aug 28:198148. https://doi.org/10.1016/j.virusres.2020.198148. Online ahead of print. PMID: 32866536
- Marik PE, Kory P, Varon J. Does vitamin D status impact mortality from SARS-CoV-2 infection? Med Drug Discov. 2020 Jun;6:100041. https://doi.org/10.1016/j.medidd.2020.100041. Epub 2020 Apr 29. PMID: 32352080
- Martineau AR, Forouhi NG. Vitamin D for COVID-19: a case to answer? Lancet Diabetes Endocrinol. 2020 Sep;8(9):735-736. https://doi.org/10.1016/S2213-8587(20)30268-0. Epub 2020 Aug 3. PMID: 32758429 Free PMC article. Review.
- Martín Giménez VM, Inserra F, Ferder L, et al. Vitamin D deficiency in African Americans is associated with a high risk of severe disease and mortality by SARS-CoV-2. J Hum Hypertens. 2020 Aug 13:1-3. https://doi.org/10.1038/s41371-020-00398-z. Online ahead of print. PMID: 32792611
- Martín Giménez VM, Inserra F, Tajer CD, et al. Lungs as target of COVID-19 infection: Protective common molecular mechanisms of vitamin D and melatonin as a new potential synergistic treatment. Life Sci. 2020 Aug 1;254:117808. https://doi.org/10.1016/j.lfs.2020.117808. Epub 2020 May 15. PMID: 32422305
- Maruotti A, Belloc F, Nicita A. Comments on: The role of vitamin D in the prevention of coronavirus disease 2019 infection and mortality. Aging Clin Exp Res. 2020 Aug;32(8):1621-1623. https://doi.org/10.1007/s40520-020-01618-9. Epub 2020 Jul 11. PMID: 32654004
- McGregor R, Chauss D, Freiwald T, et al. An autocrine Vitamin D-driven Th1 shutdown program can be exploited for COVID-19. bioRxiv. 2020 Jul 19:2020.07.18.210161. https://doi.org/10.1101/2020.07.18.210161. Preprint. PMID: 32743590
- Megna M, Fabbrocini G, Villani A. Phototherapy and vitamin D: the importance in COVID-19 era. J Dermatolog Treat. 2020 Jun 22:1. https://doi.org/10.1080/09546634.2020.1781044. Online ahead of print. PMID: 32567416
- Merzon E, Tworowski D, Gorohovski A, et al. Low plasma 25(OH) vitamin D level is associated with increased risk of COVID-19 infection: an Israeli population-based study. FEBS J. 2020 Jul 23:10.1111/febs.15495. https://doi.org/10.1111/febs.15495. Online ahead of print. PMID: 32700398
- Mitchell F. Vitamin-D and COVID-19: do deficient risk a poorer outcome? Lancet Diabetes Endocrinol. 2020 Jul;8(7):570. https://doi.org/10.1016/S2213-8587(20)30183-2. Epub 2020 May 20. PMID: 32445630
- Munshi R, Hussein MH, Toraih EA, et al. Vitamin D insufficiency as a potential culprit in critical COVID-19 patients. J Med Virol. 2020 Jul 27. https://doi.org/10.1002/jmv.26360. Online ahead of print. PMID: 32716073 Review.
- Ohaegbulam KC, Swalih M, Patel P, et al. Vitamin D Supplementation in COVID-19 Patients: A Clinical Case Series. Am J Ther. 2020 Aug 13. https://doi.org/10.1097/MJT.0000000000001222. Online ahead of print. PMID: 32804682
- Orrù B, Szekeres-Bartho J, Bizzarri M, et al. Inhibitory effects of Vitamin D on inflammation and IL-6 release. A further support for COVID-19 management? Eur Rev Med Pharmacol Sci. 2020 Aug;24(15):8187-8193. https://doi.org/10.26355/eurrev_202008_22507. PMID: 32767348
- Panfili FM, Roversi M, D'Argenio P, et al. Possible role of vitamin D in Covid-19 infection in pediatric population. J Endocrinol Invest. 2020 Jun 15:1-9. https://doi.org/10.1007/s40618-020-01327-0. Online ahead of print. PMID: 32557271
- Quesada-Gomez JM, Entrenas-Castillo M, Bouillon R. Vitamin D receptor stimulation to reduce acute respiratory distress syndrome (ARDS) in patients with coronavirus SARS-CoV-2 infections: Revised Ms SBMB 2020_166. J Steroid Biochem Mol Biol. 2020 Jun 11;202:105719. https://doi.org/10.1016/j.jsbmb.2020.105719. Online ahead of print. PMID: 32535032
- Rafiullah M. Can a Combination of AT1R Antagonist and Vitamin D Treat the Lung Complication of COVID-19? Am J Med Sci. 2020 Jul 15:S0002-9629(20)30312-8. https://doi.org/10.1016/j.amjms.2020.07.018. Online ahead of print. PMID: 32736832
- Raisi-Estabragh Z, McCracken C, Bethell MS, et al. Greater risk of severe COVID-19 in Black, Asian and Minority Ethnic populations is not explained by cardiometabolic, socioeconomic or behavioural factors, or by 25(OH)-vitamin D status: study of 1326 cases from the UK Biobank. J Public Health (Oxf). 2020 Aug 18;42(3):451-460. https://doi.org/10.1093/pubmed/fdaa095. PMID: 32556213
- Razdan K, Singh K, Singh D. Vitamin D Levels and COVID-19 Susceptibility: Is there any Correlation? Med Drug Discov. 2020 Sep;7:100051. https://doi.org/10.1016/j.medidd.2020.100051. Epub 2020 Jun 2. PMID: 32835212
- Rhodes JM, Subramanian S, Laird E, et al. Editorial: low population mortality from COVID-19 in countries south of latitude 35 degrees North supports vitamin D as a factor determining severity. Aliment Pharmacol Ther. 2020 Jun;51(12):1434-1437. https://doi.org/10.1111/apt.15777. Epub 2020 Apr 28. PMID: 32311755
- Rhodes JM, Subramanian S, Laird E, et al. Letter: low population mortality from COVID-19 in countries south of latitude 35° North supports vitamin D as a factor determining severity. Authors' reply. Aliment Pharmacol Ther. 2020 Jul;52(2):412-413. https://doi.org/10.1111/apt.15823. Epub 2020 Jun 2. PMID: 32402109
- Rhodes JM, Subramanian S, Laird E, et al. Perspective: Vitamin D deficiency and COVID-19 severity - plausibly linked by latitude, ethnicity, impacts on cytokines, ACE2 and thrombosis. J Intern Med. 2020 Jul 2:10.1111/joim.13149. https://doi.org/10.1111/joim.13149. Online ahead of print. PMID: 32613681
- Rocha JC, Calhau C, MacDonald A. Reply to Jakovac; Severity of COVID-19 infection in patients with phenylketonuria: is vitamin

D status protective? Am J Physiol Endocrinol Metab. 2020 Jun 1;318(6):E890-E891. https://doi.org/10.1152/ajpendo.00195.2020. PMID: 32479158

- Roy AS, Matson M, Herlekar R. Response to 'Vitamin D concentrations and COVID-19 infection in UK Biobank'. Diabetes Metab Syndr. 2020 Jun 4;14(5):777. https://doi.org/10.1016/j.dsx.2020.05.049. Online ahead of print. PMID: 32526626
- Santos RND, Maeda SS, Jardim JR, et al. Reasons to avoid vitamin D deficiency during COVID-19 pandemic. Arch Endocrinol Metab. 2020 Aug 28:S2359-39972020005006214. https://doi.org/10.20945/2359-3997000000291. Online ahead of print. PMID: 32876154
- Shiravi AA, Saadatkish M, Abdollahi Z, et al. Vitamin D can be effective on the prevention of COVID-19 complications: A narrative review on molecular aspects. Int J Vitam Nutr Res. 2020 Aug 19:1-13. https://doi.org/10.1024/0300-9831/a000676. Online ahead of print. PMID: 32811354
- Silberstein M. Vitamin D: A simpler alternative to tocilizumab for trial in COVID-19? Med Hypotheses. 2020 Jul;140:109767. https://doi.org/10.1016/j.mehy.2020.109767. Epub 2020 Apr 23. PMID: 32353742
- Simonson W. Vitamin D and Coronavirus. Geriatr Nurs. 2020 Jul-Aug;41(4):496-497. https://doi.org/10.1016/j.gerinurse.2020.06.011. Epub 2020 Jun 18. PMID: 32591269
- Singh S, Kaur R, Singh RK. Revisiting the role of vitamin D levels in the prevention of COVID-19 infection and mortality in European countries post infections peak. Aging Clin Exp Res. 2020 Aug;32(8):1609-1612. https://doi.org/10.1007/s40520-020-01619-8. Epub 2020 Aug 14. PMID: 32797388
- Singh SK, Jain R, Singh S. Vitamin D deficiency in patients with diabetes and COVID- 19 infection. Diabetes Metab Syndr. 2020 Jul 3;14(5):1033-1035. https://doi.org/10.1016/j.dsx.2020.06.071. Online ahead of print. PMID: 32640414
- Siuka D, Pfeifer M, Pinter B. Vitamin D Supplementation During the COVID-19 Pandemic. Mayo Clin Proc. 2020 Aug;95(8):1804-1805. https://doi.org/10.1016/j.mayocp.2020.05.036. Epub 2020 Jun 6. PMID: 32753156 Free PMC article.
- Slominski AT, Slominski RM, Goepfert PA, et al. Reply to Jakovac and to Rocha et al.: Can vitamin D prevent or manage COVID-19 illness? Am J Physiol Endocrinol Metab. 2020 Aug 1;319(2):E455-E457. https://doi.org/10.1152/ajpendo.00348.2020. PMID: 32787704 Free PMC article.
- Slominski RM, Stefan J, Athar M, et al. COVID-19 and Vitamin D: A lesson from the skin. Exp Dermatol. 2020 Aug 11:10.1111/exd.14170. https://doi.org/10.1111/exd.14170. Online ahead of print. PMID: 32779213
- Speeckaert MM, Delanghe JR. Association between low vitamin D and COVID-19: don't forget the vitamin D binding protein. Aging Clin Exp Res. 2020 Jul;32(7):1207-1208. https://doi.org/10.1007/s40520-020-01607-y. Epub 2020 May 28. PMID: 32468505
- Stohs SJ, Aruoma OI. Vitamin D and Well-being beyond Infections: COVID-19 and Future Pandemics. J Am Coll Nutr. 2020 Aug 14:1-2. https://doi.org/10.1080/07315724.2020.1786302. Online ahead of print. PMID: 32795138
- Teymoori-Rad M, Marashi SM. Vitamin D and Covid-19: From potential therapeutic effects to unanswered questions. Rev Med Virol. 2020 Aug 28:e2159. https://doi.org/10.1002/rmv.2159. Online ahead of print. PMID: 32856339 Review.
- Tian Y, Rong L. Letter: does vitamin D have a potential role against COVID-19? Authors' reply. Aliment Pharmacol Ther. 2020 Jul;52(2):410-411. https://doi.org/10.1111/apt.15817. Epub 2020 Jun 17. PMID: 32402098
- Tramontana F, Napoli N, El-Hajj Fuleihan G, et al. The D-side of COVID-19: musculoskeletal benefits of vitamin D and beyond. Endocrine. 2020 Aug;69(2):237-240. https://doi.org/10.1007/s12020-020-02407-0. Epub 2020 Jul 6. PMID: 32632722
- Trovas G, Tournis S. Vitamin D and COVID-19. Hormones (Athens). 2020 Jul 14:1-2. https://doi.org/10.1007/s42000-020-00231-9. Online ahead of print. PMID: 32666357
- van der Meulen J. COVID-19 and vitamin D deficiency, a fatal combination? Neth J Med. 2020 Jul;78(4):218. PMID: 32641560 Free article.
- Verdoia M, De Luca G. Potential role of hypovitaminosis D and Vitamin D supplementation during COVID-19 pandemic. QJM. 2020 Jul 31:hcaa234. https://doi.org/10.1093/qjmed/hcaa234. Online ahead of print. PMID: 32735326
- Weir EK, Thenappan T, Bhargava M, et al. Does vitamin D deficiency increase the severity of COVID-19? Clin Med (Lond). 2020 Jul;20(4):e107-e108. https://doi.org/10.7861/clinmed.2020-0301. Epub 2020 Jun 5. PMID: 32503801
- Whittemore PB. COVID-19 fatalities, latitude, sunlight, and vitamin D. Am J Infect Control. 2020 Sep;48(9):1042-1044. https://doi.org/10.1016/j.ajic.2020.06.193. Epub 2020 Jun 26. PMID: 32599103
- Xu Y, Baylink DJ, Chen CS, et al. The importance of vitamin d metabolism as a potential prophylactic, immunoregulatory and neuroprotective treatment for COVID-19. J Transl Med. 2020 Aug 26;18(1):322. https://doi.org/10.1186/s12967-020-02488-5. PMID: 32847594
- Zwart SR, Smith SM. Vitamin D and COVID-19: Lessons from Spaceflight Analogs. J Nutr. 2020 Jul 25:nxaa233. https://doi.org/10.1093/jn/nxaa233. Online ahead of print. PMID: 32710111 Free PMC article.

DERMATOLOGIA

- Akoh CC, Orlow SJ. A Review of Vitamin D and Scarring: The Potential for New Therapeutics. J Drugs Dermatol. 2020 Jul 1;19(7):742-745. https://doi.org/10.36849/JDD.2020.4986. PMID: 32721140
- Brandao L, Moura R, Tricarico PM, et al. Altered keratinization and vitamin D metabolism may be key pathogenetic pathways in syndromic hidradenitis suppurativa: a novel whole exome sequencing approach. J Dermatol Sci. 2020 Jul;99(1):17-22. https://doi.org/10.1016/j.jderms-

ci.2020.05.004. Epub 2020 May 22. PMID: 32518053

- Chaiprasongsuk A, Janjetovic Z, Kim TK, et al. CYP11A1-derived vitamin D(3) products protect against UVB-induced inflammation and promote keratinocytes differentiation. Free Radic Biol Med. 2020 Aug 1;155:87-98. https://doi.org/10.1016/j.freeradbiomed.2020.05.016. Epub 2020 May 22. PMID: 32447000
- Chandra R, Roesyanto-Mahadi ID, Yosi A. Pilot study: immunohistochemistry expressions of vitamin D receptor associated with severity of disease in psoriasis patients. Int J Dermatol. 2020 Sep;59(9):1092-1097. https://doi.org/10.1111/ijd.15018. Epub 2020 Jun 27. PMID: 32592616
- Cho YS, Seo CH, Joo SY, et al. The association between vitamin D levels and burn factors in different burn types. Burns Trauma. 2020 Jun 19;8:tkaa018. https://doi.org/10.1093/burnst/tkaa018. eCollection 2020. PMID: 32607374
- Colucci R, Conti R, Dragoni F, et al. Evidence of a possible therapeutic role of vitamin D in a cohort of adult Caucasian vitiligo patients. Int J Vitam Nutr Res. 2020 Jun;90(3-4):200-204. https://doi.org/10.1024/0300-9831/a000605. Epub 2019 Aug 15. PMID: 31414974
- Hanel A, Carlberg C. Skin colour and vitamin D: An update. Exp Dermatol. 2020 Jul 3. https://doi.org/10.1111/exd.14142. Online ahead of print. PMID: 32621306
- Hawk JLM. Safe, mild ultraviolet-B exposure: An essential human requirement for vitamin D and other vital bodily parameter adequacy: A review. Photodermatol Photoimmunol Photomed. 2020 Jul 5. https://doi.org/10.1111/phpp.12584. Online ahead of print. PMID: 32623756 Review.
- Jaworek AK, Obtułowicz A, Hałubiec P, et al. Is vitamin D concentration an indicator of the severity of atopic dermatitis and chronic spontaneous urticaria in adults? Pol Merkur Lekarski. 2020 Jun 17;48(285):166-169. PMID: 32564040
- Kuang Y, Xiao Y, Fang Z, et al. Association of Serum Vitamin D With Psoriasis and Effect Modification by Central Obesity. Front Med (Lausanne). 2020 Jun 18;7:236. https://doi.org/10.3389/fmed.2020.00236. eCollection 2020. PMID: 32626717
- Liu Y, Li J, Liang G, et al. Association of Alopecia Areata with Vitamin D and Calcium Levels: A Systematic Review and Meta-analysis. Dermatol Ther (Heidelb). 2020 Aug 9. https://doi.org/10.1007/s13555-020-00433-4. Online ahead of print. PMID: 32772238 Review.
- Lucas R, Mihály J, Gericke J, et al. Topical Vitamin D Receptor Antagonist/Partial-Agonist Treatment Induces Epidermal Hyperproliferation via RARγ Signaling Pathways. Dermatology. 2020 Aug 31:1-7. https://doi.org/10.1159/000508334. Online ahead of print. PMID: 32866959
- Megna M, Ferrillo M, Barrea L, et al. Vitamin D and psoriasis: an update for dermatologists and nutritionists. Minerva Endocrinol. 2020 Jun;45(2):138-147. https://doi.org/10.23736/S0391-1977.20.03190-9. Epub 2020 Apr 27. PMID: 32340428
- Nabavizadeh SH, Alyasin S, Esmaeilzadeh H, et al. The effect of vitamin D add-on therapy on the improvement of quality of life and clinical symptoms of patients with chronic spontaneous urticaria. Asian Pac J Allergy Immunol. 2020 Aug 23. https://doi.org/10.12932/AP-021219-0705. Online ahead of print. PMID: 32828116
- Oda Y, Bikle DD. Vitamin D and calcium signaling in epidermal stem cells and their regeneration. World J Stem Cells. 2020 Jul 26;12(7):604-611. https://doi.org/10.4252/wjsc.v12.i7.604. PMID: 32843916
- Piotrowska A, Wierzbicka J, Kwiatkowska K, et al. Antiproliferative activity of side-chain truncated vitamin D analogs (PRI-1203 and PRI-1204) against human malignant melanoma cell lines. Eur J Pharmacol. 2020 Aug 15;881:173170. https://doi.org/10.1016/j.ejphar.2020.173170. Epub 2020 May 20. PMID: 32445704
- Sanke S, Samudrala S, Yadav A, et al. Study of serum vitamin D levels in men with premature androgenetic alopecia. Int J Dermatol. 2020 Sep;59(9):1113-1116. https://doi.org/10.1111/ijd.14982. Epub 2020 Jun 9. PMID: 32516435
- Saudi WM, Swelam MM, El-Barbary RAH, et al. Vitamin D receptor (VDR) gene polymorphism in Egyptian vitiligo patients. J Cosmet Dermatol. 2020 Jul 10. https://doi.org/10.1111/jocd.13606. Online ahead of print. PMID: 32648639
- Seleit I, Bakry OA, Badr E, et al. Vitamin D Receptor Gene Polymorphisms Taq-1 and Cdx-1 in Female Pattern Hair Loss. Indian J Dermatol. 2020 Jul-Aug;65(4):259-264. https://doi.org/10.4103/ijd.IJD_482_18. PMID: 32831364
- Shaldoum DR, Hassan GFR, El Maadawy EH, et al. Comparative clinical study of the efficacy of intralesional MMR vaccine vs intralesional vitamin D injection in treatment of warts. J Cosmet Dermatol. 2020 Aug;19(8):2033-2040. https://doi.org/10.1111/jocd.13272. Epub 2020 Jan 11. PMID: 31925891
- Slominski AT, Chaiprasongsuk A, Janjetovic Z, et al. Photoprotective Properties of Vitamin D and Lumisterol Hydroxyderivatives. Cell Biochem Biophys. 2020 Jun;78(2):165-180. https://doi.org/10.1007/s12013-020-00913-6. Epub 2020 May 22. PMID: 32441029 Review.
- Smith K, Hewlings S. Correlation between vitamin D levels and hard-to-heal wounds: a systematic review. J Wound Care. 2020 Jul 1;29(Sup7):S24-S30. https://doi.org/10.12968/jowc.2020.29.Sup7.S24. PMID: 32654618
- Tamer F, Yuksel ME, Karabag Y. Serum ferritin and vitamin D levels should be evaluated in patients with diffuse hair loss prior to treatment. Postepy Dermatol Alergol. 2020 Jun;37(3):407-411. https://doi.org/10.5114/ada.2020.96251. Epub 2020 Jul 16. PMID: 32792884
- Taneja G, Dhanta A, Hazarika N. Response of short-term high-dose vitamin D therapy in lamellar ichthyosis: A rare case report. Dermatol Ther. 2020 Jun 29:e13927. https://doi.org/10.1111/dth.13927. Online ahead of print. PMID: 32602140
- Tsai TY, Kuo CY, Huang YC. The association between serum vitamin D level and risk and prognosis of melanoma: a systematic review and meta-analysis. J Eur Acad Dermatol Venereol. 2020 Aug;34(8):1722-1729. https://doi.org/10.1111/jdv.16189. Epub 2020 Feb 5. PMID: 31919907
- Yang M, Wu H, Zhao M, et al. Vitamin D status in patients with autoimmune bullous dermatoses: a meta-analysis. J Dermatolog

Treat. 2020 Aug 26:1-12. https://doi.org/10.1080/09546634.2020.1810606. Online ahead of print. PMID: 32799714

- Young AR, Morgan KA, Ho TW, et al. Melanin has a Small Inhibitory Effect on Cutaneous Vitamin D Synthesis: A Comparison of Extreme Phenotypes. J Invest Dermatol. 2020 Jul;140(7):1418-1426.e1. https://doi.org/10.1016/j.jid.2019.11.019. Epub 2019 Dec 26. PMID: 31883961
- Zhang Y, Cai JZ, Xiao L, et al. RNA-binding protein HuR regulates translation of vitamin D receptor modulating rapid epithelial restitution after wounding. Am J Physiol Cell Physiol. 2020 Jul 1;319(1):C208-C217. https://doi.org/10.1152/ajpcell.00009.2020. Epub 2020 May 20. PMID: 32432928
- Zmijewski MA, Carlberg C. Vitamin D receptor(s): In the nucleus but also at membranes? Exp Dermatol. 2020 Jul 11. https://doi.org/10.1111/exd.14147. Online ahead of print. PMID: 32654294

EPIDEMIOLOGIA

- Abboud M, Rizk R, Papandreou D, et al. Evaluation of Self-Assessed State of Health and Vitamin D Knowledge in Emirati and International Female Students in United Arab Emirates (UAE). Front Psychol. 2020 Jun 12;11:1236. https://doi.org/10.3389/fpsyg.2020.01236. eCollection 2020. PMID: 32595567
- Andersen S, Noahsen P, Fleischer I, et al. [Vitamin D and Vitamin D-related diseases in Greenland]. Ugeskr Laeger. 2020 Jun 8;182(24):V12190684. PMID: 32515335 Danish.
- Beer RJ, Herrán OF, Villamor E. Prevalence and correlates of vitamin D deficiency in a tropical setting: results from a nationally representative survey. Am J Clin Nutr. 2020 Jul 30:nqaa197. https://doi.org/10.1093/ajcn/nqaa197. Online ahead of print. PMID: 32729610
- Bischoff-Ferrari HA. [Vitamin D in geriatric patients]. Internist (Berl). 2020 Jun;61(6):535-540. https://doi.org/10.1007/s00108-020-00803-2. PMID: 32458373 Review. German.
- Burchiel SW, Lauer FT, Factor-Litvak P, et al. Arsenic exposure associated T cell proliferation, smoking, and vitamin D in Bangladeshi men and women. PLoS One. 2020 Jun 23;15(6):e0234965. https://doi.org/10.1371/journal.pone.0234965. eCollection 2020. PMID: 32574193
- Calame W, Street L, Hulshof T. Vitamin D Serum Levels in the UK Population, including a Mathematical Approach to Evaluate the Impact of Vitamin D Fortified Ready-to-Eat Breakfast Cereals: Application of the NDNS Database. Nutrients. 2020 Jun 23;12(6):1868. https://doi.org/10.3390/nu12061868. PMID: 32585847
- Ceccarelli M, Chiappini E, Arancio R, et al. Vitamin D deficiency in a population of migrant children: an Italian retrospective cross-sectional multicentric study. Eur J Public Health. 2020 Jun 1;30(3):551-556. https://doi.org/10.1093/eurpub/ckz182. PMID: 31598638
- Geddawy A, Al-Burayk AK, Almhaine AA, et al. Response regarding the importance of vitamin D and calcium among undergraduate health sciences students in Al Kharj, Saudi Arabia. Arch Osteoporos. 2020 Jul 23;15(1):114. https://doi.org/10.1007/s11657-020-00790-9. PMID: 32705622
- Hribar M, Hristov H, Gregorič M, et al. Nutrihealth Study: Seasonal Variation in Vitamin D Status Among the Slovenian Adult and Elderly Population. Nutrients. 2020 Jun 19;12(6):1838. https://doi.org/10.3390/nu12061838. PMID: 32575612
- Hurst EA, Homer NZ, Gow AG, et al. Vitamin D status is seasonally stable in northern European dogs. Vet Clin Pathol. 2020 Jun;49(2):279-291. https://doi.org/10.1111/vcp.12859. Epub 2020 May 20. PMID: 32432371
- Kupisz-Urbańska M, Broczek K, Galus K, et al. Age-related differences in vitamin D status in Polish centenarians compared with 65-year-olds. Pol Arch Intern Med. 2020 Jun 24. https://doi.org/10.20452/pamw.15460. Online ahead of print. PMID: 32579313
- Lansdown TC, Cowan S, Nioi A, et al. Vitamin D and UV exposure in construction workers-a randomized control trial using text messaging to promote positive behaviours. J Public Health (Oxf). 2020 Aug 18;42(3):594-601. https://doi.org/10.1093/pubmed/fdz056. PMID: 31120504
- Lima-Costa MF, Mambrini JVM, de Souza-Junior PRB, et al. Nationwide vitamin D status in older Brazilian adults and its determinants: The Brazilian Longitudinal Study of Aging (ELSI). Sci Rep. 2020 Aug 11;10(1):13521. https://doi.org/10.1038/s41598-020-70329-y. PMID: 32782304
- Magliulo L, Bondi D, Pietrangelo T, et al. Serum ferritin and vitamin D evaluation in response to high altitude comparing Italians trekkers vs Nepalese porters. Eur J Sport Sci. 2020 Aug 6:1-9. https://doi.org/10.1080/17461391.2020.1792559. Online ahead of print. PMID: 32627691
- Marcos-Pérez D, Sánchez-Flores M, Proietti S, et al. Low Vitamin D Levels and Frailty Status in Older Adults: A Systematic Review and Meta-Analysis. Nutrients. 2020 Jul 30;12(8):E2286. https://doi.org/10.3390/nu12082286. PMID: 32751730 Free article. Review.
- Martínez-Zavala N, López-Sánchez GN, Vergara-Lopez A, et al. Vitamin D deficiency in Mexicans have a high prevalence: a cross-sectional analysis of the patients from the Centro Médico Nacional 20 de Noviembre. Arch Osteoporos. 2020 Jun 16;15(1):88. https://doi.org/10.1007/s11657-020-00765-w. PMID: 32542548
- Pooyan S, Rahimi MH, Mollahosseini M, et al. The Association between Vitamin D Deficiency and variants of Vitamin D Binding protein gene among Healthy Iranian Adults. Int J Vitam Nutr Res. 2020 Jun;90(3-4):249-256. https://doi.org/10.1024/0300-9831/a000580. Epub 2019 Apr 16. PMID: 30987555
- Saleh A, Alhadhrami JS, Al Ramahi MS, et al. Emirati Adults Have a Higher Overall Knowledge on Vitamin D Compared to Tourists. Front Psychol. 2020 Jun 3;11:1022. https://doi.org/10.3389/fpsyg.2020.01022. eCollection 2020. PMID: 32581924
- Simon AE, Ahrens KA. Adherence to Vitamin D Intake Guidelines in the United States. Pediatrics. 2020 Jun;145(6):e20193574. https://doi.org/10.1542/peds.2019-3574. Epub 2020 May 18. PMID: 32424077

- Tabbakh T, Wakefield M, Dobbinson SJ. Concerns about vitamin D and sun exposure behaviour among Australians. Health Promot J Austr. 2020 Jun 18. https://doi.org/10.1002/hpja.372. Online ahead of print. PMID: 32557897

- Vallejo MS, Blümel JE, Arteaga E, et al. Gender differences in the prevalence of vitamin D deficiency in a southern Latin American country: a pilot study. Climacteric. 2020 Aug;23(4):410-416. https://doi.org/10.1080/13697137.2020.1752171. Epub 2020 May 5. PMID: 32367772

- Vázquez-Lorente H, Herrera-Quintana L, Molina-López J, et al. Response of Vitamin D after Magnesium Intervention in a Postmenopausal Population from the Province of Granada, Spain. Nutrients. 2020 Jul 30;12(8):E2283. https://doi.org/10.3390/nu12082283. PMID: 32751522

EMATOLOGIA

- Chiengthong K, Cheungpasitporn W, Thongprayoon C, et al. Vitamin D deficiency is not associated with graft versus host disease after hematopoietic stem cell transplantation: A meta-analysis. J Evid Based Med. 2020 Aug;13(3):183-191. https://doi.org/10.1111/jebm.12383. Epub 2020 May 5. PMID: 32369679

- Dougherty KA, Schall JI, Bertolaso C, et al. Vitamin D Supplementation Improves Health-Related Quality of Life and Physical Performance in Children with Sickle Cell Disease and in Healthy Children. J Pediatr Health Care. 2020 Sep-Oct;34(5):424-434. https://doi.org/10.1016/j.pedhc.2020.04.007. Epub 2020 Jun 5. PMID: 32507538

- Eicher F, Mansouri Taleghani B, et al. Reduced survival after autologous stem cell transplantation in myeloma and lymphoma patients with low vitamin D serum levels. Hematol Oncol. 2020 Jun 28. https://doi.org/10.1002/hon.2774. Online ahead of print. PMID: 32594534

- Graklanov V, Popov V. Vitamin D levels in patients with non-Hodgkin lymphoma/diffuse large B-cell lymphoma, chronic lymphocytic leukemia and multiple myeloma. J Int Med Res. 2020 Jul;48(7):300060520943421.https://doi.org/10.1177/0300060520943421. PMID: 32722995 Free PMC article.

- Gupta GK, Agrawal T, Pilichowska M. Immunohistochemical expression of vitamin D receptor and forkhead box P3 in classic Hodgkin lymphoma: correlation with clinical and pathologic findings. BMC Cancer. 2020 Jun 8;20(1):535. https://doi.org/10.1186/s12885-020-07026-6. PMID: 32513132

- Nur-Eke R, Özen M. The Relationship between Vitamin D Levels and Iron Deficiency and Anemia in Adults Applied for Periodic Medical Examination. Clin Lab. 2020 Jun 1;66(6). https://doi.org/10.7754/Clin.Lab.2019.190918. PMID: 32538041

- Soto JR, Anthias C, Madrigal A, et al. Insights Into the Role of Vitamin D as a Biomarker in Stem Cell Transplantation. Front Immunol. 2020 Jun 8;11:966. https://doi.org/10.3389/fimmu.2020.00966. eCollection 2020. PMID: 32582151

- Wang WT, Liang JH, Wang L, et al. The prognostic value of 25-hydroxy vitamin D deficiency and its interaction with c-Myc expression in diffuse large B cell lymphoma. Ann Hematol. 2020 Jul 30. https://doi.org/10.1007/s00277-020-04200-5. Online ahead of print. PMID: 32728938

ENDOCRINOLOGIA

- Abdellateif MS, Shaarawy S, Elesawy YF, et al. The Role of Vitamin D, Platelet-Derived Growth Factor and Insulin-Like Growth Factor 1 in the Progression of Thyroid Diseases. Asian Pac J Cancer Prev. 2020 Jul 1;21(7):2083-2089. https://doi.org/10.31557/APJCP.2020.21.7.2083. PMID: 32711436

- Alam U, Petropoulos IN, Ponirakis G, et al. Vitamin D deficiency is associated with painful diabetic neuropathy. Diabetes Metab Res Rev. 2020 Jun 7:e3361. https://doi.org/10.1002/dmrr.3361. Online ahead of print. PMID: 32506740

- Aleksova A, Ferro F, Gagno G, et al. Diabetes Mellitus and Vitamin D Deficiency:Comparable Effect on Survival and a DeadlyAssociation after a Myocardial Infarction. J Clin Med. 2020 Jul 6;9(7):2127. https://doi.org/10.3390/jcm9072127. PMID: 32640692

- Almeida JT, Rodrigues D, Guimarães J, et al. Vitamin D Pathway Genetic Variation and Type 1 Diabetes: A Case-Control Association Study. Genes (Basel). 2020 Aug 5;11(8):E897. https://doi.org/10.3390/genes11080897. PMID: 32764491

- Aquino SLS, Cunha ATO, Lima JG, et al. Effects of vitamin D supplementation on fasting glucose, dyslipidemia, blood pressure, and abdominal obesity among patients with metabolic syndrome: a protocol for systematic review and meta-analysis of randomized controlled trials. Syst Rev. 2020 Aug 11;9(1):176. https://doi.org/10.1186/s13643-020-01433-3. PMID: 32782015

- Araujo DB, Dantas JR, Silva KR, et al. Allogenic Adipose Tissue-Derived Stromal/Stem Cells and Vitamin D Supplementation in Patients With Recent-Onset Type 1 Diabetes Mellitus: A 3-Month Follow-Up Pilot Study. Front Immunol. 2020 Jun 2;11:993. https://doi.org/10.3389/fimmu.2020.00993. eCollection 2020. PMID: 32582156

- Barbarawi M, Zayed Y, Barbarawi O, et al. Effect of Vitamin D Supplementation on the Incidence of Diabetes Mellitus. J Clin Endocrinol Metab. 2020 Aug 1;105(8):dgaa335. https://doi.org/10.1210/clinem/dgaa335. PMID: 32491181

- Bhatt SP, Misra A, Pandey RM, et al. Author Correction: Vitamin D Supplementation in Overweight/obese Asian Indian Women with Prediabetes Reduces Glycemic Measures and Truncal Subcutaneous Fat: A 78 Weeks Randomized Placebo-Controlled Trial (PREVENT-WIN Trial). Sci Rep. 2020 Jun 12;10(1):9844. https://doi.org/10.1038/s41598-020-67064-9. PMID: 32528046

- Bornstedt ME, Gjerlaugsen N, Olstad OK, et al. Vitamin D metabolites influence expression of genes concerning cellular viability and function in insulin producing β-cells (INS1E). Gene. 2020 Jul 1;746:144649. https://doi.org/10.1016/j.gene.2020.144649. Epub 2020 Apr 3. PMID: 32251702

- Chen J, Gong X, Liu J, et al. Vitamin D supplementation in the treatment of type 2 diabetic microangiopathy: A protocol for a systematic review and meta-analysis. Medicine (Baltimore). 2020 Aug 14;99(33):e20978. https://doi.org/10.1097/MD.0000000000020978. PMID: 32871975

- Choi MK, Putthapiban P, Lekprasert P. Falsely Elevated 25-Hydroxy-Vitamin D Levels in Patients with Hypercalcemia. Case Rep Endocrinol. 2020 Aug 9;2020:8873506. https://doi.org/10.1155/2020/8873506. eCollection 2020. PMID: 32844041
- Crewther B, Cook C, Fitzgerald J, et al. Vitamin D and Cortisol as Moderators of the Relationship Between Testosterone and Exercise Performance in Adolescent Male Athletes. Pediatr Exerc Sci. 2020 Jul 29:1-6. https://doi.org/10.1123/pes.2019-0229. Online ahead of print. PMID: 32726751
- Cruciani S, Garroni G, Balzano F, et al. Tuning Adipogenic Differentiation in ADSCs by Metformin and Vitamin D: Involvement of miRNAs. Int J Mol Sci. 2020 Aug 27;21(17):E6181. https://doi.org/10.3390/ijms21176181. PMID: 32867201
- Dabeer S, Sharma N, Nagdeote A. Vitamin D in Hypothyroid Patients and Association between Vitamin D and Anti-TPO in Autoimmune Hypothyroidism. Clin Lab. 2020 Aug 1;66(8). https://doi.org/10.7754/Clin.Lab.2020.191235. PMID: 32781825
- Daimon M, Fujita T, Murabayashi M, et al. Exacerbation of Hyperparathyroidism, Secondary to a Reduction in Kidney Function, in Individuals With Vitamin D Deficiency. Front Med (Lausanne). 2020 Jun 5;7:221. https://doi.org/10.3389/fmed.2020.00221. eCollection 2020. PMID: 32582730
- da Silva Teixeira S, Harrison K, Uzodike M, et al. Vitamin D actions in neurons require the PI3K pathway for both enhancing insulin signaling and rapid depolarizing effects. J Steroid Biochem Mol Biol. 2020 Jun;200:105690. https://doi.org/10.1016/j.jsbmb.2020.105690. Epub 2020 May 11. PMID: 32408067
- Duan L, Han L, Liu Q, et al. Effects of Vitamin D Supplementation on General and Central Obesity: Results from 20 Randomized Controlled Trials Involving Apparently Healthy Populations. Ann Nutr Metab. 2020 Jul 9:1-12. https://doi.org/10.1159/000507418. Online ahead of print. PMID: 32645694
- Ebrahimkhani S, Ghavamzadeh S, Mehdizadeh A. The effects of vitamin D and curcuminoids supplementation on anthropometric measurements and blood pressure in type 2 diabetic patients with coexisting hypovitaminosis D: A double-blind, placebo-controlled randomized clinical trial. Clin Nutr ESPEN. 2020 Jun;37:178-186. https://doi.org/10.1016/j.clnesp.2020.02.017. Epub 2020 Mar 20. PMID: 32359741
- El Hajj C, Walrand S, Helou M, et al. Effect of Vitamin D Supplementation on Inflammatory Markers in Non-Obese Lebanese Patients with Type 2 Diabetes: A Randomized Controlled Trial. Nutrients. 2020 Jul 9;12(7):2033. https://doi.org/10.3390/nu12072033. PMID: 32659891
- Faraji S, Alizadeh M. Mechanistic Effects of Vitamin D Supplementation on Metabolic Syndrome Components in Patients with or without Vitamin D Deficiency. J Obes Metab Syndr. 2020 Aug 4. https://doi.org/10.7570/jomes20003. Online ahead of print. PMID: 32747610 Review.
- Feng Y, Qiu T, Chen H, et al. Association of serum IL-21 and vitamin D concentrations in Chinese children with autoimmune thyroid disease. Clin Chim Acta. 2020 Aug;507:194-198. https://doi.org/10.1016/j.cca.2020.04.030. Epub 2020 Apr 28. PMID: 32360157
- Gangloff A, Bergeron J, Lemieux I, et al. Adiposity, lifestyle and vitamin D levels: the quest for answers. Int J Obes (Lond). 2020 Jul;44(7):1628-1629. https://doi.org/10.1038/s41366-020-0600-0. Epub 2020 May 21. PMID: 32439910
- Gao X, Wang H, Bidulescu A. Lifestyle interventions along with vitamin D supplements on reducing leptinemia in obese man. Int J Obes (Lond). 2020 Jul;44(7):1626-1627. https://doi.org/10.1038/s41366-020-0599-2. Epub 2020 May 19. PMID: 32427980
- Gunes A, Yazicioglu MB, Tiryaki C, et al. Evaluation of vitamin D receptor gene polymorphisms in patients with differentiated thyroid carcinomas and nodular goiter. Minerva Endocrinol. 2020 Aug 3. https://doi.org/10.23736/S0391-1977.20.03160-0. Online ahead of print. PMID: 32744437
- Horsanalı MO, Eren H, Dil E, et al. Novel predictive risk factor of erectile dysfunction: Serum 25-hydroxy vitamin D. Andrologia. 2020 Jul 29:e13767. https://doi.org/10.1111/and.13767. Online ahead of print. PMID: 32725942
- Hu MJ, Niu QS, Wu HB, et al. Association of thyroid cancer risk with plasma 25-hydroxyvitamin D and vitamin D binding protein: a case-control study in China. J Endocrinol Invest. 2020 Jun;43(6):799-808. https://doi.org/10.1007/s40618-019-01167-7. Epub 2019 Dec 20. PMID: 31863361
- Ismail NA, Kamaruddin NA, Azhar Shah S, et al. The effect of vitamin D treatment on clinical and biochemical outcomes of primary aldosteronism. Clin Endocrinol (Oxf). 2020 Jun;92(6):509-517. https://doi.org/10.1111/cen.14177. Epub 2020 Mar 17. PMID: 32073675
- Jairoun AA, Shahwan MJ, Khattab MH. A Comparative assessment of Metabolic Syndrome and its association with Vitamin D and other risk factors in Type 2 Diabetes Mellitus Patients. Curr Diabetes Rev. 2020 Jul 16. https://doi.org/10.2174/1573399816666200716193115. Online ahead of print. PMID: 32674733
- Josef R, Jitka P, Martina Z, et al. Concentration of NK cells after β-glucan and vitamin D supplementation in patients with diabetic retinopathy. Folia Microbiol (Praha). 2020 Aug;65(4):755-761. https://doi.org/10.1007/s12223-020-00789-2. Epub 2020 Apr 4. PMID: 32248405
- Karonova T, Stepanova A, Bystrova A, et al. High-Dose Vitamin D Supplementation Improves Microcirculation and Reduces Inflammation in Diabetic Neuropathy Patients. Nutrients. 2020 Aug 20;12(9):E2518. https://doi.org/10.3390/nu12092518. PMID: 32825324
- Keller A, Varela Vazquez C, Dangol R, et al. The Role of Vitamin D in the Development of Diabetes Post Gestational Diabetes Mellitus: A Systematic Literature Review. Nutrients. 2020 Jun 10;12(6):1733. https://doi.org/10.3390/nu12061733. PMID: 32531957
- Kheirouri S, Alizadeh M. Vitamin D and advanced glycation end products and their receptors. Pharmacol Res. 2020 Aug;158:104879. https://doi.org/10.1016/j.phrs.2020.104879. Epub 2020 May 13. PMID: 32413483

- Klahold E, Penna-Martinez M, Bruns F, et al. Vitamin D in Type 2 Diabetes: Genetic Susceptibility and the Response to Supplementation. Horm Metab Res. 2020 Jul;52(7):492-499. https://doi.org/10.1055/a-1157-0026. Epub 2020 Jun 15. PMID: 32542627
- Klinedinst BS, Meier NF, Larsen B, et al. Walking in the Light: How History of Physical Activity, Sunlight, and Vitamin D Account for Body Fat-A UK Biobank Study. Obesity (Silver Spring). 2020 Jun 22. https://doi.org/10.1002/oby.22852. Online ahead of print. PMID: 32573118
- Korsgren O. The role of vitamin D in the aetiology of type 1 diabetes. Diabetologia. 2020 Jun;63(6):1279-1280. https://doi.org/10.1007/s00125-020-05109-4. Epub 2020 Feb 10. PMID: 32043184
- Krysiak R, Kowalcze K, Okopień B. Hyperprolactinaemia attenuates the inhibitory effect of vitamin D/selenomethionine combination therapy on thyroid autoimmunity in euthyroid women with Hashimoto's thyroiditis: A pilot study. J Clin Pharm Ther. 2020 Jul 10. https://doi.org/10.1111/jcpt.13214. Online ahead of print. PMID: 32649802
- Krysiak R, Kowalcze K, Okopień B. The impact of combination therapy with metformin and exogenous vitamin D on hypothalamic-pituitary-thyroid axis activity in women with autoimmune thyroiditis and high-normal thyrotropin levels. J Clin Pharm Ther. 2020 Jul 24. https://doi.org/10.1111/jcpt.13233. Online ahead of print. PMID: 32706919
- Kwak JH, Choi YH, Paik JK. Vitamin D Status, Fiber Intake, and Type 2 Diabetes in U.S. Adults. J Med Food. 2020 Jul;23(7):711-718. https://doi.org/10.1089/jmf.2019.4528. Epub 2020 May 11. PMID: 32392443
- Lee H, Lee H, Lim Y. Vitamin D(3) improves lipophagy-associated renal lipid metabolism and tissue damage in diabetic mice. Nutr Res. 2020 Aug;80:55-65. https://doi.org/10.1016/j.nutres.2020.06.007. Epub 2020 Jun 10. PMID: 32693268
- Li F, Qiu X, Yao H, et al. Serum vitamin D levels and type 2 diabetic erectile dysfunction: A protocol for systematic review and meta-analysis. Medicine (Baltimore). 2020 Jun 12;99(24):e20665. https://doi.org/10.1097/MD.0000000000020665. PMID: 32541509
- Li L, Li K, Li J, et al. Ethnic, geographic, and seasonal differences of vitamin D status among adults in south-west China. J Clin Lab Anal. 2020 Aug 26:e23532. https://doi.org/10.1002/jcla.23532. Online ahead of print. PMID: 32851701
- Liu L, Cao Z, Lu F, et al. Vitamin D deficiency and metabolic syndrome in elderly Chinese individuals: evidence from CLHLS. Nutr Metab (Lond). 2020 Jul 29;17:58. https://doi.org/10.1186/s12986-020-00479-3. eCollection 2020. PMID: 32760432
- Lopes M, Laiginhas R, Madeira C, et al. Association between Serum Vitamin D and Diabetic Retinopathy in Portuguese Patients with Type 1 Diabetes. Acta Med Port. 2020 Jul 1;33(7-8):459-465. https://doi.org/10.20344/amp.12890. Epub 2020 Jul 1. PMID: 32669185
- Ludvigsson J, Routray I, Elluru S, et al. Combined vitamin D, ibuprofen and glutamic acid decarboxylase-alum treatment in recent onset Type I diabetes: lessons from the DIABGAD randomized pilot trial. Future Sci OA. 2020 Jun 23;6(7):FSO604. https://doi.org/10.2144/fsoa-2020-0078. PMID: 32802401
- Malik MZ, Latiwesh OB, Nouh F, et al. Response of Parathyroid Hormone to Vitamin D Deficiency in Otherwise Healthy Individuals. Cureus. 2020 Aug 15;12(8):e9764. https://doi.org/10.7759/cureus.9764. PMID: 32821633
- Medeiros JFP, de Oliveira Borges MV, Soares AA, et al. The impact of vitamin D supplementation on VDR gene expression and body composition in monozygotic twins: randomized controlled trial. Sci Rep. 2020 Jul 20;10(1):11943. https://doi.org/10.1038/s41598-020-69128-2. PMID: 32686744
- Miettinen ME, Niinistö S, Honkanen J, et al. The role of vitamin D in the aetiology of type 1 diabetes. Reply to Korsgren O [letter]. Diabetologia. 2020 Jun;63(6):1281-1282. https://doi.org/10.1007/s00125-020-05135-2. Epub 2020 Mar 31. PMID: 32236733
- Miteva MZ, Nonchev BI, Orbetzova MM, et al. Vitamin D and Autoimmune Thyroid Diseases - a Review. Folia Med (Plovdiv). 2020 Jun 30;62(2):223-229. https://doi.org/10.3897/folmed.62.e47794. PMID: 32666762
- Mustafa G, Khalid M, Ahmed I, et al. Correlation of serum levels of Vitamin D(3) with serum parathormone in nursing mothers and infants 1-6 months' age from South Punjab, Pakistan. Pak J Med Sci. 2020 Jul-Aug;36(5):1015-1019. https://doi.org/10.12669/pjms.36.5.2150. PMID: 32704281
- Neves Marques de Queiroz N, Trindade Cunha de Melo F, de Souza Resende F, et al. Vitamin D and PTH: data from a cross-sectional study in an equatorial population. Endocr Connect. 2020 Jul;9(7):667-675. https://doi.org/10.1530/EC-20-0206. PMID: 32567548
- Og G, M C, Pv J, et al. Associations of physical activity with vitamin D status depends on obesity status in old adults. Clin Nutr ESPEN. 2020 Oct;39:222-226. https://doi.org/10.1016/j.clnesp.2020.06.009. Epub 2020 Jul 12. PMID: 32859321
- Park CY, Shin Y, Kim JH, et al. Effects of high fat diet-induced obesity on vitamin D metabolism and tissue distribution in vitamin D deficient or supplemented mice. Nutr Metab (Lond). 2020 Jun 15;17:44. https://doi.org/10.1186/s12986-020-00463-x. eCollection 2020. PMID: 32549901
- Pittas AG, Jorde R, Kawahara T, et al. Vitamin D supplementation for prevention of type 2 diabetes mellitus. To D or not to D? J Clin Endocrinol Metab. 2020 Aug 26:dgaa594. https://doi.org/10.1210/clinem/dgaa594. Online ahead of print. PMID: 32844212
- Rafiq R, El Haddaoui H, de Mutsert R, et al. Adiposity is a confounding factor which largely explains the association of serum vitamin D concentrations with C-reactive protein, leptin and adiponectin. Cytokine. 2020 Jul;131:155104. https://doi.org/10.1016/j.cyto.2020.155104. Epub 2020 Apr 20. PMID: 32325367
- Ramouz A, Hosseini M, Hosseinzadeh SS, et al. Preoperative Vitamin D Supplementation in Patients With Vitamin D Deficiency Undergoing Total Thyroidectomy. Am J Med Sci. 2020 Aug;360(2):146-152. https://doi.org/10.1016/j.am-

jms.2020.04.036. Epub 2020 May 6. PMID: 32466854

- Rao SD, Miragaya J, Parikh N, et al. Effect of vitamin D nutrition on disease indices in patients with primary hyperparathyroidism. J Steroid Biochem Mol Biol. 2020 Jul;201:105695. https://doi.org/10.1016/j.jsbmb.2020.105695. Epub 2020 May 12. PMID: 32407867
- Rossi GP, Lenzini L. Vitamin D supplementation: a novel therapy for aldosteronism? Nat Rev Endocrinol. 2020 Jun;16(6):303-304. https://doi.org/10.1038/s41574-020-0359-3. PMID: 32286517
- Saki F, Sadeghian F, Kasaee SR, et al. Effect of prolactin and estrogen on the serum level of 1,25-dihydroxy vitamin D and FGF23 in female rats. Arch Gynecol Obstet. 2020 Jul;302(1):265-271. https://doi.org/10.1007/s00404-020-05567-6. Epub 2020 May 14. PMID: 32409924
- Samouda H, De Beaufort C, Gilson G, et al. Relationship of oxidative stress to visceral adiposity in youth and role played by vitamin D. Pediatr Diabetes. 2020 Aug;21(5):758-765. https://doi.org/10.1111/pedi.13055. Epub 2020 Jun 8. PMID: 32418334
- Santi D, Ivell R, Anand-Ivell R, et al. Effects of acute hCG stimulation on serum INSL3 and 25-OH vitamin D in Klinefelter syndrome. Andrology. 2020 Jun 27. https://doi.org/10.1111/andr.12851. Online ahead of print. PMID: 32593193
- Santos HO, Howell S, Nichols K, et al. Reviewing the Evidence on Vitamin D Supplementation in the Management of Testosterone Status and Its Effects on Male Reproductive System (Testis and Prostate): Mechanistically Dazzling but Clinically Disappointing. Clin Ther. 2020 Jun;42(6):e101-e114. https://doi.org/10.1016/j.clinthera.2020.03.016. Epub 2020 May 21. PMID: 32446600 Review.
- Savastio S, Cadario F, D'Alfonso S, et al. Vitamin D Supplementation modulates ICOS+ and ICOS- regulatory T cell in siblings of Children with Type 1 Diabetes. J Clin Endocrinol Metab. 2020 Aug 26:dgaa588. https://doi.org/10.1210/clinem/dgaa588. Online ahead of print. PMID: 32844222
- Savastio S, Cinquatti R, Tagliaferri F, et al. Vitamin D effects and endocrine diseases. Minerva Pediatr. 2020 Jun 4. https://doi.org/10.23736/S0026-4946.20.05915-0. Online ahead of print. PMID: 32506881
- Segovia-Ortí R, Bennassar AB, de Sotto-Esteban D, et al. Vitamin D status is related to severity at onset of diabetes and worse glycemic control. J Pediatr Endocrinol Metab. 2020 Aug 27:/j/jpem.ahead-of-print/jpem-2020-0149/jpem-2020-0149.xml. https://doi.org/10.1515/jpem-2020-0149. Online ahead of print. PMID: 32853168
- Tohari AM, Almarhoun M, Alhasani RH, et al. Protection by vitamin D against high-glucose-induced damage in retinal pigment epithelial cells. Exp Cell Res. 2020 Jul 1;392(1):112023. https://doi.org/10.1016/j.yexcr.2020.112023. Epub 2020 Apr 20. PMID: 32325079
- Totonchi H, Rezaei R, Noori S, et al. Vitamin D Receptor Gene Polymorphisms and the Risk of Metabolic Syndrome (MetS): A Meta-Analysis. Endocr Metab Immune Disord Drug Targets. 2020 Aug 4. https://doi.org/10.2174/1871530320666200805101302. Online ahead of print. PMID: 32767922
- Unsal IO, Calapkulu M, Sencar ME, et al. Preoperative Vitamin D Levels as a Predictor of Transient Hypocalcemia and Hypoparathyroidism After Parathyroidectomy. Sci Rep. 2020 Jun 18;10(1):9895. https://doi.org/10.1038/s41598-020-66889-8. PMID: 32555278
- Valentini A, Perrone MA, Cianfarani MA, et al. Obesity, vitamin D status and physical activity: 1,25(OH)2D as a potential marker of vitamin D deficiency in obese subjects. Panminerva Med. 2020 Jun;62(2):83-92. https://doi.org/10.23736/S0031-0808.20.03770-2. PMID: 32515572
- Vibhatavata P, Pisarnturakit P, Boonsripitayanon M, et al. Effect of Preoperative Vitamin D Deficiency on Hypocalcemia in Patients with Acute Hypoparathyroidism after Thyroidectomy. Int J Endocrinol. 2020 Jul 22;2020:5162496. https://doi.org/10.1155/2020/5162496. eCollection 2020. PMID: 32774362
- Viloria K, Nasteska D, Briant LJB, et al. Vitamin-D-Binding Protein Contributes to the Maintenance of α Cell Function and Glucagon Secretion. Cell Rep. 2020 Jun 16;31(11):107761. https://doi.org/10.1016/j.celrep.2020.107761. PMID: 32553153
- Wang M, Zhou T, Li X, et al. Baseline Vitamin D Status, Sleep Patterns, and the Risk of Incident Type 2 Diabetes in Data From the UK Biobank Study. Diabetes Care. 2020 Aug 26:dc201109. https://doi.org/10.2337/dc20-1109. Online ahead of print. PMID: 32847829
- Wang N, Wang C, Chen X, et al. Vitamin D, prediabetes and type 2 diabetes: bidirectional Mendelian randomization analysis. Eur J Nutr. 2020 Jun;59(4):1379-1388. https://doi.org/10.1007/s00394-019-01990-x. Epub 2019 May 10. PMID: 31076857
- Wang SY, Shen TT, Xi BL, et al. Vitamin D affects the neutrophil-to-lymphocyte ratio in patients with type 2 diabetes mellitus. J Diabetes Investig. 2020 Jun 27. https://doi.org/10.1111/jdi.13338. Online ahead of print. PMID: 32593190
- Zhai N, Bidares R, Makoui MH, et al. Vitamin D receptor gene polymorphisms and the risk of the type 1 diabetes: a meta-regression and updated meta-analysis. BMC Endocr Disord. 2020 Aug 8;20(1):121. https://doi.org/10.1186/s12902-020-00575-8. PMID: 32771009

GASTROENTEROLOGIA

- Ahlawat R, Weinstein T, Markowitz J, et al. Response to Letter to the Editor on "Should We Assess Vitamin D Status in Pediatric Patients With Celiac Disease?". J Pediatr Gastroenterol Nutr. 2020 Jun;70(6):e138-e139. https://doi.org/10.1097/MPG.0000000000002718. PMID: 32443057
- Ahmad SJ, Ahmed AR, Ali J, et al. The correlation between vitamin D levels and demographics in patients with gastrointestinal disorders; a cross-sectional study. Gastroenterol Hepatol Bed Bench. 2020 Summer;13(3):223-231. PMID: 32821352
- Akimbekov NS, Digel I, Sherelkhan DK, et al. Vitamin D and the Host-Gut Microbiome: A Brief Overview. Acta Histochem Cytochem. 2020 Jun 26;53(3):33-42. https://doi.org/10.1267/ahc.20011. Epub 2020 Jun 16. PMID: 32624628

- Bademci R, Erdoğan MA, Kara AY, et al. Therapeutic effects of vitamin D on acetic acid-induced colitis in rats. Acta Cir Bras. 2020 Jun 5;35(4):e202000404. https://doi.org/10.1590/s0102-865020200040000004. eCollection 2020. PMID: 32555936
- Bafutto M, Oliveira EC, Rezende Filho J. Use of Vitamin D With Anti-Tumor Necrosis Factor Therapy for Crohn's Disease. Gastroenterology Res. 2020 Jun;13(3):101-106. https://doi.org/10.14740/gr1264. Epub 2020 Jun 18. PMID: 32655726
- Barchetta I, Cimini FA, Chiappetta C, et al. Relationship between hepatic and systemic angiopoietin-like 3, hepatic Vitamin D receptor expression and NAFLD in obesity. Liver Int. 2020 Jun 8. https://doi.org/10.1111/liv.14554. Online ahead of print. PMID: 32510837
- Cruz S, de Matos AC, da Cruz SP, et al. Non-pregnant Women Have a Lower Vitamin D than Pregnant Women After Gastric Bypass. Obes Surg. 2020 Jul;30(7):2558-2565. https://doi.org/10.1007/s11695-020-04512-5. PMID: 32103434
- Dai C, Jiang M. Influence of Severe Vitamin D Deficiency on the Clinical Course of Inflammatory Bowel Disease. Dig Dis Sci. 2020 Jun 11. https://doi.org/10.1007/s10620-020-06313-3. Online ahead of print. PMID: 32529518
- Domazetovic V, Iantomasi T, Bonanomi AG, et al. Vitamin D regulates claudin-2 and claudin-4 expression in active ulcerative colitis by p-Stat-6 and Smad-7 signaling. Int J Colorectal Dis. 2020 Jul;35(7):1231-1242. https://doi.org/10.1007/s00384-020-03576-0. Epub 2020 Apr 20. PMID: 32314188
- Dutra JDM, Lisboa QC, Ferolla SM, et al. Vitamin D levels are not associated with non-alcoholic fatty liver disease severity in a Brazilian population. Int J Vitam Nutr Res. 2020 Jul 8:1-8. https://doi.org/10.1024/0300-9831/a000667. Online ahead of print. PMID: 32639223
- El-Mahdy RI, Ramadan HK, Mohammed HSED, et al. Impact of the etiology and Vitamin D receptor TaqI rs731236 gene polymorphism on the severity of acute pancreatitis. J Hepatobiliary Pancreat Sci. 2020 Aug 11. https://doi.org/10.1002/jhbp.817. Online ahead of print. PMID: 32780933
- Elhafiz M, Zhao G, Ismail M, et al. Imbalanced insulin substrate-1 and insulin substrate-2 signaling trigger hepatic steatosis in vitamin D deficient rats: 8-methoxypsoralen, a vitamin D receptor ligand with a promising anti-steatotic action. Biochim Biophys Acta Mol Cell Biol Lipids. 2020 Jun;1865(6):158657. https://doi.org/10.1016/j.bbalip.2020.158657. Epub 2020 Feb 8. PMID: 32045698
- Fakhoury HMA, Kvietys PR, AlKattan W, et al. Vitamin D and intestinal homeostasis: Barrier, microbiota, and immune modulation. J Steroid Biochem Mol Biol. 2020 Jun;200:105663. https://doi.org/10.1016/j.jsbmb.2020.105663. Epub 2020 Mar 16. PMID: 32194242 Review.
- Fang W, Kenny R, Rizvi QU, et al. Hypophosphataemia after ferric carboxymaltose is unrelated to symptoms, intestinal inflammation or vitamin D status. BMC Gastroenterol. 2020 Jun 10;20(1):183. https://doi.org/10.1186/s12876-020-01298-9. PMID: 32522150
- Furtado MM. Comment on: Severe obesity and vitamin D deficiency treatment options before the bariatric surgery: a randomized clinical trial. Surg Obes Relat Dis. 2020 Aug;16(8):e45-e46. https://doi.org/10.1016/j.soard.2020.04.004. Epub 2020 Apr 18. PMID: 32418770
- Jackson RI, Cardigan T, Duncan H, et al. Using One-off Dosing to Treat Vitamin D Deficiency in Paediatric Coeliac Disease. J Pediatr Gastroenterol Nutr. 2020 Jun;70(6):e138. https://doi.org/10.1097/MPG.0000000000002717. PMID: 32443056
- Kempinska-Podhorodecka A, Adamowicz M, Chmielarz M, et al. Vitamin-D Receptor-Gene Polymorphisms Affect Quality of Life in Patients with Autoimmune Liver Diseases. Nutrients. 2020 Jul 27;12(8):E2244. https://doi.org/10.3390/nu12082244. PMID: 32727130
- Kojecky V, Matous J, Kianicka B, et al. Vitamin D levels in IBD: a randomised trial of weight-based versus fixed dose vitamin D supplementation. Scand J Gastroenterol. 2020 Jun;55(6):671-676. https://doi.org/10.1080/00365521.2020.1774921. Epub 2020 Jun 13. PMID: 32538182
- Kubota Y, Nagano H, Ishii K, et al. Small intestinal bacterial overgrowth as a cause of protracted wound healing and vitamin D deficiency in a spinal cord injured patient with a sacral pressure sore: a case report. BMC Gastroenterol. 2020 Aug 24;20(1):283. https://doi.org/10.1186/s12876-020-01423-8. PMID: 32831031
- Laviano E, Sanchez M, González-Nicolás MT, et al. Surgical site infection in hepatobiliary surgery patients and its relationship with serum vitamin D concentration. Cir Esp. 2020 Jul 25:S0009-739X(20)30072-5. https://doi.org/10.1016/j.ciresp.2020.03.004. Online ahead of print. PMID: 32723503 English, Spanish.
- Limketkai BN, Singla MB, Rodriguez B, et al. Levels of Vitamin D Are Low After Crohn's Disease Is Established But Not Before. Clin Gastroenterol Hepatol. 2020 Jul;18(8):1769-1776.e1. https://doi.org/10.1016/j.cgh.2019.09.034. Epub 2019 Oct 4. PMID: 31589971
- Liu J, Wang T, Chen J, et al. Efficacy of vitamin D supplement in children with nonalcoholic fatty liver disease: A protocol for systematic review and meta-analysis. Medicine (Baltimore). 2020 Jul 31;99(31):e20960. https://doi.org/10.1097/MD.0000000000020960. PMID: 32756082
- Lu C, Zhou W, He X, et al. Vitamin D status and vitamin D receptor genotypes in celiac disease: a meta-analysis. Crit Rev Food Sci Nutr. 2020 Jun 8:1-9. https://doi.org/10.1080/10408398.2020.1772716. Online ahead of print. PMID: 32508121
- Lukenda Zanko V, Domislovic V, Trkulja V, et al. Vitamin D for treatment of non-alcoholic fatty liver disease detected by transient elastography: A randomized, double-blind, placebo-controlled trial. Diabetes Obes Metab. 2020 Jul 1. https://doi.org/10.1111/dom.14129. Online ahead of print. PMID: 32613718
- Lyu C, Jiang S, Kong M, et al. Vitamin D protects against necrotising enterocolitis in newborn mice by activating the ERK signalling pathway. Mol Med Rep. 2020 Sep;22(3):2107-2114. https://doi.org/10.3892/mmr.2020.11286. Epub 2020 Jun 26. PMID: 32705172
- Miura K, Oshima T, Ito C, et al. Vitamin D receptor is overexpressed in the duodenum

of patients with irritable bowel syndrome. J Gastroenterol Hepatol. 2020 Aug 24. https://doi.org/10.1111/jgh.15225. Online ahead of print. PMID: 32839988

- Myint A, Sauk JS, Limketkai BN. The role of vitamin D in inflammatory bowel disease: a guide for clinical practice. Expert Rev Gastroenterol Hepatol. 2020 Jul;14(7):539-552. https://doi.org/10.1080/17474124.2020.1775580. Epub 2020 Jun 16. PMID: 32543306
- Pilone V, Tramontano S, Cutolo C, et al. Clinical factors correlated with vitamin D deficiency in patients with obesity scheduled for bariatric surgery: A single center experience. Int J Vitam Nutr Res. 2020 Jun;90(3-4):346-352. https://doi.org/10.1024/0300-9831/a000662. Epub 2020 May 26. PMID: 32450764
- Pinto SL, Juvanhol LL, Bressan J. Weight Loss After RYGB Is Associated with an Increase in Serum Vitamin D in a Population with Low Prevalence of Hypovitaminosis D at Low Latitude. Obes Surg. 2020 Jun 18. https://doi.org/10.1007/s11695-020-04780-1. Online ahead of print. PMID: 32557392
- Raoof M, Näslund I, Rask E, et al. Bone Mineral Density, Parathyroid Hormone, and Vitamin D After Gastric Bypass Surgery: a 10-Year Longitudinal Follow-Up. Obes Surg. 2020 Aug 28. https://doi.org/10.1007/s11695-020-04912-7. Online ahead of print. PMID: 32860128
- Rodrigues B, Cordeiro A, Cruz S, et al. Vertical Sleeve Gastrectomy Has Better Weight Evolution and Serum Concentrations of Vitamin D when Compared with Roux-Y Gastric Bypass. Obes Surg. 2020 Jul 2. https://doi.org/10.1007/s11695-020-04815-7. Online ahead of print. PMID: 32617917
- Shi Y, Cui X, Sun Y, et al. Intestinal vitamin D receptor signaling ameliorates dextran sulfate sodium-induced colitis by suppressing necroptosis of intestinal epithelial cells. FASEB J. 2020 Aug 11. https://doi.org/10.1096/fj.202000143RRR. Online ahead of print. PMID: 32779265
- Shi Y, Liu Z, Cui X, et al. Correction: Intestinal vitamin D receptor knockout protects from oxazolone-induced colitis. Cell Death Dis. 2020 Aug 21;11(8):675. https://doi.org/10.1038/s41419-020-02913-z. PMID: 32826885
- Shi Y, Liu Z, Cui X, et al. Intestinal vitamin D receptor knockout protects from oxazolone-induced colitis. Cell Death Dis. 2020 Jun 15;11(6):461. https://doi.org/10.1038/s41419-020-2653-3. PMID: 32541827
- Sutherland RL, Ormsbee J, Pader J, et al. Vitamin D supplementation reduces the occurrence of colorectal polyps in high-latitude locations. Prev Med. 2020 Jun;135:106072. https://doi.org/10.1016/j.ypmed.2020.106072. Epub 2020 Apr 1. PMID: 32247012
- Triantos C, Kalafateli M, Aggeletopoulou I, et al. Vitamin D-related immunomodulation in patients with liver cirrhosis. Eur J Gastroenterol Hepatol. 2020 Jul;32(7):867-876. https://doi.org/10.1097/MEG.0000000000001597. PMID: 31789949
- Udomsinprasert W, Jittikoon J, Sukkho S, et al. Decreased circulating vitamin D reflects adverse outcomes of hepatitis C virus infection: A systematic review and meta-analysis. J Infect. 2020 Jun 15:S0163-4453(20)30407-2. https://doi.org/10.1016/j.jinf.2020.06.025. Online ahead of print. PMID: 32553842
- Waldenström J, Nyström K, Nilsson S, et al. The relation of 25-hydroxy vitamin D concentrations to liver histopathology, seasonality and baseline characteristics in chronic hepatitis C virus genotype 2 or 3 infection. PLoS One. 2020 Aug 21;15(8):e0237840. https://doi.org/10.1371/journal.pone.0237840. eCollection 2020. PMID: 32822420
- Zhang YG, Lu R, Wu S, et al. Vitamin D Receptor Protects Against Dysbiosis and Tumorigenesis via the JAK/STAT Pathway in Intestine. Cell Mol Gastroenterol Hepatol. 2020 Jun 1:S2352-345X(20)30086-2. https://doi.org/10.1016/j.jcmgh.2020.05.010. Online ahead of print. PMID: 32497792
- Zhou X, Chen C, Zhong YN, et al. Effect and mechanism of vitamin D on the development of colorectal cancer based on intestinal flora disorder. J Gastroenterol Hepatol. 2020 Jun;35(6):1023-1031. https://doi.org/10.1111/jgh.14949. Epub 2019 Dec 17. PMID: 31788852

GINECOLOGIA OSTETRICIA

- Aguilar-Cordero MJ, Lasserrot-Cuadrado A, Mur-Villar N, et al. Vitamin D, preeclampsia and prematurity: A systematic review and meta-analysis of observational and interventional studies. Midwifery. 2020 Aug;87:102707. https://doi.org/10.1016/j.midw.2020.102707. Epub 2020 May 6. PMID: 32438283 Review.
- Aljanahi A, Hadhiah H, Al-Nasr W, et al. The Effect of Dietary Intake of Vitamin D on Gestational Diabetes Mellitus. Abuzaid O, Al Qahtani N, Sebastian T, Metwally R. Nutr Metab Insights. 2020 Aug 6;13:1178638820932164.https://doi.org/10.1177/1178638820932164. eCollection 2020. PMID: 32843841
- Arslanca T, Korkmaz H, Arslanca SB, et al. The Relationship between Vitamin D and Vasomotor Symptoms During the Postmenopausal Period. Clin Lab. 2020 Jul 1;66(7). https://doi.org/10.7754/Clin.Lab.2019.191116. PMID: 32658424
- Augustin H, Mulcahy S, Schoenmakers I, et al. Late Pregnancy Vitamin D Deficiency is Associated with Doubled Odds of Birth Asphyxia and Emergency Caesarean Section: A Prospective Cohort Study. Matern Child Health J. 2020 Aug 25. https://doi.org/10.1007/s10995-020-02999-z. Online ahead of print. PMID: 32844359
- Badary DM, Abou-Taleb H. Vitamin D receptor and cellular retinol-binding protein-1 immunohistochemical expression in normal, hyperplastic and neoplastic endometrium: Possible diagnostic and therapeutic implications. Ann Diagn Pathol. 2020 Jul 18;48:151569. https://doi.org/10.1016/j.anndiagpath.2020.151569. Online ahead of print. PMID: 32805516
- Baek JC, Jo JY, Lee SM, et al. Vitamin D and endometriosis: Is there a correlation with disease severity? Clin Exp Reprod Med. 2020 Aug 25. https://doi.org/10.5653/cerm.2019.03342.r1. Online ahead of print. PMID: 32835470
- Chen GD, Pang TT, Li PS, et al. Early pregnancy vitamin D and the risk of adverse maternal and infant outcomes: a retrospective cohort study. BMC Pregnancy Childbirth. 2020 Aug 14;20(1):465. https://doi.org/10.1186/s12884-020-03158-6. PMID: 32795269
- Chen HY, Zhang HP, Yang J, et al. The

relationship between maternal vitamin D deficiency and glycolipid metabolism and adverse pregnancy outcome. Clin Endocrinol (Oxf). 2020 Jul 26. https://doi.org/10.1111/cen.14298. Online ahead of print. PMID: 32713029

- Chen X, Diao L, Lian R, et al. Potential impact of maternal vitamin D status on peripheral blood and endometrium cellular immunity in women with recurrent implantation failure. Am J Reprod Immunol. 2020 Jul;84(1):e13243. https://doi.org/10.1111/aji.13243. Epub 2020 May 12. PMID: 32277536
- Chen YH, Liu ZB, Ma L, et al. Gestational vitamin D deficiency causes placental insufficiency and fetal intrauterine growth restriction partially through inducing placental inflammation. J Steroid Biochem Mol Biol. 2020 Aug 9;203:105733. https://doi.org/10.1016/j.jsbmb.2020.105733. Online ahead of print. PMID: 32784046
- Comberiati P, Peroni DG. Vitamin D supplementation in pregnancy does not prevent school-age asthma. Allergy. 2020 Aug;75(8). https://doi.org/10.1111/all.14337. Epub 2020 May 17. PMID: 32335931
- de O Farias MC, Cavalcante TLT, Assunção ML, et al. Association between maternal or cord blood concentrations of 25-hydroxycholecalciferol or vitamin D supplementation during pregnancy and the cytokines profile in the umbilical cord blood: Systematic literature review. Steroid Biochem Mol Biol. 2020 Aug 23;203:105739. https://doi.org/10.1016/j.jsbmb.2020.105739. Online ahead of print. PMID: 32846186 Review.
- de Souza EA, Pisani LP. The relationship among vitamin D, TLR4 pathway and preeclampsia. Mol Biol Rep. 2020 Aug;47(8):6259-6267. https://doi.org/10.1007/s11033-020-05644-8. Epub 2020 Jul 11. PMID: 32654051 Review.
- Dong J, Zhou Q, Wang J, et al. Association between variants in vitamin D-binding protein gene and vitamin D deficiency among pregnant women in china. J Clin Lab Anal. 2020 Jun 14:e23376. https://doi.org/10.1002/jcla.23376. Online ahead of print. PMID: 32537819
- Evangelisti G, Barra F, Fichera M, et al. Vitamin D and endometriosis: Is there a correlation with disease severity? Clin Exp Reprod Med. 2020 Aug 25. https://doi.org/10.5653/cerm.2019.03342. Online ahead of print. PMID: 32835471
- Fernando M, Coster TG, Ellery SJ, et al. Relationships between Total, Free and Bioavailable Vitamin D and Vitamin D Binding Protein in Early Pregnancy with Neonatal Outcomes: A Retrospective Cohort Study. Nutrients. 2020 Aug 19;12(9):E2495. https://doi.org/10.3390/nu12092495. PMID: 32824958 Free article.
- Fernando M, Ellery SJ, de Guingand D, et al. Early Pregnancy Vitamin D Binding Protein Is Independently Associated with the Development of Gestational Diabetes: A Retrospective Cohort Study. J Clin Med. 2020 Jul 10;9(7):2186. https://doi.org/10.3390/jcm9072186. PMID: 32664376
- Fogacci S, Fogacci F, Banach M, et al. Vitamin D supplementation and incident preeclampsia: A systematic review and meta-analysis of randomized clinical trials. Clin Nutr. 2020 Jun;39(6):1742-1752. https://doi.org/10.1016/j.clnu.2019.08.015. Epub 2019 Sep 4. PMID: 31526611
- Gjerde J, Kjellevold M, Dahl L, et al. Validation and Determination of 25(OH) Vitamin D and 3-Epi25(OH)D3 in Breastmilk and Maternal- and Infant Plasma during Breastfeeding. Nutrients. 2020 Jul 29;12(8):E2271. https://doi.org/10.3390/nu12082271. PMID: 32751196
- Harreiter J, Desoye G, van Poppel MNM, et al. Correction to: The Effects of Lifestyle and/or Vitamin D Supplementation Interventions on Pregnancy Outcomes: What Have we Learned from the DALI Studies? Curr Diab Rep. 2020 Jun 22;20(8):35. https://doi.org/10.1007/s11892-020-01322-y. PMID: 32566999
- He M, Mirzakhani H, Chen L, et al. Vitamin D Sufficiency Has a Limited Effect on Placental Structure and Pathology: Placental Phenotypes in the VDAART Trial. Endocrinology. 2020 Jun 1;161(6):bqaa057. https://doi.org/10.1210/endocr/bqaa057. PMID: 32270179
- Huebner M. Vitamin D: another piece of the puzzle in pelvic floor protection. BJOG. 2020 Jul 4. https://doi.org/10.1111/1471-0528.16398. Online ahead of print. PMID: 32621319
- Hyde NK, Brennan-Olsen SL, Wark JD, et al. The Vitamin D in Pregnancy Study: a prospective prebirth cohort in southern Australia. BMJ Open. 2020 Aug 13;10(8):e036003. https://doi.org/10.1136/bmjopen-2019-036003. PMID: 32792433
- Iliuta F, Pijoan JI, Lainz L, et al. Women's vitamin D levels and IVF results: a systematic review of the literature and meta-analysis, considering three categories of vitamin status (replete, insufficient and deficient). Hum Fertil (Camb). 2020 Aug 14:1-19. https://doi.org/10.1080/14647273.2020.1807618. Online ahead of print. PMID: 32791871
- Jin B, Qian L, Fu X, et al. Influence of vitamin D supplementation on lipid levels in polycystic ovary syndrome patients: a meta-analysis of randomized controlled trials. J Int Med Res. 2020 Aug;48(8):300060520935313. https://doi.org/10.1177/0300060520935313. PMID: 32776821
- Joukar F, Naghipour M, Hassanipour S, et al. Vitamin D deficiency associated with reproductive factors in northern Iranian women: The PERSIAN Guilan Cohort Study (PGCS). Clin Nutr ESPEN. 2020 Aug;38:271-276. https://doi.org/10.1016/j.clnesp.2020.03.022. Epub 2020 Apr 22. PMID: 32690168
- Kalaitzopoulos DR, Lempesis IG, Athanasaki F, et al. Association between vitamin D and endometriosis: a systematic review. Hormones (Athens). 2020 Jun;19(2):109-121. https://doi.org/10.1007/s42000-019-00166-w. Epub 2019 Dec 21. PMID: 31863346 Review.
- Kanike N, Hospattankar KG, Sharma A, et al. Prevalence of Vitamin D Deficiency in a Large Newborn Cohort from Northern United States and Effect of Intrauterine Drug Exposure. Nutrients. 2020 Jul 14;12(7):2085. https://doi.org/10.3390/nu12072085. PMID: 32674386
- Kelly CB, Wagner CL, Shary JR, et al. Vitamin D Metabolites and Binding Protein Predict Preeclampsia in Wom-

en with Type 1 Diabetes. Nutrients. 2020 Jul 10;12(7):2048. https://doi.org/10.3390/nu12072048. PMID: 32664257

- Kiely ME, Wagner CL, Roth DE. Vitamin D in pregnancy: Where we are and where we should go. J Steroid Biochem Mol Biol. 2020 Jul;201:105669. https://doi.org/10.1016/j.jsbmb.2020.105669. Epub 2020 Apr 14. PMID: 32302652 Review.
- Kim GM, Jeon GH. Serum vitamin D levels and ovarian reserve markers in secondary amenorrhea patients: Is there a link? Obstet Gynecol Sci. 2020 Jul;63(4):521-528. https://doi.org/10.5468/ogs.20071. Epub 2020 Jun 30. PMID: 32689777
- Kısa B, Kansu-Celik H, Candar T, et al. Severe 25-OH vitamin D deficiency as a reason for adverse pregnancy outcomes. J Matern Fetal Neonatal Med. 2020 Jul;33(14):2422-2426. https://doi.org/10.1080/14767058.2018.1554040. Epub 2019 Jan 6. PMID: 30614393
- Li H, Ma J, Huang R, et al. Prevalence of vitamin D deficiency in the pregnant women: an observational study in Shanghai, China. Arch Public Health. 2020 Jun 4;78:31. https://doi.org/10.1186/s13690-020-00414-1. eCollection 2020. PMID: 32518650
- Li X, Wang Y, Gao G, et al. High Prevalence of Vitamin D Deficiency in Pregnant Women in South China. Int J Vitam Nutr Res. 2020 Jun;90(3-4):273-278. https://doi.org/10.1024/0300-9831/a000592. Epub 2019 Jun 12. PMID: 31188079
- Lopez A, Cruz ML, Chompre G, et al. Influence of Stress on the Vitamin D-Vitamin D Receptor System, Macrophages, and the Local Inflammatory Milieu in Endometriosis. Reprod Sci. 2020 Jun 24. https://doi.org/10.1007/s43032-020-00235-1. Online ahead of print. PMID: 32583376
- Martin CB, Oshiro BT, Sands LD, et al. Vitamin-D dysregulation in early- and late-onset preeclampsia: A gestational-age matched study. J Steroid Biochem Mol Biol. 2020 Jul 15;203:105729. https://doi.org/10.1016/j.jsbmb.2020.105729. Online ahead of print. PMID: 32682061
- Meng DH, Zhang Y, Ma SS, et al. The role of parathyroid hormone during pregnancy on the relationship between maternal vitamin D deficiency and fetal growth restriction: a prospective birth cohort study. Br J Nutr. 2020 Aug 28;124(4):432-439. https://doi.org/10.1017/S0007114520001105. Epub 2020 Mar 26. PMID: 32213215
- Moghadam MT, Hosseini G, Absalan F, et al. Effects of Vitamin D on Apoptosis and Quality of Sperm in Asthenozoospermia. JBRA Assist Reprod. 2020 Jul 14;24(3):316-323. https://doi.org/10.5935/1518-0557.20200009. Online ahead of print. PMID: 32511900
- Mohammadi R, Tabrizi R, Hessami K, et al. Correlation of low serum vitamin-D with uterine leiomyoma: a systematic review and meta-analysis. Reprod Biol Endocrinol. 2020 Aug 14;18(1):85. https://doi.org/10.1186/s12958-020-00644-6. PMID: 32795307
- Moore CJ, Perreault M, Mottola MF, et al. Diet in Early Pregnancy: Focus on Folate, Vitamin B12, Vitamin D, and Choline. Can J Diet Pract Res. 2020 Jun 1;81(2):58-65. https://doi.org/10.3148/cjdpr-2019-025. Epub 2019 Sep 12. PMID: 31512510
- Mustapa Kamal Basha MA, Majid HA, Razali N, et al. Risk of eczema, wheezing and respiratory tract infections in the first year of life: A systematic review of vitamin D concentrations during pregnancy and at birth. PLoS One. 2020 Jun 15;15(6):e0233890. https://doi.org/10.1371/journal.pone.0233890. eCollection 2020. PMID: 32542014
- Nandi A, Wadhwani N, Randhir K, et al. Association of vitamin D with fatty acids in pregnancy. Prostaglandins Leukot Essent Fatty Acids. 2020 Jun;157:102030. https://doi.org/10.1016/j.plefa.2019.102030. Epub 2019 Nov 6. PMID: 31753523
- Nodler JL, DiVasta AD, Vitonis AF, et al. Supplementation with vitamin D or ω3 fatty acids in adolescent girls and young women with endometriosis (SAGE): a double-blind, randomized, placebo-controlled trial. Am J Clin Nutr. 2020 Jul 1;112(1):229-236. https://doi.org/10.1093/ajcn/nqaa096. PMID: 32453393 Clinical Trial.
- Osman OM, Gaafar T, Eissa TS, et al. Prevalence of vitamin D deficiency in Egyptian patients with pregnancy-induced hypertension. J Perinat Med. 2020 Jul 28;48(6):583-588. https://doi.org/10.1515/jpm-2020-0055. PMID: 32304313
- Ota K, Takahashi T, Han A, et al. Effects of MTHFR C677T polymorphism on vitamin D, homocysteine and natural killer cell cytotoxicity in women with recurrent pregnancy losses. Hum Reprod. 2020 Jun 1;35(6):1276-1287. https://doi.org/10.1093/humrep/deaa095. PMID: 32478379
- Perera OP, González-Leyva CP, González-Ludlow I, et al. Vitamin D Deficiency in Mexican Pregnant Women: Is Supplementation with ≤400 IU/day Enough? 2020 Aug 20;12(9):E2517. https://doi.org/10.3390/nu12092517. PMID: 32825265
- Qiu Y, Yuan S, Wang H. Vitamin D status in endometriosis: a systematic review and meta-analysis. Arch Gynecol Obstet. 2020 Jul;302(1):141-152. https://doi.org/10.1007/s00404-020-05576-5. Epub 2020 May 19. PMID: 32430755
- Rabbani S, Afaq S, Fazid S, et al. Correlation between maternal and neonatal blood Vitamin D level: Study from Pakistan. Matern Child Nutr. 2020 Aug 20:e13028. https://doi.org/10.1111/mcn.13028. Online ahead of print. PMID: 32815629
- Rasheedy R, Sammour H, Elkholy A, et al. The efficacy of vitamin D combined with clomiphene citrate in ovulation induction in overweight women with polycystic ovary syndrome: a double blind, randomized clinical trial. Endocrine. 2020 Aug;69(2):393-401. https://doi.org/10.1007/s12020-020-02315-3. Epub 2020 May 3. PMID: 32363556
- Ryan BA, Kovacs CS. Maternal and fetal vitamin D and their roles in mineral homeostasis and fetal bone development. J Endocrinol Invest. 2020 Aug 9. https://doi.org/10.1007/s40618-020-01387-2. Online ahead of print. PMID: 32772256 Review.
- Sadeghian M, Asadi M, Rahmani S, et al. Circulating vitamin D and the risk of gestational diabetes: a systematic review and dose-response meta-analysis. Endocrine. 2020 Jul 24. https://doi.org/10.1007/

s12020-020-02360-y. Online ahead of print. PMID: 32710437

- Saha S, Saha S. A comparison of the risk of cesarean section in gestational diabetes mellitus patients supplemented antenatally with vitamin D containing supplements versus placebo: A systematic review and meta-analysis of double-blinded randomized controlled trials. J Turk Ger Gynecol Assoc. 2020 Jun 10. https://doi.org/10.4274/jtgga.galenos.2020.2019.0164. Online ahead of print. PMID: 32517428
- Shahreza FD, Hajian M, Gharagozloo P, et al. Impact of vitamin D deficiency on mouse sperm structure and function. Andrology. 2020 Sep;8(5):1442-1455. https://doi.org/10.1111/andr.12820. Epub 2020 Jun 14. PMID: 32421931
- Shao B, Mo M, Xin X, et al. The interaction between prepregnancy BMI and gestational vitamin D deficiency on the risk of gestational diabetes mellitus subtypes with elevated fasting blood glucose. Clin Nutr. 2020 Jul;39(7):2265-2273. https://doi.org/10.1016/j.clnu.2019.10.015. Epub 2019 Oct 17. PMID: 31669001
- Shi XY, Yao J, Fan SM, et al. Effects of vitamin D supplementation on serum lipid profile in women with polycystic ovary syndrome: A protocol for a systematic review and meta-analysis. Medicine (Baltimore). 2020 Jun 5;99(23):e20621. https://doi.org/10.1097/MD.0000000000020621. PMID: 32502038
- Sibtain S, Sinha P, Manoharan M, et al. Controversies related to vitamin D deficiency effect on the maternal and feto-placental unit - an update. J Obstet Gynaecol. 2020 Aug;40(6):759-766. https://doi.org/10.1080/01443615.2019.1669012. Epub 2019 Dec 2. PMID: 31790615
- Stafne SN, Mørkved S, Gustafsson MK, et al. Vitamin D and stress urinary incontinence in pregnancy: a cross-sectional study. BJOG. 2020 Jun 1. https://doi.org/10.1111/1471-0528.16340. Online ahead of print. PMID: 32479701
- Subramanian A, Korsiak J, Murphy KE, et al. Effect of vitamin D supplementation during pregnancy on mid-to-late gestational blood pressure in a randomized controlled trial in Bangladesh. J Hypertens. 2020 Aug 10. https://doi.org/10.1097/HJH.0000000000002609. Online ahead of print. PMID: 32773651
- Swenson CW, Schimpf MO, Menees SB, et al. Comparison of Serum Vitamin D Levels in Relation to Bowel and Bladder Symptoms in Women with Vulvar Diseases. Int J Vitam Nutr Res. 2020 Jun;90(3-4):266-272. https://doi.org/10.1024/0300-9831/a000527. Epub 2019 Feb 12. PMID: 30747611
- Thippeswamy HM, Devananda D, Nanditha Kumar M, et al. The association of fluoride in drinking water with serum calcium, vitamin D and parathyroid hormone in pregnant women and newborn infants. Eur J Clin Nutr. 2020 Aug 19. https://doi.org/10.1038/s41430-020-00707-2. Online ahead of print. PMID: 32814853
- Vivanti AJ, Monier I, Salakos E, et al. Vitamin D and pregnancy outcomes: Overall results of the FEPED study. J Gynecol Obstet Hum Reprod. 2020 Jul 27:101883. https://doi.org/10.1016/j.jogoh.2020.101883. Online ahead of print. PMID: 32730862 Review.
- Wierzejska R, Jarosz M, Bachanek M, et al. Gestational vitamin D concentration and other risk factors versus fetal femur length. J Matern Fetal Neonatal Med. 2020 Jun;33(12):2012-2016. https://doi.org/10.1080/14767058.2018.1536118 . Epub 2018 Dec 20. PMID: 30309281
- Williams A, Babu JR, Wadsworth DD, et al. The Effects of Vitamin D on Metabolic Profiles in Women with Polycystic Ovary Syndrome: A Systematic Review. Horm Metab Res. 2020 Jul;52(7):485-491. https://doi.org/10.1055/a-1160-9902. Epub 2020 May 18. PMID: 32422661
- Wilson RL, Phillips JA, Bianco-Miotto T, et al. Reduced Dietary Calcium and Vitamin D Results in Preterm Birth and Altered Placental Morphogenesis in Mice During Pregnancy. Reprod Sci. 2020 Jun;27(6):1330-1339. https://doi.org/10.1007/s43032-019-00116-2. Epub 2020 Jan 1. PMID: 32046423
- Woo J, Koenig MD, Engeland CG, et al. Neighborhood disorder predicts lower serum vitamin D levels in pregnant African American women: A pilot study. J Steroid Biochem Mol Biol. 2020 Jun;200:105648. https://doi.org/10.1016/j.jsbmb.2020.105648. Epub 2020 Mar 3. PMID: 32142935
- Woon FC, Chin YS, Ismail IH, et al. Maternal Vitamin D Levels during Late Pregnancy and Risk of Allergic Diseases and Sensitization during the First Year of Life-A Birth Cohort Study. Nutrients. 2020 Aug 12;12(8):E2418. https://doi.org/10.3390/nu12082418. PMID: 32806653
- Xue J, Hutchins EK, Elnagheeb M, et al. Maternal Liver Metabolic Response to Chronic Vitamin D Deficiency Is Determined by Mouse Strain Genetic Background. Curr Dev Nutr. 2020 Jun 20;4(8):nzaa106. https://doi.org/10.1093/cdn/nzaa106. eCollection 2020 Aug. PMID: 32851199
- Zeng S, Cheng X, Chen R, et al. Low Level of Vitamin D is a Risk Factor for the Occurrence of Early and Late Onset Pre-Eclampsia in Pregnant Women. Clin Lab. 2020 Jun 1;66(6). https://doi.org/10.7754/Clin.Lab.2019.191022. PMID: 32538062
- Zhou P, Tong X. Maternal High-Dose Vitamin D Supplementation and Offspring Bone Mineralization Until Age 6 Years. JAMA Pediatr. 2020 Aug 10. https://doi.org/10.1001/jamapediatrics.2020.2008. Online ahead of print. PMID: 32777020

IMMUNOLOGIA

- Abhimanyu, Meyer V, Jones BR, et al. Autophagy efficacy and vitamin D status: Population effects. Cell Immunol. 2020 Jun;352:104082. https://doi.org/10.1016/j.cellimm.2020.104082. Epub 2020 Feb 28. PMID: 32241530
- Akimbekov NS, Ortoski RA, Razzaque MS. Effects of sunlight exposure and vitamin D supplementation on HIV patients. J Steroid Biochem Mol Biol. 2020 Jun;200:105664. https://doi.org/10.1016/j.jsbmb.2020.105664. Epub 2020 Mar 27. PMID: 32229174 Review.
- Al-Amad SH, Hasan H. Vitamin D and hematinic deficiencies in patients with recurrent aphthous stomatitis. Clin Oral Investig. 2020 Jul;24(7):2427-2432. https://doi.org/10.1007/s00784-019-03102-9. Epub 2019 Nov 3. PMID: 31680206
- Allison LN, Jaffey JA, Bradley-Siemens N, et al. Immune function and serum vitamin D in shelter dogs: A case-control study. Vet J. 2020 Jul;261:105477. https://doi.

org/10.1016/j.tvjl.2020.105477. Epub 2020 Jun 3. PMID: 32741494

- Almeida Moreira Leal LK, Lima LA, Alexandre de Aquino PE, et al. Vitamin D (VD3) antioxidative and anti-inflammatory activities: Peripheral and central effects. Eur J Pharmacol. 2020 Jul 15;879:173099. https://doi.org/10.1016/j.ejphar.2020.173099. Epub 2020 Apr 28. PMID: 32360837
- Apple CG, Miller ES, Kannan KB, et al. VITAMIN D STATUS IS ASSOCIATED WITH HEPCIDIN AND HEMOGLOBIN CONCENTRATIONS IN PATIENTS WITH SEVERE TRAUMATIC INJURY. J Trauma Acute Care Surg. 2020 Jul 28. https://doi.org/10.1097/TA.0000000000002895. Online ahead of print. PMID: 32769953
- Bayirli BA, Öztürk A, Avci B. Serum vitamin D concentration is associated with antimicrobial peptide level in periodontal diseases. Arch Oral Biol. 2020 Sep;117:104827. https://doi.org/10.1016/j.archoralbio.2020.104827. Epub 2020 Jul 9. PMID: 32673820
- Behera CK, Sahoo JP, Patra SD, et al. Is Lower Vitamin D Level Associated with Increased Risk of Neonatal Sepsis? A Prospective Cohort Study. Indian J Pediatr. 2020 Jun;87(6):427-432. https://doi.org/10.1007/s12098-020-03188-0. Epub 2020 Feb 13. PMID: 32056191
- Behm C, Blufstein A, Gahn J, et al. Pleiotropic effects of vitamin D(3) on CD4(+) T lymphocytes mediated by human periodontal ligament cells and inflammatory environment. J Clin Periodontol. 2020 Jun;47(6):689-701. https://doi.org/10.1111/jcpe.13283. Epub 2020 Apr 13. PMID: 32160330
- Carbone T, Pafundi V, Bizzaro N, et al. Assessing vitamin D levels in an anti-DFS70 positive population: New insights emerging. Autoimmunity. 2020 Jun;53(4):231-236. https://doi.org/10.1080/08916934.2020.1736048. Epub 2020 Mar 13. PMID: 32164458
- Chandrakar AK, Alexander A, R M, et al. 25-Hydroxyl Vitamin D Deficiency in Nasal Polyposis. Int Arch Otorhinolaryngol. 2020 Jul;24(3):e308-e312. https://doi.org/10.1055/s-0039-3399541. Epub 2019 Dec 13. PMID: 32754241
- Charoenngam N, Holick MF. Immunologic Effects of Vitamin D on Human Health and Disease. Nutrients. 2020 Jul 15;12(7):2097. https://doi.org/10.3390/nu12072097. PMID: 32679784
- Cheng C, Pan W, Li X, et al. Clinical effect of vitamin D supplementation on patients with pulmonary tuberculosis and its influence on the expression of immune cells and inflammatory factors. Exp Ther Med. 2020 Sep;20(3):2236-2244. https://doi.org/10.3892/etm.2020.8957. Epub 2020 Jun 29. PMID: 32765700
- Cheng K, Ma C, Guo X, et al. Vitamin D(3) modulates yellow catfish (Pelteobagrus fulvidraco) immune function in vivo and in vitro and this involves the vitamin D(3)/VDR-type I interferon axis. Dev Comp Immunol. 2020 Jun;107:103644. https://doi.org/10.1016/j.dci.2020.103644. Epub 2020 Feb 18. PMID: 32061641
- Clarke J, Yaqubi M, Futhey NC, et al. Vitamin D Regulates MerTK-Dependent Phagocytosis in Human Myeloid Cells. J Immunol. 2020 Jul 15;205(2):398-406. https://doi.org/10.4049/jimmunol.2000129. Epub 2020 Jun 15. PMID: 32540991
- Crutchley RD, Jacobs DM, Gathe J, et al. Assessing changes in vitamin D over 48 weeks in treatment-naïve HIV individuals starting lopinavir/ritonavir monotherapy. Curr HIV Res. 2020 Aug 27. https://doi.org/10.2174/1570162X18666200827115615. Online ahead of print. PMID: 32860360
- Ganmaa D, Uyanga B, Zhou X, et al. Vitamin D Supplements for Prevention of Tuberculosis Infection and Disease. N Engl J Med. 2020 Jul 23;383(4):359-368. https://doi.org/10.1056/NEJMoa1915176. PMID: 32706534 Clinical Trial.
- Gao W, Tang H, Wang D, et al. Effect of short-term vitamin D supplementation after nonsurgical periodontal treatment: A randomized, double-masked, placebo-controlled clinical trial. J Periodontal Res. 2020 Jun;55(3):354-362. https://doi.org/10.1111/jre.12719. Epub 2020 Jan 20. PMID: 31960448
- Gisbert-Ferrándiz L, Cosin-Roger J, Hernández C, et al. The vitamin D receptor Taq I polymorphism is associated with reduced VDR and increased PDIA3 protein levels in human intestinal fibroblasts. J Steroid Biochem Mol Biol. 2020 Jun 18;202:105720. https://doi.org/10.1016/j.jsbmb.2020.105720. Online ahead of print. PMID: 32565249
- Hayashi H, Okamatsu M, Ogasawara H, et al. Oral Supplementation of the Vitamin D Metabolite 25(OH)D(3) Against Influenza Virus Infection in Mice. Nutrients. 2020 Jul 5;12(7):2000. https://doi.org/10.3390/nu12072000. PMID: 32635656
- Heine G, Francuzik W, Doelle-Bierke S, et al. Immunomodulation of high-dose vitamin D supplementation during allergen specific immunotherapy. Allergy. 2020 Aug 4. https://doi.org/10.1111/all.14541. Online ahead of print. PMID: 32750735
- Hu S, Dai J, Chen X. Vitamin D reduces autophagy by regulating NF-κB resistance to Aspergillus fumigatus infection. Gene. 2020 Aug 30;753:144819. https://doi.org/10.1016/j.gene.2020.144819. Epub 2020 May 30. PMID: 32485309
- Hu W, Zhang L, Wu WKK, et al. Involvement of autophagy in antibacterial actions of vitamin D in Helicobacter pylori infection: abridged secondary publication. Hong Kong Med J. 2020 Jun;26 Suppl 4(3):26-28. PMID: 32690815
- Jaime J, Vargas-Bermúdez DS, Yitbarek A, et al. Differential immunomodulatory effect of vitamin D (1,25 (OH)(2) D(3)) on the innate immune response in different types of cells infected in vitro with infectious bursal disease virus. Poult Sci. 2020 Sep;99(9):4265-4277. https://doi.org/10.1016/j.psj.2020.06.006. Epub 2020 Jun 23. PMID: 32867971
- Jaratsittisin J, Xu B, Sornjai W, et al. Activity of vitamin D receptor agonists against dengue virus. Sci Rep. 2020 Jul 2;10(1):10835. https://doi.org/10.1038/s41598-020-67783-z. PMID: 32616772
- Kiourtzidis M, Kühn J, Brandsch C, et al. Vitamin D Status of Mice Deficient in Scavenger Receptor Class B Type 1, Cluster Determinant 36 and ATP-Binding Cassette Proteins G5/G8. Nutrients. 2020 Jul 22;12(8):E2169. https://doi.org/10.3390/nu12082169. PMID: 32707802
- Lee S, Lee JE, Lee SO, et al. Influence of

Vitamin D Deficiency on the Development of Opportunistic Infection in People Living with HIV/AIDS (PWHAs). J Am Coll Nutr. 2020 Aug 13:1-6. https://doi.org/10.1080/07315724.2020.1805043. Online ahead of print. PMID: 32790581

- Leffler J, Gamez C, Jones AP, et al. In infants with sufficient vitamin D status at birth, vitamin D supplementation does not impact immune development. Pediatr Allergy Immunol. 2020 Aug;31(6):686-694. https://doi.org/10.1111/pai.13250. Epub 2020 May 3. PMID: 32248591
- Legitimo A, Bertini V, Costagliola G, et al. Vitamin D status and the immune assessment in 22q11.2 deletion syndrome. Clin Exp Immunol. 2020 Jun;200(3):272-286. https://doi.org/10.1111/cei.13429. Epub 2020 Apr 16. PMID: 32149392
- Li YP, Deng HL, Wang WJ, et al. Vitamin D receptor gene methylation in patients with hand, foot, and mouth disease caused by enterovirus 71. Arch Virol. 2020 Sep;165(9):1979-1985. https://doi.org/10.1007/s00705-020-04701-8. Epub 2020 Jun 18. PMID: 32556549
- Lu R, Shang M, Zhang YG, et al. Lactic Acid Bacteria Isolated From Korean Kimchi Activate the Vitamin D Receptor-autophagy Signaling Pathways. Inflamm Bowel Dis. 2020 Jul 17;26(8):1199-1211. https://doi.org/10.1093/ibd/izaa049. PMID: 32170938
- Machado V, Lobo S, Proença L, et al. Vitamin D and Periodontitis: A Systematic Review and Meta-Analysis. Nutrients. 2020 Jul 22;12(8):E2177. https://doi.org/10.3390/nu12082177. PMID: 32708032
- Maloney SR, Goolkasian P. Low Vitamin D States Observed in U.S. Marines and Navy Sailors with Early Multi-Symptom Illness. Biomolecules. 2020 Jul 11;10(7):1032. https://doi.org/10.3390/biom10071032. PMID: 32664492
- Maruthai K, Sankar S, Subramanian M. Methylation Status of VDR Gene and its Association with Vitamin D Status and VDR Gene Expression in Pediatric Tuberculosis Disease. Immunol Invest. 2020 Aug 26:1-16. https://doi.org/10.1080/08820139.2020.1810702. Online ahead of print. PMID: 32847384
- Mirza AA, Alharbi AA, Marzouki H, et al. The Association Between Vitamin D Deficiency and Recurrent Tonsillitis: A Systematic Review and Meta-analysis. Otolaryngol Head Neck Surg. 2020 Jul 21:194599820935442. https://doi.org/10.1177/0194599820935442. Online ahead of print. PMID: 32689892
- Nalbantoğlu B, Nalbantoğlu A. Vitamin D Levels in Children With Recurrent Aphthous Stomatitis. Ear Nose Throat J. 2020 Aug;99(7):460-463. https://doi.org/10.1177/0145561319882783. Epub 2019 Oct 20. PMID: 31631677
- Nikooyeh B, Hollis BW, Neyestani TR. Modulating effect of vitamin D status on serum anti-adenovirus 36 antibody amount in children with obesity: National Food and Nutrition Surveillance. BMC Pediatr. 2020 Jun 27;20(1):316. https://doi.org/10.1186/s12887-020-02216-4. PMID: 32593301
- Patel JJ, McClave SA. Use of Vitamin D in Critical Illness: A Concept for Whom the Bell Tolls. JPEN J Parenter Enteral Nutr. 2020 Jun 23. https://doi.org/10.1002/jpen.1946. Online ahead of print. PMID: 32573805
- Reuter A, Furin J. The problem with vitamin D supplementation for tuberculosis. Lancet HIV. 2020 Jul;7(7):e450-e451. https://doi.org/10.1016/S2352-3018(20)30114-4. PMID: 32621871
- Shang S, Wu J, Li X, et al. Artesunate interacts with the vitamin D receptor to reverse sepsis-induced immunosuppression in a mouse model via enhancing autophagy. Br J Pharmacol. 2020 Sep;177(18):4147-4165. https://doi.org/10.1111/bph.15158. Epub 2020 Jul 6. PMID: 32520399
- Shin YH, Ha EK, Kim JH, et al. Serum vitamin D level is associated with smell dysfunction independently of aeroallergen sensitization, nasal obstruction, and the presence of allergic rhinitis in children. Pediatr Allergy Immunol. 2020 Aug 25. https://doi.org/10.1111/pai.13341. Online ahead of print. PMID: 32841423
- Silva LLL, Gomes RS, Silva MVT, et al. IL-15 enhances the capacity of primary human macrophages to control Leishmania braziliensis infection by IL-32/vitamin D dependent and independent pathways. Parasitol Int. 2020 Jun;76:102097. https://doi.org/10.1016/j.parint.2020.102097. Epub 2020 Feb 27. PMID: 32114085
- Singh M, Vaughn C, Sasaninia K, et al. Understanding the Relationship between Glutathione, TGF-β, and Vitamin D in Combating Mycobacterium tuberculosis Infections. J Clin Med. 2020 Aug 26;9(9):E2757. https://doi.org/10.3390/jcm9092757. PMID: 32858837 Free article. Review.
- Tindall AM, Schall JI, Seme B, et al. Vitamin D status, nutrition and growth in HIV-infected mothers and HIV-exposed infants and children in Botswana. PLoS One. 2020 Aug 13;15(8):e0236510. https://doi.org/10.1371/journal.pone.0236510. eCollection 2020. PMID: 32790765
- Wang G, Li Y, Li Y, et al. Maternal vitamin D supplementation inhibits bisphenol A-induced proliferation of Th17 cells in adult offspring. Food Chem Toxicol. 2020 Jul 20;144:111604. https://doi.org/10.1016/j.fct.2020.111604. Online ahead of print. PMID: 32702508
- Wang Y, Yang Z, Gao L, et al. Effects of a single dose of vitamin D in septic children: a randomized, double-blinded, controlled trial. J Int Med Res. 2020 Jun;48(6):300060520926890. https://doi.org/10.1177/0300060520926890. PMID: 32485124
- Xiao D, Zhang X, Ying J, et al. Association between vitamin D status and sepsis in children: A meta-analysis of observational studies. Clin Nutr. 2020 Jun;39(6):1735-1741. https://doi.org/10.1016/j.clnu.2019.08.010. Epub 2019 Aug 27. PMID: 31495735
- Yoo JW, Jung YK, Ju S, et al. Serum vitamin D binding protein level, but not serum total, bioavailable, free vitamin D, is higher in 30-days survivors than in nonsurvivors with sepsis. Medicine (Baltimore). 2020 Jun 19;99(25):e20756. https://doi.org/10.1097/MD.0000000000020756. PMID: 32569219
- Zhao JW, Ping JD, Wang YF, et al. Vitamin D suppress the production of vascular endothelial growth factor in mast cell by inhibiting PI3K/Akt/p38 MAPK/HIF-1α pathway in chronic spontaneous urticaria. Clin Immunol. 2020 Jun;215:108444. https://

doi.org/10.1016/j.clim.2020.108444. Epub 2020 Apr 25. PMID: 32339669

LABORATORIO

- Benton SC, Tetteh GK, Needham SJ, et al. Evaluation of the 25-hydroxy vitamin D assay on a fully automated liquid chromatography mass spectrometry system, the Thermo Scientific Cascadion SM Clinical Analyzer with the Cascadion 25-hydroxy vitamin D assay in a routine clinical laboratory. Clin Chem Lab Med. 2020 Jun 25;58(6):1010-1017. https://doi.org/10.1515/cclm-2019-0834. PMID: 31851610
- Chen X, Sun S, Liu Q, et al. A Rapid Chemiluminescence Immunoassay for Total Vitamin D Status Assessment in Fingertip Blood. Clin Lab. 2020 Aug 1;66(8). https://doi.org/10.7754/Clin.Lab.2020.191034. PMID: 32776736
- Fernández S, Ferrero M. Strategies for the Synthesis of 19-nor-Vitamin D Analogs. Pharmaceuticals (Basel). 2020 Jul 22;13(8):E159. https://doi.org/10.3390/ph13080159. PMID: 32707946 Free article. Review.
- Goodroe AE, Fitz C, Power ML, et al. Evaluation of vitamin D(3) metabolites in Callithrix jacchus (common marmoset). Am J Primatol. 2020 Jun;82(6):e23131. https://doi.org/10.1002/ajp.23131. Epub 2020 Apr 9. PMID: 32270886
- Jayaraj JM, Reteti E, Kesavan C, et al. Structural insights on vitamin D receptor and screening of new potent agonist molecules: structure and ligand-based approach. J Biomol Struct Dyn. 2020 Jun 11:1-12. https://doi.org/10.1080/07391102.2020.1775122. Online ahead of print. PMID: 32462983
- Makris K, Sempos C, Cavalier E. et al. The measurement of vitamin D metabolites part II-the measurement of the various vitamin D metabolites. Hormones (Athens). 2020 Jun;19(2):97-107. https://doi.org/10.1007/s42000-020-00188-9. Epub 2020 Mar 27. PMID: 32221839 Review.
- Makris K, Sempos C, Cavalier E. The measurement of vitamin D metabolites: part I-metabolism of vitamin D and the measurement of 25-hydroxyvitamin D. Hormones (Athens). 2020 Jun;19(2):81-96. https://doi.org/10.1007/s42000-019-00169-7. Epub 2020 Jan 9. PMID: 31919677 Review.
- Masuda A, Gohda K, Iguchi Y, et al. N(1)-Substituted benzimidazole scaffold for farnesoid X receptor (FXR) agonists accompanying prominent selectivity against vitamin D receptor (VDR). Bioorg Med Chem. 2020 Jul 15;28(14):115512. https://doi.org/10.1016/j.bmc.2020.115512. Epub 2020 May 23. PMID: 32616182
- Rahman A, Al-Taiar A, Shaban L, et al. The routine chemiluminescence assay for plasma 25-hydroxyvitamin D analysis does not overestimate the prevalence of vitamin D deficiency in adolescents. Nutr Res. 2020 Jul;79:60-67. https://doi.org/10.1016/j.nutres.2020.05.013. Epub 2020 May 27. PMID: 32610258
- Rivera-Paredez B, Hidalgo-Bravo A, de la Cruz-Montoya A, et al. Association between vitamin D deficiency and common variants of Vitamin D binding protein gene among Mexican Mestizo and indigenous postmenopausal women. J Endocrinol Invest. 2020 Jul;43(7):935-946. https://doi.org/10.1007/s40618-019-01177-5. Epub 2020 Jan 6. PMID: 31907821
- Rola R, Kowalski K, Bieńkowski T, et al. Improved sample preparation method for fast LC-MS/MS analysis of vitamin D metabolites in serum. J Pharm Biomed Anal. 2020 Aug 9;190:113529. https://doi.org/10.1016/j.jpba.2020.113529. Online ahead of print. PMID: 32841780
- Shurpik DN, Aleksandrova YI, Zelenikhin PV, et al. Towards new nanoporous biomaterials: self-assembly of sulfopillar[5]arenes with vitamin D(3) into supramolecular polymers. Org Biomol Chem. 2020 Jun 10;18(22):4210-4216. https://doi.org/10.1039/d0ob00411a. PMID: 32250381
- Wu Z, Camargo CA Jr, Reid IR, et al. What factors modify the effect of monthly bolus dose vitamin D supplementation on 25-hydroxyvitamin D concentrations? J Steroid Biochem Mol Biol. 2020 Jul;201:105687. https://doi.org/10.1016/j.jsbmb.2020.105687. Epub 2020 Apr 30. PMID: 32360596
- Yadav DK, Kumar S, Teli MK, et al. Ligand-based pharmacophore modeling and docking studies on vitamin D receptor inhibitors. J Cell Biochem. 2020 Jul;121(7):3570-3583. https://doi.org/10.1002/jcb.29640. Epub 2020 Jan 6. PMID: 31904142

MISCELLANEA

- Aguiar M, Högler W. Prevention of vitamin D deficiency improves population health, social inequalities and health care budgets. Eur J Public Health. 2020 Jun 1;30(3):392-393. https://doi.org/10.1093/eurpub/ckz207. PMID: 32531037
- Al Anouti F, Pludowski P, White JH. Highlights from the Abu Dhabi International Conference on Vitamin D Deficiency and Human Health, "Health Consequences of Vitamin D Deficiency and Treatment", United Arab Emirates, March 14-15, 2019. J Steroid Biochem Mol Biol. 2020 Jun;200:105653. https://doi.org/10.1016/j.jsbmb.2020.105653. Epub 2020 Mar 9. PMID: 32165311
- Asghari G, Farhadnejad H, Mirmiran P. A systematic review and meta-analysis of the response of serum 25-hydroxyvitamin D concentration to vitamin D supplementation from RCTs from around the globe. Eur J Clin Nutr. 2020 Aug 19. https://doi.org/10.1038/s41430-020-00723-2. Online ahead of print. PMID: 32814857
- Aslan MG, Fındık H, Okutucu M, et al. Serum 25-Hydroxy Vitamin D, Vitamin B12, and Folic Acid Levels in Progressive and Non-progressive Keratoconus. Cornea. 2020 Aug 24. https://doi.org/10.1097/ICO.0000000000002475. Online ahead of print. PMID: 32833845
- Assimos DG. Re: Safety of High-Dose Vitamin D Supplementation: Secondary Analysis of a Randomized Controlled Trial. J Urol. 2020 Jun;203(6):1056. https://doi.org/10.1097/JU.0000000000000997. Epub 2020 Mar 10. PMID: 32155372
- Badger-Emeka LI, AlJaziri ZY, Almulhim CF, et al. Vitamin D Supplementation in Laboratory-Bred Mice: An In Vivo Assay on Gut Microbiome and Body Weight. Microbiol Insights. 2020 Jul 28;13:1178636120945294. https://doi.org/10.1177/1178636120945294. eCollection 2020. PMID: 32782431
- Bakos B, Szili B, Szabó B, et al. Genetic variants of VDR and CYP2R1 affect BMI independently of serum vitamin

D concentrations. BMC Med Genet. 2020 Jun 13;21(1):129. https://doi.org/10.1186/s12881-020-01065-3. PMID: 32534577

- Bauer JM, Mikušová L, Verlaan S, et al. Safety and tolerability of 6-month supplementation with a vitamin D, calcium and leucine-enriched whey protein medical nutrition drink in sarcopenic older adults. Aging Clin Exp Res. 2020 Aug;32(8):1501-1514. https://doi.org/10.1007/s40520-020-01519-x. Epub 2020 Mar 12. PMID: 32162241
- Beckett E. More Than Bone Health: The Many Roles for Vitamin D. Nutrients. 2020 Aug 10;12(8):E2388. https://doi.org/10.3390/nu12082388. PMID: 32785003
- Bouillon R. In memoriam: AW Norman, the founding father of the vitamin D workshops. J Steroid Biochem Mol Biol. 2020 Jun;200:105610. https://doi.org/10.1016/j.jsbmb.2020.105610. Epub 2020 Jan 30. PMID: 32475813
- Buttriss JL, Lanham-New SA. Is a vitamin D fortification strategy needed? Nutr Bull. 2020 Jun;45(2):115-122. https://doi.org/10.1111/nbu.12430. Epub 2020 May 18. PMID: 32536809
- Cashman KD, Kiely ME, Andersen R, et al. Individual participant data (IPD)-level meta-analysis of randomised controlled trials with vitamin D-fortified foods to estimate Dietary Reference Values for vitamin D. Eur J Nutr. 2020 Jun 15. https://doi.org/10.1007/s00394-020-02298-x. Online ahead of print. PMID: 32556447
- Cashman KD, O'Sullivan SM, Galvin K, et al. Contribution of Vitamin D(2) and D(3) and Their Respective 25-Hydroxy Metabolites to the Total Vitamin D Content of Beef and Lamb. Curr Dev Nutr. 2020 Jun 30;4(7):nzaa112. https://doi.org/10.1093/cdn/nzaa112. eCollection 2020 Jul. PMID: 32704612
- Casselbrant A, Fändriks L, Wallenius V. Glycocholic acid and butyrate synergistically increase vitamin D-induced calcium uptake in Caco-2 intestinal epithelial cell monolayers. Bone Rep. 2020 Jul 3;13:100294. https://doi.org/10.1016/j.bonr.2020.100294. eCollection 2020 Dec. PMID: 32715032
- Chalcraft JR, Cardinal LM, Wechsler PJ, et al. Vitamin D Synthesis Following a Single Bout of Sun Exposure in Older and Younger Men and Women. Nutrients. 2020 Jul 27;12(8):E2237. https://doi.org/10.3390/nu12082237. PMID: 32727044
- Cornfield DN. Vitamin D: Feel It in More Than Just Your Bones! Am J Respir Cell Mol Biol. 2020 Jul;63(1):11-12. https://doi.org/10.1165/rcmb.2020-0072ED. PMID: 32160008
- Deb S, Reeves AA, Lafortune S. Simulation of Physicochemical and Pharmacokinetic Properties of Vitamin D(3) and Its Natural Derivatives. Pharmaceuticals (Basel). 2020 Jul 23;13(8):E160. https://doi.org/10.3390/ph13080160. PMID: 32717896
- de Paula ALT, Gonzaga WPF, Oliveira LM, et al. Exogenous intoxication by non-prescribed use of vitamin D, a case report. BMC Geriatr. 2020 Jun 24;20(1):221. https://doi.org/10.1186/s12877-020-01614-8. PMID: 32580697
- Dikci S, Akatlı AN, Yıldırım T. Conjunctival impression cytology and tear-film changes in cases with vitamin D deficiency. Int Ophthalmol. 2020 Jul;40(7):1687-1694. https://doi.org/10.1007/s10792-020-01336-1. Epub 2020 Mar 23. PMID: 32207046
- Di Luigi L, Antinozzi C, Piantanida E, et al. Vitamin D, sport and health: a still unresolved clinical issue. J Endocrinol Invest. 2020 Jul 6. https://doi.org/10.1007/s40618-020-01347-w. Online ahead of print. PMID: 32632904 Review.
- Dunlop E, Kiely M, James AP, et al. The efficacy of vitamin D food fortification and bio-fortification in children and adults: a systematic review protocol. JBI Evid Synth. 2020 Jul 23. https://doi.org/10.11124/JBISRIR-D-19-00373. Online ahead of print. PMID: 32740028
- Fatemi SA, Elliott KEC, Bello A, et al. Effects of source and level of in ovo-injected vitamin D(3) on the hatchability and serum 25-hydroxycholecalciferol concentrations of Ross 708 broilers. Poult Sci. 2020 Aug;99(8):3877-3884. https://doi.org/10.1016/j.psj.2020.04.030. Epub 2020 Jun 16. PMID: 32731974
- Ferreira A, Silva N, Furtado MJ, et al. Serum vitamin D and age-related macular degeneration: systematic review and meta-analysis. Surv Ophthalmol. 2020 Aug 5:S0039-6257(20)30123-5. https://doi.org/10.1016/j.survophthal.2020.07.003. Online ahead of print. PMID: 32768420 Review.
- Fiala C, Pasic MD. The Case against Vitamin D Supplementation in Healthy Adults. J Appl Lab Med. 2020 Jun 12:jfaa075. https://doi.org/10.1093/jalm/jfaa075. Online ahead of print. PMID: 32529248
- Fleet JC, Bernal-Mizrachi C, Hewison M, et al. Highlights from the 22nd workshop on vitamin D in New York City, May 2019. J Steroid Biochem Mol Biol. 2020 Aug 25;203:105747. https://doi.org/10.1016/j.jsbmb.2020.105747. Online ahead of print. PMID: 32858157
- Gallotti F, Lavelli V. The Effect of UV Irradiation on Vitamin D(2) Content and Antioxidant and Antiglycation Activities of Mushrooms. Foods. 2020 Aug 10;9(8):E1087. https://doi.org/10.3390/foods9081087. PMID: 32784944
- Gonel A, Kirhan I, Koyuncu I, et al. The Role of Interferences in the Increasing Incidence of Vitamin D Deficiency. Endocr Metab Immune Disord Drug Targets. 2020 Jun 4. https://doi.org/10.2174/1871530320666200604160208. Online ahead of print. PMID: 32496995
- Haq A, Hasnain SE, Razzaque MS. Diverse functions of vitamin D in health and disease. J Steroid Biochem Mol Biol. 2020 Jun;200:105668. https://doi.org/10.1016/j.jsbmb.2020.105668. Epub 2020 Apr 4. PMID: 32259571
- Huynh B, Shah P, Sii F, et al. Low systemic vitamin D as a potential risk factor in primary open-angle glaucoma: a review of current evidence. Br J Ophthalmol. 2020 Jun 30:bjophthalmol-2020-316331. https://doi.org/10.1136/bjophthalmol-2020-316331. Online ahead of print. PMID: 32606080 Review.
- Ibrahim MKM, Elnimeiri MKM. Non-classical presentation of vitamin D deficiency: a case report. J Med Case Rep. 2020 Aug 10;14(1):126. https://doi.org/10.1186/s13256-020-02454-1. PMID: 32772912

- Karaca EE, Kemer ÖE, Özek D, et al. Clinical outcomes of ocular surface in patients treated with vitamin D oral replacement. Arq Bras Oftalmol. 2020 Aug;83(4):312-317. https://doi.org/10.5935/0004-2749.20200043. Epub 2020 Jul 29. PMID: 32756790
- Karaer I, Akalın Y. Low vitamin B12 level and vitamin D level adversely affect on cochlear health in women. Int J Vitam Nutr Res. 2020 Jun;90(3-4):333-338. https://doi.org/10.1024/0300-9831/a000616. Epub 2019 Oct 18. PMID: 31623529
- Kerperien J, Veening-Griffioen D, Oja A, et al. Dietary Vitamin D Supplementation Is Ineffective in Preventing Murine Cow's Milk Allergy, Irrespective of the Presence of Non-digestible Oligosaccharides. Int Arch Allergy Immunol. 2020 Aug 19:1-11. https://doi.org/10.1159/000509750. Online ahead of print. PMID: 32814335
- Khan WA, Butt MS, Pasha I, et al. Bioavailability, rheology and sensory evaluation of mayonnaise fortified with vitamin D encapsulated in protein-based carriers. J Texture Stud. 2020 Aug 15. https://doi.org/10.1111/jtxs.12555. Online ahead of print. PMID: 32799340
- Kimball SM, Holick MF. Official recommendations for vitamin D through the life stages in developed countries. Eur J Clin Nutr. 2020 Aug 20. https://doi.org/10.1038/s41430-020-00706-3. Online ahead of print. PMID: 32820241 Review.
- Kujach S, Lyzwinski D, Chroboczek M, et al. The Effect of Vitamin D(3) Supplementation on Physical Capacity among Active College-Aged Males. Nutrients. 2020 Jun 30;12(7):1936. https://doi.org/10.3390/nu12071936. PMID: 32629757
- Lamsen MRL, Wang T, D'Souza D, et al. Encapsulation of vitamin D(3) in gum arabic to enhance bioavailability and stability for beverage applications. J Food Sci. 2020 Jul 20. https://doi.org/10.1111/1750-3841.15340. Online ahead of print. PMID: 32691454
- Lan SH, Lai CC, Chang SP, et al. Vitamin D supplementation and the outcomes of critically ill adult patients: a systematic review and meta-analysis of randomized controlled trials. Sci Rep. 2020 Aug 31;10(1):14261. https://doi.org/10.1038/s41598-020-71271-9. PMID: 32868842
- LeClair BM, Si C, Solomon J. Vitamin D Supplementation and All-Cause Mortality. Am Fam Physician. 2020 Jul 1;102(1):Online. PMID: 32603077
- Lindahl IEI, Danielsen M, Dalsgaard TK, et al. Milk protein complexation enhances post prandial vitamin D(3) absorption in rats. Food Funct. 2020 Jun 24;11(6):4953-4959. https://doi.org/10.1039/d0fo01062f. PMID: 32500128
- Ljubic A, Jacobsen C, Holdt SL, et al. Microalgae Nannochloropsis oceanica as a future new natural source of vitamin D(3). Food Chem. 2020 Aug 1;320:126627. https://doi.org/10.1016/j.foodchem.2020.126627. Epub 2020 Mar 19. PMID: 32213421
- Long W, Fatehi M, Soni S, et al. Vitamin D is an endogenous partial agonist of the transient receptor potential vanilloid 1 channel. J Physiol. 2020 Jul 28. https://doi.org/10.1113/JP279961. Online ahead of print. PMID: 32721035
- Ma SW, Ende JA, Alvarado R, et al. Topical Vitamin D May Modulate Human Sinonasal Mucosal Responses to House Dust Mite Antigen. Am J Rhinol Allergy. 2020 Jul;34(4):471-481. https://doi.org/10.1177/1945892420905432. Epub 2020 Feb 11. PMID: 32046501
- McCourt A, McNulty BA, Walton J, et al. Corrigendum to 'Efficacy and safety of food fortification to improve Vitamin D intakes of older adults' [Nutrition 75-76 (2020)]. Nutrition. 2020 Jul-Aug;75-76:110837. https://doi.org/10.1016/j.nut.2020.110837. Epub 2020 May 18. PMID: 32434686
- McCourt A, McNulty BA, Walton J, et al. Efficacy and safety of food fortification to improve vitamin D intakes of older adults. Nutrition. 2020 Jul-Aug;75-76:110767. https://doi.org/10.1016/j.nut.2020.110767. Epub 2020 Feb 14. PMID: 32248053
- Mehrdad M, Vahid F, Eftekhari MH. Nutritional Quality's Key Role in the Odds of Overweight in Adults with rs9939609 Polymorphism of FTO Gene- the Role of Manganese and Vitamin D. Am J Med Sci. 2020 Jun 27:S0002-9629(20)30286-X. https://doi.org/10.1016/j.amjms.2020.06.027. Online ahead of print. PMID: 32736831
- Minisola S, Colangelo L, Pepe J, et al. Vitamin D screening. J Endocrinol Invest. 2020 Aug;43(8):1047-1051. https://doi.org/10.1007/s40618-020-01220-w. Epub 2020 Mar 18. PMID: 32189163 Review.
- Moon RJ, Curtis EM, Cooper C, et al. Vitamin D supplementation: are multivitamins sufficient? Arch Dis Child. 2020 Aug;105(8):791-793. https://doi.org/10.1136/archdischild-2018-316339. Epub 2019 Feb 25. PMID: 30804007
- Munk JK, Bathum L, Jørgensen HL, et al. A compulsory pop-up form reduces the number of vitamin D requests from general practitioners by 25 percent. Scand J Prim Health Care. 2020 Sep;38(3):308-314. https://doi.org/10.1080/02813432.2020.1794399. Epub 2020 Jul 20. PMID: 32686978
- Naureen G, Sanders KM, Busija L, et al. Prediction models and questionnaires developed to predict vitamin D status in adults: a systematic review. Osteoporos Int. 2020 Jul 13. https://doi.org/10.1007/s00198-020-05539-1. Online ahead of print. PMID: 32662035 Review.
- Nikolac Gabaj N, Unic A, et al. In sickness and in health: pivotal role of vitamin D. Biochem Med (Zagreb). 2020 Jun 15;30(2):020501. https://doi.org/10.11613/BM.2020.020501. PMID: 32550812
- Nuszkiewicz J, Woźniak A, Szewczyk-Golec K. Ionizing Radiation as a Source of Oxidative Stress-The Protective Role of Melatonin and Vitamin D. Int J Mol Sci. 2020 Aug 13;21(16):E5804. https://doi.org/10.3390/ijms21165804. PMID: 32823530 Free article. Review.
- Oliveri AN, Knuth M, Glazer L, et al. Zebrafish show long-term behavioral impairments resulting from developmental vitamin D deficiency. Physiol Behav. 2020 Oct 1;224:113016. https://doi.org/10.1016/j.physbeh.2020.113016. Epub 2020 Jun 17. PMID: 32561170
- Ozturk E, Cankaya C. Effect of Vitamin D Deficiency on Contrast Sensitivity Function.

Curr Eye Res. 2020 Jun 18:1-6. https://doi.org/10.1080/02713683.2020.1781194. Online ahead of print. PMID: 32552162

- Pastor-Arroyo EM, Knöpfel T, Imenez Silva PH, et al. Intestinal epithelial ablation of Pit-2/Slc20a2 in mice leads to sustained elevation of vitamin D(3) upon dietary restriction of phosphate. Acta Physiol (Oxf). 2020 Jun 21:e13526. https://doi.org/10.1111/apha.13526. Online ahead of print. PMID: 32564464
- Peng J, Liu Y, Xie J, et al. Effects of vitamin D on drugs: Response and disposal. Nutrition. 2020 Jun;74:110734. https://doi.org/10.1016/j.nut.2020.110734. Epub 2020 Jan 18. PMID: 32179384 Review.
- Pérez-Alonso M, Briongos LS, Ruiz-Mambrilla M, et al. Association Between Bat Vitamin D Receptor 3' Haplotypes and Vitamin D Levels at Baseline and a Lower Response After Increased Vitamin D Supplementation and Exposure to Sunlight. Int J Vitam Nutr Res. 2020 Jun;90(3-4):290-294. https://doi.org/10.1024/0300-9831/a000534. Epub 2019 Feb 21. PMID: 30789807
- Pérez-López FR, Chedraui P, Pilz S. Vitamin D supplementation after the menopause. Ther Adv Endocrinol Metab. 2020 Jun 5;11:2042018820931291.https://doi.org/10.1177/2042018820931291. eCollection 2020. PMID: 32551035
- Rashid A. Yonder: Vitamin D screening, startups, social distancing, and world leaders on Twitter. Br J Gen Pract. 2020 Jun 25;70(696):348. https://doi.org/10.3399/bjgp20X710573. Print 2020 Jul. PMID: 32586814
- Rey AI, Segura JF, Castejón D, et al. Vitamin D(3) Supplementation in Drinking Water Prior to Slaughter Improves Oxidative Status, Physiological Stress, and Quality of Pork. Antioxidants (Basel). 2020 Jun 26;9(6):559. https://doi.org/10.3390/antiox9060559. PMID: 32604942
- Rizzoli R. Vitamin D supplementation: upper limit for safety revisited? Aging Clin Exp Res. 2020 Aug 28. https://doi.org/10.1007/s40520-020-01678-x. Online ahead of print. PMID: 32857334 Review.
- Rockwell MS, Wu Y, Salamoun M, et al. Patterns of Clinical Care Subsequent to Nonindicated Vitamin D Testing in Primary Care. J Am Board Fam Med. 2020 Jul-Aug;33(4):569-579. https://doi.org/10.3122/jabfm.2020.04.200007. PMID: 32675268
- Rothen JP, Rutishauser J, Walter PN, et al. Oral intermittent vitamin D substitution: influence of pharmaceutical form and dosage frequency on medication adherence: a randomized clinical trial. BMC Pharmacol Toxicol. 2020 Jul 11;21(1):51. https://doi.org/10.1186/s40360-020-00430-5. PMID: 32653031
- Serefoglu Cabuk K, Tunc U, Ozturk Karabulut G, et al. Serum calcium, magnesium, phosphorus, and vitamin D in benign essential blepharospasm. Graefes Arch Clin Exp Ophthalmol. 2020 Jun;258(6):1293-1297. https://doi.org/10.1007/s00417-020-04650-7. Epub 2020 Mar 31. PMID: 32236706
- Shah SG, Shah GY. Corneal calcium deposition as a plaque following collagen cross linking and vitamin D insufficiency. Indian J Ophthalmol. 2020 Jul;68(7):1441-1442. https://doi.org/10.4103/ijo.IJO_2160_19. PMID: 32587185
- Slow S, Pearson JP, Florkowski CM, et al. Effect of genetic factors on the response to vitamin D(3) supplementation in the VIDARIS randomized controlled trial. Nutrition. 2020 Jul-Aug;75-76:110761. https://doi.org/10.1016/j.nut.2020.110761. Epub 2020 Feb 12. PMID: 32289634
- Sridhar U, Tripathy K. Commentary: Dry eye syndrome and vitamin D deficiency. Indian J Ophthalmol. 2020 Jun;68(6):1026-1027. https://doi.org/10.4103/ijo.IJO_398_20. PMID: 32461421
- Stricker Jakobsen S, Nielsen JP, Jakobsen J. Effect of UVB light on vitamin D status in piglets and sows. J Steroid Biochem Mol Biol. 2020 Jun;200:105637. https://doi.org/10.1016/j.jsbmb.2020.105637. Epub 2020 Feb 19. PMID: 32087249
- Tomei S, Singh P, Mathew R, et al. The Role of Polymorphisms in Vitamin D-Related Genes in Response to Vitamin D Supplementation. Nutrients. 2020 Aug 27;12(9):E2608. https://doi.org/10.3390/nu12092608. PMID: 32867112
- Torjesen I. Covid-19: Public health agencies review whether vitamin D supplements could reduce risk. BMJ. 2020 Jun 19;369:m2475. https://doi.org/10.1136/bmj.m2475. PMID: 32561509
- Torrungruang K, Chantarangsu S, Sura T, et al. Interplay between vitamin D receptor FokI polymorphism and smoking influences Porphyromonas gingivalis proportions in subgingival plaque. J Clin Periodontol. 2020 Aug;47(8):912-920. https://doi.org/10.1111/jcpe.13307. Epub 2020 Jun 3. PMID: 32418218
- Uwitonze AM, Rahman S, Ojeh N, et al. Oral manifestations of magnesium and vitamin D inadequacy. J Steroid Biochem Mol Biol. 2020 Jun;200:105636. https://doi.org/10.1016/j.jsbmb.2020.105636. Epub 2020 Feb 18. PMID: 32084549 Review.
- Valerio MS, Janakiram NB, Goldman SM, et al. Pleiotropic actions of Vitamin D in composite musculoskeletal trauma. Injury. 2020 Jun 18:S0020-1383(20)30527-1. https://doi.org/10.1016/j.injury.2020.06.023. Online ahead of print. PMID: 32624209 Review.
- van Ballegooijen AJ, Beulens JWJ, Kieneker LM, et al. Combined low vitamin D and K status amplifies mortality risk: a prospective study. Eur J Nutr. 2020 Aug 17. https://doi.org/10.1007/s00394-020-02352-8. Online ahead of print. PMID: 32808059
- Vieth R. Vitamin D supplementation: cholecalciferol, calcifediol, and calcitriol. Eur J Clin Nutr. 2020 Jul 23. https://doi.org/10.1038/s41430-020-0697-1. Online ahead of print. PMID: 32704098 Review.
- Wang PQ, Pan DX, Hu CQ, et al. Vitamin D-vitamin D receptor system down-regulates expression of uncoupling proteins in brown adipocyte through interaction with Hairless protein. Biosci Rep. 2020 Jun 26;40(6):BSR20194294. https://doi.org/10.1042/BSR20194294. PMID: 32452516
- Wan M, Patel A, Patel JP, et al. Quality and use of unlicensed vitamin D preparations in primary care in England: Retrospective review of national prescription data and laboratory analysis. Br J Clin Pharmacol. 2020

Aug 16. https://doi.org/10.1111/bcp.14521. Online ahead of print. PMID: 32803772

- Watts P, Sahai A, Kumar PR, et al. A prospective study to assess the role of vitamin D individually and in combination with cyclosporine in the treatment of dry eye in patients with deficient serum 25(OH)D levels. Indian J Ophthalmol. 2020 Jun;68(6):1020-1026. https://doi.org/10.4103/ijo.IJO_1492_19. PMID: 32461420
- Witte MA, Fischer PR. Severe acute malnutrition, calcium and vitamin D: important interactions. Public Health Nutr. 2020 Aug 7:1-3. https://doi.org/10.1017/S1368980020002499. Online ahead of print. PMID: 32762782
- Wyon MA, Wolman R, Martin C, et al. The efficacy of different vitamin D supplementation delivery methods on serum 25(OH)D: A randomised double-blind placebo trial. Clin Nutr. 2020 Jun 6:S0261-5614(20)30276-4. https://doi.org/10.1016/j.clnu.2020.05.040. Online ahead of print. PMID: 32703720
- Zittermann A, Berthold HK, Pilz S. The effect of vitamin D on fibroblast growth factor 23: a systematic review and meta-analysis of randomized controlled trials. Eur J Clin Nutr. 2020 Aug 27. https://doi.org/10.1038/s41430-020-00725-0. Online ahead of print. PMID: 32855522 Review.
- Öktem Ç, Aslan F. Vitamin D levels in young adult cataract patients: A case control study. Ophthalmic Res. 2020 Jun 23. https://doi.org/10.1159/000509602. Online ahead of print. PMID: 32575105
- Öncül H, Alakus MF, Çağlayan M, et al. Changes in choroidal thickness after vitamin D supplementation in patients with vitamin D deficiency. Can J Ophthalmol. 2020 Aug 18:S0008-4182(20)30672-4. https://doi.org/10.1016/j.jcjo.2020.06.014. Online ahead of print. PMID: 32822660

NEUROLOGIA

- Abokrysha NT, Farouk Hussein AA, Magdy R. Childhood onset of acquired neuromyotonia: association with vitamin D deficiency. Int J Neurosci. 2020 Jun;130(6):631-634. https://doi.org/10.1080/00207454.2019.1702536. Epub 2019 Dec 18. PMID: 31813337
- Allahyari E, Hanachi P, Ariakia F, et al. The relationship between neuropsychological function and responsiveness to vitamin D supplementation using artificial neural networks. Nutr Health. 2020 Jul 16:260106020937190. https://doi.org/10.1177/0260106020937190. Online ahead of print. PMID: 32669041
- Arabi SM, Sedaghat A, Ehsaei MR, et al. Efficacy of high-dose versus low-dose vitamin D supplementation on serum levels of inflammatory factors and mortality rate in severe traumatic brain injury patients: study protocol for a randomized placebo-controlled trial. Trials. 2020 Jul 29;21(1):685. https://doi.org/10.1186/s13063-020-04622-6. PMID: 32727558
- Arici Duz O, Helvaci Yilmaz N. Nocturnal blood pressure changes in Parkinson's disease: correlation with autonomic dysfunction and vitamin D levels. Acta Neurol Belg. 2020 Aug;120(4):915-920. https://doi.org/10.1007/s13760-019-01113-7. Epub 2019 Mar 7. PMID: 30847668
- Arslan S, Sener EF, Gunay NE, et al. Serum vitamin D, vitamin D binding protein levels and leukocyte vitamin D receptor gene expression in patients with ischaemic stroke. J Pak Med Assoc. 2020 Aug;70(8):1340-1344. https://doi.org/10.5455/JPMA.987. PMID: 32794483
- Babaei P, Damirchi A, Hoseini Z, et al. Co-treatment of vitamin D supplementation and aerobic training improves memory deficit in ovariectomized rat. Int J Neurosci. 2020 Jun;130(6):595-600. https://doi.org/10.1080/00207454.2019.1699082. Epub 2020 Jan 27. PMID: 31775548
- Bauer A, Lechner I, Auer M, et al. Influence of physical activity on serum vitamin D levels in people with multiple sclerosis. PLoS One. 2020 Jun 11;15(6):e0234333. https://doi.org/10.1371/journal.pone.0234333. eCollection 2020. PMID: 32525921
- Bigelow RT, Carey JP. Randomized controlled trial in support of vitamin D and calcium supplementation for BPPV. Neurology. 2020 Sep 1;95(9):371-372. https://doi.org/10.1212/WNL.0000000000010349. Epub 2020 Aug 5. PMID: 32759203
- Bäcker-Koduah P, Infante-Duarte C, Ivaldi F, et al. Effect of vitamin D supplementation on N-glycan branching and cellular immunophenotypes in MS. Ann Clin Transl Neurol. 2020 Aug 23. https://doi.org/10.1002/acn3.51148. Online ahead of print. PMID: 32830462
- Can NU, Alagöz AN. The Relationship Among Bone Mineral Density, Bone Biomarkers and Vitamin D Levels in Patients with Parkinson's Disease. Clin Lab. 2020 Aug 1;66(8). https://doi.org/10.7754/Clin.Lab.2019.190615. PMID: 32776751
- Cui P, Wang Y, Li Y, et al. Vitamin D Attenuates Hypoxia-Induced Injury in Rat Primary Neuron Cells through Downregulation of the Dual Oxidase 1 (DUOX1) Gene. Med Sci Monit. 2020 Jul 26;26:e925350. https://doi.org/10.12659/MSM.925350. PMID: 32712621
- Darwish H, Farran N, Hannoun S, et al. Serum vitamin D level is associated with speed of processing in multiple sclerosis patients. J Steroid Biochem Mol Biol. 2020 Jun;200:105628. https://doi.org/10.1016/j.jsbmb.2020.105628. Epub 2020 Feb 19. PMID: 32061642
- Duchaine CS, Talbot D, Nafti M, et al. Vitamin D status, cognitive decline and incident dementia: the Canadian Study of Health and Aging. Can J Public Health. 2020 Jun;111(3):312-321. https://doi.org/10.17269/s41997-019-00290-5. Epub 2020 Feb 3. PMID: 32016921
- Gorska-Ciebiada M, Ciebiada M. Association of hsCRP and vitamin D levels with mild cognitive impairment in elderly type 2 diabetic patients. Exp Gerontol. 2020 Jul 1;135:110926. https://doi.org/10.1016/j.exger.2020.110926. Epub 2020 Mar 17. PMID: 32194146
- Govind N. Vitamin D for the management of multiple sclerosis. Br J Community Nurs. 2020 Jun 2;25(6):304-305. https://doi.org/10.12968/bjcn.2020.25.6.304. PMID: 32496854
- Graves JS, Barcellos LF, Krupp L, et al. Vitamin D genes influence MS relapses in children. Mult Scler. 2020 Jul;26(8):894-901. https://doi.org/10.1177/1352458519845842. Epub 2019 May 13. PMID: 31081484
- Gómez-Oliva R, Geribaldi-Doldán N, Domínguez-García S, et al. Vitamin D deficiency as a potential risk factor for ac-

celerated aging, impaired hippocampal neurogenesis and cognitive decline: a role for Wnt/β-catenin signaling. Aging (Albany NY). 2020 Jun 17;12(13):13824-13844. https://doi.org/10.18632/aging.103510. Epub 2020 Jun 17. PMID: 32554862

- Hänninen K, Jääskeläinen O, Herukka SK, et al. Vitamin D supplementation and serum neurofilament light chain in interferon-beta-1b-treated MS patients. Brain Behav. 2020 Jul 23:e01772. https://doi.org/10.1002/brb3.1772. Online ahead of print. PMID: 32705821
- Jeong SH, Kim JS, Kim HJ, et al. Prevention of benign paroxysmal positional vertigo with vitamin D supplementation: A randomized trial. Neurology. 2020 Sep 1;95(9):e1117-e1125. https://doi.org/10.1212/WNL.0000000000010343. Epub 2020 Aug 5. PMID: 32759193
- Jeong SH, Lee SU, Kim JS. Prevention of recurrent benign paroxysmal positional vertigo with vitamin D supplementation: a meta-analysis. J Neurol. 2020 Aug 7. https://doi.org/10.1007/s00415-020-09952-8. Online ahead of print. PMID: 32767116 Review.
- Jésus P, Godet B, Darthou-Pouchard L, et al. Vitamin D status among patients with drug-resistant and non-drug-resistant epilepsy. Int J Vitam Nutr Res. 2020 Jun;90(3-4):205-209. https://doi.org/10.1024/0300-9831/a000459. Epub 2020 Mar 13. PMID: 32167416
- Kong AN, Fong CY, Ng CC, et al. Association of common genetic variants with vitamin D status in Malaysian children with epilepsy. Seizure. 2020 Jul;79:103-111. https://doi.org/10.1016/j.seizure.2020.05.009. Epub 2020 May 20. PMID: 32464532
- Kumar M, Nishad DK, Kumar A, et al. Enhancement in brain uptake of vitamin D(3) nanoemulsion for treatment of cerebral ischemia: formulation, gamma scintigraphy and efficacy study in transient middle cerebral artery occlusion rat models. Microencapsul. 2020 Aug 6:1-10. https://doi.org/10.1080/02652048.2020.1801870. Online ahead of print. PMID: 32715833
- Lanznaster D, Bejan-Angoulvant T, Gandía J, et al. Is There a Role for Vitamin D in Amyotrophic Lateral Sclerosis? A Systematic Review and Meta-Analysis. Front Neurol. 2020 Jul 31;11:697. https://doi.org/10.3389/fneur.2020.00697. eCollection 2020. PMID: 32849187
- Mayo BC, Massel DH, Yacob A, et al. A Review of Vitamin D in Spinal Surgery: Deficiency Screening, Treatment, and Outcomes. Int J Spine Surg. 2020 Jun 30;14(3):447-454. https://doi.org/10.14444/7059. eCollection 2020 Jun. PMID: 32699770
- McGinn EA, Powers A, Galas M, et al. Neonatal Vitamin D Status Is Associated with the Severity of Brain Injury in Neonatal Hypoxic-Ischemic Encephalopathy: A Pilot Study. Neuropediatrics. 2020 Aug;51(4):251-258. https://doi.org/10.1055/s-0040-1708535. Epub 2020 Mar 16. PMID: 32176928
- Mehrabadi S, Sadr SS. Administration of Vitamin D(3) and E supplements reduces neuronal loss and oxidative stress in a model of rats with Alzheimer's disease. Neurol Res. 2020 Oct;42(10):862-868. https://doi.org/10.1080/01616412.2020.1787624. Epub 2020 Jul 4. PMID: 32627720
- Mohammadi A, Azarnezhad A, Khanbabaei H, et al. Vitamin D receptor genetic polymorphisms and the risk of multiple sclerosis: A systematic review and meta-analysis. Steroids. 2020 Jun;158:108615. https://doi.org/10.1016/j.steroids.2020.108615. Epub 2020 Feb 22. PMID: 32097613 Review.
- Mokhtari-Zaer A, Hosseini M, Salmani H, et al. Vitamin D(3) attenuates lipopolysaccharide-induced cognitive impairment in rats by inhibiting inflammation and oxidative stress. Life Sci. 2020 Jul 15;253:117703. https://doi.org/10.1016/j.lfs.2020.117703. Epub 2020 Apr 22. PMID: 32334010
- Monni R, Beccaria F, Boscaini F, et al. Pearls & Oy-sters: Focal hypocalcemic seizures secondary to severe vitamin D deficiency/rickets. Neurology. 2020 Jun 16:10.1212/WNL.0000000000009837. https://doi.org/10.1212/WNL.0000000000009837. Online ahead of print. PMID: 32546651
- Mori R, Yokokawa T, Fujita S. Modified expression of vitamin D receptor and CYP27B1 in denervation-induced muscle atrophy. Biochem Biophys Res Commun. 2020 Aug 27;529(3):733-739. https://doi.org/10.1016/j.bbrc.2020.05.205. Epub 2020 Jul 19. PMID: 32736700
- Mutua AM, Mogire RM, Elliott AM, et al. Effects of vitamin D deficiency on neurobehavioural outcomes in children: a systematic review. Wellcome Open Res. 2020 Jun 11;5:28. https://doi.org/10.12688/wellcomeopenres.15730.2. eCollection 2020. PMID: 32399499
- Nakamura S, Sato Y, Kobayashi T, et al. Vitamin D protects against immobilization-induced muscle atrophy via neural crest-derived cells in mice. Sci Rep. 2020 Jul 22;10(1):12242. https://doi.org/10.1038/s41598-020-69021-y. PMID: 32699341
- Ogbu D, Xia E, Sun J. Gut instincts: vitamin D/vitamin D receptor and microbiome in neurodevelopment disorders. Open Biol. 2020 Jul;10(7):200063. https://doi.org/10.1098/rsob.200063. Epub 2020 Jul 8. PMID: 32634371
- Pungsornruk K, Fedorko L, Djaiani G. Vitamin D: Defense Against Delirium? J Cardiothorac Vasc Anesth. 2020 Jul;34(7):1780-1782. https://doi.org/10.1053/j.jvca.2020.03.034. Epub 2020 Apr 15. PMID: 32359712
- Shi H, Chen H, Zhang Y, et al. 25-Hydroxyvitamin D level, vitamin D intake, and risk of stroke: A dose-response meta-analysis. Clin Nutr. 2020 Jul;39(7):2025-2034. https://doi.org/10.1016/j.clnu.2019.08.029. Epub 2019 Sep 4. PMID: 31530422
- Si Y, Kazamel M, Kwon Y, et al. The vitamin D activator CYP27B1 is upregulated in muscle fibers in denervating disease and can track progression in amyotrophic lateral sclerosis. J Steroid Biochem Mol Biol. 2020 Jun;200:105650. https://doi.org/10.1016/j.jsbmb.2020.105650. Epub 2020 Mar 3. PMID: 32142934
- Specht IO, Thorsteinsdottir F, Walker KC, et al. Neonatal vitamin D status and risk of childhood epilepsy. Epilepsia. 2020 Jun;61(6):1282-1290. https://doi.org/10.1111/epi.16520. Epub 2020 May 4. PMID: 32363640
- Toro J, Reyes S, Díaz-Cruz C, et al. Vitamin D and other environmental risk

factors in Colombian patients with multiple sclerosis. Mult Scler Relat Disord. 2020 Jun;41:101983. https://doi.org/10.1016/j.msard.2020.101983. Epub 2020 Feb 4. PMID: 32086164

- Velayati A, Vahdat Shariatpanahi M, Dehghan S, et al. Vitamin D and Postoperative Delirium After Coronary Artery Bypass Grafting: A Prospective Cohort Study. J Cardiothorac Vasc Anesth. 2020 Jul;34(7):1774-1779. https://doi.org/10.1053/j.jvca.2020.02.008. Epub 2020 Feb 12. PMID: 32156511
- Wei W, Zhang Y, Chen R, et al. The efficacy of vitamin D supplementation on painful diabetic neuropathy: Protocol for a systematic review and meta-analysis. Medicine (Baltimore). 2020 Jul 31;99(31):e20871. https://doi.org/10.1097/MD.0000000000020871. PMID: 32756079
- Wu Y, Cai Y, Liu M, et al. The Potential Immunoregulatory Roles of Vitamin D in Neuromyelitis Optica Spectrum Disorder. Mult Scler Relat Disord. 2020 Aug;43:102156. https://doi.org/10.1016/j.msard.2020.102156. Epub 2020 May 16. PMID: 32474282 Review.
- Wu Z, Wu J, Lan Z. Comment on: Plasma vitamin D, past chest illness, and risk of future chest illness in chronic spinal cord injury (SCI): a longitudinal observational study. Spinal Cord. 2020 Jul;58(7):733-734. https://doi.org/10.1038/s41393-020-0452-4. Epub 2020 Mar 24. PMID: 32210354
- Yeh WZ, Gresle M, Jokubaitis V, et al. Immunoregulatory effects and therapeutic potential of vitamin D in multiple sclerosis. Br J Pharmacol. 2020 Sep;177(18):4113-4133. https://doi.org/10.1111/bph.15201. Epub 2020 Aug 5. PMID: 32668009 Review.

NEFROLOGIA

- Anis KH, Pober D, Rosas SE. Vitamin D Analogues and Coronary Calcification in CKD Stages 3 and 4: A Randomized Controlled Trial of Calcitriol Versus Paricalcitol. Kidney Med. 2020 Jun 17;2(4):450-458. https://doi.org/10.1016/j.xkme.2020.05.009. eCollection 2020 Jul-Aug. PMID: 32775985
- Annamalai C, Ganesh RN, Viswanathan P. Ferrotoxicity and its amelioration by endogenous vitamin D in experimental acute kidney injury. Exp Biol Med (Maywood). 2020 Aug 2:1535370220946271. https://doi.org/10.1177/1535370220946271. Online ahead of print. PMID: 32741217
- Chao JY, Li CY, Wang MC, et al. The use of activated vitamin D and risks of hospitalization for infection and amputation in incident hemodialysis patients in Taiwan: a nationwide population-based cohort study. BMC Nephrol. 2020 Aug 6;21(1):331. https://doi.org/10.1186/s12882-020-01988-2. PMID: 32762673
- Cheung WW, Ding W, Hoffman HM, et al. Vitamin D ameliorates adipose browning in chronic kidney disease cachexia. Sci Rep. 2020 Aug 25;10(1):14175. https://doi.org/10.1038/s41598-020-70190-z. PMID: 32843714
- Demir F, Demir M, Aygun H. Evaluation of the protective effect of paricalcitol and vitamin D(3) at doxorubicin nephrotoxicity in rats with (99m)Technetium-dimercaptosuccinic acid renal scintigraphy and biochemical methods. Hum Exp Toxicol. 2020 Aug 19:960327120950010. https://doi.org/10.1177/0960327120950010. Online ahead of print. PMID: 32812453
- Griebling TL. Re: Bacteriuria and Vitamin D Deficiency: A Cross Sectional Study of 385 Nursing Home Residents. J Urol. 2020 Sep;204(3):595. https://doi.org/10.1097/JU.0000000000001163.02. Epub 2020 Jun 30. PMID: 32603267
- Hashimoto N, Matsui I, Ishizuka S, et al. Lithocholic acid increases intestinal phosphate and calcium absorption in a vitamin D receptor dependent but transcellular pathway independent manner. Kidney Int. 2020 Jun;97(6):1164-1180. https://doi.org/10.1016/j.kint.2020.01.032. Epub 2020 Feb 25. PMID: 32354638
- Imani D, Razi B, Khosrojerdi A, et al. Vitamin D receptor gene polymorphisms and susceptibility to urolithiasis: a meta-regression and meta-analysis. BMC Nephrol. 2020 Jul 10;21(1):263. https://doi.org/10.1186/s12882-020-01919-1. PMID: 32650740
- Lei M, Liu Z, Guo J. The Emerging Role of Vitamin D and Vitamin D Receptor in Diabetic Nephropathy. Biomed Res Int. 2020 Jul 11;2020:4137268. https://doi.org/10.1155/2020/4137268. eCollection 2020. PMID: 32766307
- Li M, Li Y. Prevalence and influencing factors of vitamin D deficiency in chronic kidney disease: A cross-sectional study. Int J Clin Pharmacol Ther. 2020 Aug 24. https://doi.org/10.5414/CP203737. Online ahead of print. PMID: 32831162
- Lin SY, Chiu YW, Yang HR, et al. Association of vitamin D levels and risk of latent tuberculosis in the hemodialysis population. J Microbiol Immunol Infect. 2020 Jun 10:S1684-1182(20)30141-9. https://doi.org/10.1016/j.jmii.2020.06.001. Online ahead of print. PMID: 32593557
- Malekmakan L, Karimi Z, Mansourian A, et al. Role of vitamin D in oxidative stress modulation in end-stage renal disease patients: A double-blind randomized clinical trial. Hemodial Int. 2020 Jul;24(3):367-373. https://doi.org/10.1111/hdi.12849. Epub 2020 Jun 9. PMID: 32519507
- Milart J, Lewicka A, Jobs K, et al. Effect of Vitamin D Treatment on Dynamics of Stones Formation in the Urinary Tract and Bone Density in Children with Idiopathic Hypercalciuria. Nutrients. 2020 Aug 20;12(9):E2521. https://doi.org/10.3390/nu12092521. PMID: 32825353
- Mohanty S, Kamolvit W, Hertting O, et al. Vitamin D strengthens the bladder epithelial barrier by inducing tight junction proteins during E. coli urinary tract infection. Cell Tissue Res. 2020 Jun;380(3):669-673. https://doi.org/10.1007/s00441-019-03162-z. Epub 2020 Jan 13. PMID: 31930458
- Mosca M, Lion-Lambert M, Bienaimé F, et al. Association between 25(OH) vitamin D and graft survival in renal transplanted children. Pediatr Transplant. 2020 Aug 26:e13809. https://doi.org/10.1111/petr.13809. Online ahead of print. PMID: 32845557
- Ramakrishnan M, Coyne DW. Testing Vitamin D Analogues for Vascular Calcification in Patients With CKD. Kidney Med. 2020 Jul 2;2(4):385-387. https://doi.org/10.1016/j.xkme.2020.06.003. eCollection 2020 Jul-Aug. PMID: 32779642 Free PMC article.

- Rayego-Mateos S, Morgado-Pascual JL, Valdivielso JM, et al. TRAF3 Modulation: Novel Mechanism for the Anti-inflammatory Effects of the Vitamin D Receptor Agonist Paricalcitol in Renal Disease. J Am Soc Nephrol. 2020 Sep;31(9):2026-2042. https://doi.org/10.1681/ASN.2019111206. Epub 2020 Jul 6. PMID: 32631974
- Sawires H, Fadel F, Hussein A, et al. Native vs. active vitamin D in children with chronic kidney disease: a cross-over study. Pediatr Nephrol. 2020 Aug 26. https://doi.org/10.1007/s00467-020-04721-1. Online ahead of print. PMID: 32844292
- Sözel H, Köksoy S, Ozdem S, et al. Lymphocyte and monocyte vitamin D receptor expression during paricalcitol or calcitriol treatments in patients with stage 5 chronic kidney disease. Int Urol Nephrol. 2020 Aug;52(8):1563-1570. https://doi.org/10.1007/s11255-020-02475-1. Epub 2020 May 13. PMID: 32405698
- Yarlagadda K, Ma N, Doré S. Vitamin D and Stroke: Effects on Incidence, Severity, and Outcome and the Potential Benefits of Supplementation. Front Neurol. 2020 Jun 10;11:384. https://doi.org/10.3389/fneur.2020.00384. eCollection 2020. PMID:
- Zhang ZH, Luo B, Xu S, et al. Long-term vitamin D deficiency promotes renal fibrosis and functional impairment in middle-aged male mice. Br J Nutr. 2020 Aug 19:1-32. https://doi.org/10.1017/S0007114520003232. Online ahead of print. PMID: 32812524

ONCOLOGIA

- Akutsu T, Kitamura H, Himeiwa S, et al. Vitamin D and Cancer Survival: Does Vitamin D Supplementation Improve the Survival of Patients with Cancer? Curr Oncol Rep. 2020 Jun 4;22(6):62. https://doi.org/10.1007/s11912-020-00929-4. PMID: 32495112 Review.
- Anbil S, Pigula M, Huang HC, et al. Vitamin D Receptor Activation and Photodynamic Priming Enables Durable Low-dose Chemotherapy. Mol Cancer Ther. 2020 Jun;19(6):1308-1319. https://doi.org/10.1158/1535-7163.MCT-19-0791. Epub 2020 Mar 27. PMID: 32220968
- Bahrami A, Sahebkar A. Vitamin D as a Potential Therapeutic Option in Cancer Treatment: Is There a Role for Chemoprevention? Anticancer Agents Med Chem. 2020 Jul 29. https://doi.org/10.2174/1871520620999200729192728. Online ahead of print. PMID: 32729431
- Boughanem H, Cabrera-Mulero A, Hernández-Alonso P, et al. Association between variation of circulating 25-OH vitamin D and methylation of secreted frizzled-related protein 2 in colorectal cancer. Clin Epigenetics. 2020 Jun 9;12(1):83. https://doi.org/10.1186/s13148-020-00875-9. PMID: 32517740
- Chen J, Tang Z, Slominski AT, et al. Vitamin D and its analogs as anticancer and anti-inflammatory agents. Eur J Med Chem. 2020 Aug 15;207:112738. https://doi.org/10.1016/j.ejmech.2020.112738. Online ahead of print. PMID: 32829183 Review.
- El-Sharkawy A, Malki A. Vitamin D Signaling in Inflammation and Cancer: Molecular Mechanisms and Therapeutic Implications. Molecules. 2020 Jul 15;25(14):3219. https://doi.org/10.3390/molecules25143219. PMID: 32679655
- Elliott MJ, Ennis M, Pritchard KI, et al. Association between BMI, vitamin D, and estrogen levels in postmenopausal women using adjuvant letrozole: a prospective study. NPJ Breast Cancer. 2020 Jun 12;6:22. https://doi.org/10.1038/s41523-020-0166-y. eCollection 2020. PMID: 32566743
- Fernández-Barral A, Bustamante-Madrid P, Ferrer-Mayorga G, et al. Vitamin D Effects on Cell Differentiation and Stemness in Cancer. Cancers (Basel). 2020 Aug 25;12(9):E2413. https://doi.org/10.3390/cancers12092413. PMID: 32854355 Free article. Review.
- Ferronato MJ, Nadal Serrano M, Arenas Lahuerta EJ, et al. Vitamin D analogues exhibit antineoplastic activity in breast cancer patient-derived xenograft cells. J Steroid Biochem Mol Biol. 2020 Aug 9:105735. https://doi.org/10.1016/j.jsbmb.2020.105735. Online ahead of print. PMID: 32784045
- Grant WB. Vitamin D Status May Help Explain Racial Disparities in Pancreatic Cancer Incidence and Mortality in the United States. Clin Gastroenterol Hepatol. 2020 Jul;18(8):1896. https://doi.org/10.1016/j.cgh.2019.12.033. Epub 2020 Jan 8. PMID: 31926339
- Grover S, Dougan M, Tyan K, et al. Vitamin D intake is associated with decreased risk of immune checkpoint inhibitor-induced colitis. Cancer. 2020 Aug 15;126(16):3758-3767. https://doi.org/10.1002/cncr.32966. Epub 2020 Jun 22. PMID: 32567084
- Huang D, Lei S, Wu Y, et al. Additively protective effects of vitamin D and calcium against colorectal adenoma incidence, malignant transformation and progression: A systematic review and meta-analysis. Clin Nutr. 2020 Aug;39(8):2525-2538. https://doi.org/10.1016/j.clnu.2019.11.012. Epub 2019 Nov 16. PMID: 31784301
- Hyde MA, Grossman D, Wu YP, et al. Vitamin D, melanoma risk, and tumor thickness in PLCO cancer screening trial patients. JAAPA. 2020 Jun;33(6):35-41. https://doi.org/10.1097/01.JAA.0000662388.18867.42. PMID: 32452960
- Ibrahimovic M, Franzmann E, Mondul AM, et al. Disparities in Head and Neck Cancer: A Case for Chemoprevention with Vitamin D. Nutrients. 2020 Aug 29;12(9):E2638. https://doi.org/10.3390/nu12092638. PMID: 32872541
- Kong J, Chen X, Wang J, et al. Genetic Polymorphisms in the Vitamin D Pathway and Non-small Cell Lung Cancer Survival. Pathol Oncol Res. 2020 Jul;26(3):1709-1715. https://doi.org/10.1007/s12253-019-00702-4. Epub 2019 Oct 17. PMID: 31625015
- Koole JL, Bours MJL, van Roekel EH, et al. Higher Serum Vitamin D Concentrations Are Longitudinally Associated with Better Global Quality of Life and Less Fatigue in Colorectal Cancer Survivors up to 2 Years after Treatment. Cancer Epidemiol Biomarkers Prev. 2020 Jun;29(6):1135-1144. https://doi.org/10.1158/1055-9965.EPI-19-1522. Epub 2020 Apr 3. PMID: 32245785
- Kratzer TB, Weinstein SJ, Albanes D, et al. Vitamin D binding protein and risk of renal cell carcinoma in the prostate, lung, colorectal and ovarian cancer screening trial. Int J

Cancer. 2020 Aug 1;147(3):669-674. https://doi.org/10.1002/ijc.32758. Epub 2019 Nov 19. PMID: 31659740

- Kwak JH, Paik JK. Vitamin D Status and Gastric Cancer: A Cross-Sectional Study in Koreans. Nutrients. 2020 Jul 6;12(7):2004. https://doi.org/10.3390/nu12072004. PMID: 32640566
- Mahamat-Saleh Y, Aune D, Schlesinger S. 25-Hydroxyvitamin D status, vitamin D intake, and skin cancer risk: a systematic review and dose-response meta-analysis of prospective studies. Sci Rep. 2020 Aug 4;10(1):13151. https://doi.org/10.1038/s41598-020-70078-y. PMID: 32753685
- Maksymchuk OV, Kashuba VI. Altered expression of cytochrome P450 enzymes involved in metabolism of androgens and vitamin D in the prostate as a risk factor for prostate cancer. Pharmacol Rep. 2020 Jul 17. https://doi.org/10.1007/s43440-020-00133-y. Online ahead of print. PMID: 32681429 Review.
- McFarland DC, Fernbach M, Breitbart WS, et al. Prognosis in metastatic lung cancer: vitamin D deficiency and depression-a cross-sectional analysis. BMJ Support Palliat Care. 2020 Aug 27:bmjspcare-2020-002457. https://doi.org/10.1136/bmjspcare-2020-002457. Online ahead of print. PMID: 32855232
- Moz S, Contran N, Facco M, et al. Vitamin D Prevents Pancreatic Cancer-Induced Apoptosis Signaling of Inflammatory Cells. Biomolecules. 2020 Jul 15;10(7):1055. https://doi.org/10.3390/biom10071055. PMID: 32679840
- Narvaez CJ, Grebenc D, Balinth S, et al. Vitamin D regulation of HAS2, hyaluronan synthesis and metabolism in triple negative breast cancer cells. J Steroid Biochem Mol Biol. 2020 Jul;201:105688. https://doi.org/10.1016/j.jsbmb.2020.105688. Epub 2020 Apr 30. PMID: 32360595
- Negri M, Gentile A, de Angelis C, et al. Vitamin D-Induced Molecular Mechanisms to Potentiate Cancer Therapy and to Reverse Drug-Resistance in Cancer Cells. Nutrients. 2020 Jun 17;12(6):1798. https://doi.org/10.3390/nu12061798. PMID: 32560347 Free PMC article. Review.
- Ribone SR, Ferronato MJ, Vitale C, et al. Vitamin D receptor exhibits different pharmacodynamic features in tumoral and normal microenvironments: A molecular modeling study. J Steroid Biochem Mol Biol. 2020 Jun;200:105649. https://doi.org/10.1016/j.jsbmb.2020.105649. Epub 2020 Mar 3. PMID: 32142933
- Schöttker B, Kuznia S, Laetsch DC, et al. Protocol of the VICTORIA study: personalized vitamin D supplementation for reducing or preventing fatigue and enhancing quality of life of patients with colorectal tumor - randomized intervention trial. BMC Cancer. 2020 Aug 8;20(1):739. https://doi.org/10.1186/s12885-020-07219-z. PMID: 32770972
- Shahrzad MK, Gharehgozlou R, Fadaei S, et al. Vitamin D and non-coding RNAs: new insights into the regulation of breast cancer. Curr Mol Med. 2020 Jul 12. https://doi.org/10.2174/1566524020666200712182137. Online ahead of print. PMID: 32652908
- Shan NL, Minden A, Furmanski P, et al. Analysis of the Transcriptome: Regulation of Cancer Stemness in Breast Ductal Carcinoma In Situ by Vitamin D Compounds. Cancer Prev Res (Phila). 2020 Aug;13(8):673-686. https://doi.org/10.1158/1940-6207.CAPR-19-0566. Epub 2020 May 28. PMID: 32467291
- Suksawatamnuay S, Sriphoosanaphan S, Aumpansub P, et al. Association between Vitamin D Receptor Single-Nucleotide Polymorphisms and Colorectal Cancer in the Thai Population: A Case-Control Study. Biomed Res Int. 2020 Jun 15;2020:7562958. https://doi.org/10.1155/2020/7562958. eCollection 2020. PMID: 32626760
- Sun L, Arbesman J, Piliang M. Vitamin D, autoimmunity and immune-related adverse events of immune checkpoint inhibitors. Arch Dermatol Res. 2020 Jun 9. https://doi.org/10.1007/s00403-020-02094-x. Online ahead of print. PMID: 32519001 Review.
- Torkko K, Till C, Tangen CM, et al. Vitamin D Pathway and Other Related Polymorphisms and Risk of Prostate Cancer: Results from the Prostate Cancer Prevention Trial. Cancer Prev Res (Phila). 2020 Jun;13(6):521-530. https://doi.org/10.1158/1940-6207.CAPR-19-0413. Epub 2020 Feb 26. PMID: 32102946
- Troja C, Hoofnagle AN, Szpiro A, et al. Serum Concentrations of Emerging Vitamin D Biomarkers and Detection of Prevalent High-Risk HPV Infection in Mid-adult Women. Cancer Epidemiol Biomarkers Prev. 2020 Jul;29(7):1468-1474. https://doi.org/10.1158/1055-9965.EPI-20-0126. Epub 2020 Apr 21. PMID: 32317302
- Udeabor SE, Albejadi AM, Al-Shehri WAK, et al. Serum levels of 25-hydroxy-vitamin D in patients with oral squamous cell carcinoma: Making a case for chemoprevention. Clin Exp Dent Res. 2020 Aug;6(4):428-432. https://doi.org/10.1002/cre2.294. Epub 2020 Apr 4. PMID: 32246747
- van Vliet S, Fappi A, Reeds DN, et al. No independent or combined effects of vitamin D and conjugated linoleic acids on muscle protein synthesis in older adults: a randomized, double-blind, placebo-controlled clinical trial. Am J Clin Nutr. 2020 Aug 29:nqaa240. https://doi.org/10.1093/ajcn/nqaa240. Online ahead of print. PMID: 32860399
- Wang H, Zhao L, Liu H, et al. Variants in SNAI1, AMDHD1 and CUBN in vitamin D pathway genes are associated with breast cancer risk: a large-scale analysis of 14 GWASs in the DRIVE study. Am J Cancer Res. 2020 Jul 1;10(7):2160-2173. eCollection 2020. PMID: 32775008
- Xu J, Chen K, Zhao F, et al. Association between vitamin D/calcium intake and 25-hydroxyvitamin D and risk of ovarian cancer: a dose-response relationship meta-analysis. Eur J Clin Nutr. 2020 Aug 19. https://doi.org/10.1038/s41430-020-00724-1. Online ahead of print. PMID: 32814859 Review.
- Yin J, Yin LY, Freedman ND, et al. Independent and joint associations between serum calcium, 25-hydroxy vitamin D and the risk of primary liver cancer: a prospective nested case-control study. Cancer Epidemiol Biomarkers Prev. 2020 Aug 20:cebp.0417.2020. https://doi.org/10.1158/1055-9965.EPI-20-0417. Online ahead of print. PMID: 32856608
- Yuan C, Ng K. Vitamin D supplementation: a potential therapeutic agent for metastatic colorectal cancer. Br J Cancer. 2020 Jul 6. https://doi.org/10.1038/s41416-020-0958-8. Online ahead of print. PMID: 32624575

- Zhang X, Fang YJ, Feng XL, et al. Interactions Between Vitamin D and Calcium Intake, Vitamin D Receptor Genetic Polymorphisms, and Colorectal Cancer Risk. Dig Dis Sci. 2020 Jul 5. https://doi.org/10.1007/s10620-020-06455-4. Online ahead of print. PMID: 32627088
- Zhang Y, Jiang X, Li X, et al. Serum Vitamin D Levels and Risk of Liver Cancer: A Systematic Review and Dose-Response Meta-Analysis of Cohort Studies. Nutr Cancer. 2020 Jul 24:1-9. https://doi.org/10.1080/01635581.2020.1797127. Online ahead of print. PMID: 32705896
- Zhou L, Chen B, Sheng L, et al. The effect of vitamin D supplementation on the risk of breast cancer: a trial sequential meta-analysis. Breast Cancer Res Treat. 2020 Jul;182(1):1-8. https://doi.org/10.1007/s10549-020-05669-4. Epub 2020 May 13. PMID: 32405914 Review.

PEDIATRIA

- Aierken A, Yusufu B, Xu P. Correlation between asthmatic infants with rickets and vitamin D, inflammatory factors and immunoglobulin E. Exp Ther Med. 2020 Sep;20(3):2122-2126. https://doi.org/10.3892/etm.2020.8949. Epub 2020 Jun 26. PMID: 32765686
- Al-Shawwa B, Ehsan Z, Ingram DG. Vitamin D and sleep in children. J Clin Sleep Med. 2020 Jul 15;16(7):1119-1123. https://doi.org/10.5664/jcsm.8440. PMID: 32672533
- Al Khalifah R, Alsheikh R, Alnasser Y, et al. The impact of vitamin D food fortification and health outcomes in children: a systematic review and meta-regression. Syst Rev. 2020 Jun 16;9(1):144. https://doi.org/10.1186/s13643-020-01360-3. PMID: 32546259
- Brustad N, Bisgaard H, Chawes BL. Maternal High-Dose Vitamin D Supplementation and Offspring Bone Mineralization Until Age 6 Years-Reply. JAMA Pediatr. 2020 Aug 10. https://doi.org/10.1001/jamapediatrics.2020.2017. Online ahead of print. PMID: 32797147
- Chou HD, Yao TC, Huang YS, et al. Myopia in school-aged children with preterm birth: the roles of time spent outdoors and serum vitamin D. Br J Ophthalmol. 2020 Jun 19:bjophthalmol-2019-315663. https://doi.org/10.1136/bjophthalmol-2019-315663. Online ahead of print. PMID: 32561534
- Chung M, Ruan M, Cara KC, et al. Vitamin D and Calcium in Children 0-36 Months: A Scoping Review of Health Outcomes. J Am Coll Nutr. 2020 Jul 14:1-30. https://doi.org/10.1080/07315724.2020.1774822. Online ahead of print. PMID: 32662755
- Cuadrado-Soto E, López-Sobaler AM, Jiménez-Ortega AI, et al. Usual Dietary Intake, Nutritional Adequacy and Food Sources of Calcium, Phosphorus, Magnesium and Vitamin D of Spanish Children Aged One to <10 Years. Findings from the EsNuPI Study. Nutrients. 2020 Jun 16;12(6):1787. https://doi.org/10.3390/nu12061787. PMID: 32560110
- Czerwińska A, Krzyścin J. Numerical estimations of the daily amount of skin-synthesized vitamin D by preschool children in Poland. J Photochem Photobiol B. 2020 Jul;208:111898. https://doi.org/10.1016/j.jphotobiol.2020.111898. Epub 2020 May 16. PMID: 32460118
- Dabas A, Bharadwaj M, Shah D, et al. Online Survey of Vitamin D Supplementation Practices in Children and Adolescents. Indian Pediatr. 2020 Aug 15;57(8):749-750. PMID: 32844763
- Das S, Sanchez JJ, Alam A, et al. Dietary Magnesium, Vitamin D, and Animal Protein Intake and Their Association to the Linear Growth Trajectory of Children from Birth to 24 Months of Age: Results From MAL-ED Birth Cohort Study Conducted in Dhaka, Bangladesh. Food Nutr Bull. 2020 Jun;41(2):200-210. https://doi.org/10.1177/0379572119892408. Epub 2020 Feb 17. PMID: 32064926
- Farnaghi F, Hassanian-Moghaddam H, Zamani N, et al. Vitamin D toxicity in a pediatric toxicological referral center; a cross-sectional study from Iran. BMC Pediatr. 2020 Jul 20;20(1):350. https://doi.org/10.1186/s12887-020-02240-4. PMID: 32684163
- Feketea G, Bocsan CI, Stanciu LA, et al. The Role of Vitamin D Deficiency in Children With Recurrent Wheezing-Clinical Significance. Front Pediatr. 2020 Jun 30;8:344. https://doi.org/10.3389/fped.2020.00344. eCollection 2020. PMID: 32695735
- Hemmingway A, Fisher D, Berkery T, et al. Adherence to the infant vitamin D supplementation policy in Ireland. Eur J Nutr. 2020 Jul 17. https://doi.org/10.1007/s00394-020-02334-w. Online ahead of print. PMID: 32681322
- Kawashima H, Kimura M, Morichi S, et al. Serum 25-hydroxy vitamin D levels in Japanese infants younger than 3-months old with respiratory syncytial virus infection. Jpn J Infect Dis. 2020 Jun 30. https://doi.org/10.7883/yoken.JJID.2019.541. Online ahead of print. PMID: 32611972
- Kelishadi R, Heidari-Beni M, Akbarian SA, et al. Genetic Variation in Cytochrome P450 2R1 and Vitamin D Binding Protein Genes are associated with Vitamin D Deficiency in Adolescents. Int J Vitam Nutr Res. 2020 Jun;90(3-4):339-345. https://doi.org/10.1024/0300-9831/a000632. Epub 2019 Nov 15. PMID: 32517587
- Kozgar SAM, Chay P, Munns CF. Screening of vitamin D and calcium concentrations in neonates of mothers at high risk of vitamin D deficiency. BMC Pediatr. 2020 Jul 4;20(1):332. https://doi.org/10.1186/s12887-020-02204-8. PMID: 32620093
- Kvammen JA, Thomassen RA, Kjeserud CN, et al. Bone mineral density and vitamin D in paediatric intestinal failure patients receiving home parenteral nutrition. Clin Nutr ESPEN. 2020 Oct;39:234-241. https://doi.org/10.1016/j.clnesp.2020.06.006. Epub 2020 Jul 14. PMID: 32859323
- Loyal J, Cameron A. Vitamin D in Children: Can We Do Better? Pediatrics. 2020 Jun;145(6):e20200504. https://doi.org/10.1542/peds.2020-0504. Epub 2020 May 18. PMID: 32424079
- Mahmoudzadeh H, Nikibakhsh AA, Pashapour S, et al. Relationship between low serum vitamin D status and urinary tract infection in children: a case-control study. Paediatr Int Child Health. 2020 Aug;40(3):181-185. https://doi.org/10.1080/20469047.2020.1771244. Epub 2020 Jun 3. PMID: 32490740
- Malden S, Gillespie J, Hughes A, et al. Obesity in young children and its relationship with diagnosis of asthma, vitamin D

deficiency, iron deficiency, specific allergies and flat-footedness: A systematic review and meta-analysis. Obes Rev. 2020 Aug 18. https://doi.org/10.1111/obr.13129. Online ahead of print. PMID: 32808447 Review.

- Matejek T, Zemankova J, Malakova J, et al. Severe vitamin D deficiency in preterm infants: possibly no association with clinical outcomes? J Matern Fetal Neonatal Med. 2020 Jun 1:1-9. https://doi.org/10.1080/14767058.2020.1762560. Online ahead of print. PMID: 32482110
- Mehta CH, Close MF, Dornhoffer JR, et al. Vitamin D Deficiency, Hypocalcemia, and Hearing Loss in Children. Otol Neurotol. 2020 Aug;41(7):940-947. https://doi.org/10.1097/MAO.0000000000002676. PMID: 32658400
- M KK, Das S, Biswal N, et al. Vitamin D Status at Admission and Its Association With Mortality in Children Admitted to the Pediatric Intensive Care Unit. Cureus. 2020 Jun 2;12(6):e8413. https://doi.org/10.7759/cureus.8413. PMID: 32626628
- Mutua AM, Nampijja M, Elliott AM, et al. Vitamin D Status Is Not Associated with Cognitive or Motor Function in Pre-School Ugandan Children. Nutrients. 2020 Jun 3;12(6):1662. https://doi.org/10.3390/nu12061662. PMID: 32503251
- Rueter K, Jones AP, Siafarikas A, et al. In "High-Risk" Infants with Sufficient Vitamin D Status at Birth, Infant Vitamin D Supplementation Had No Effect on Allergy Outcomes: A Randomized Controlled Trial. Nutrients. 2020 Jun 11;12(6):1747. https://doi.org/10.3390/nu12061747. PMID: 32545250
- Said NA, Kamenwa RW, Limbe MS, et al. Prevalence of vitamin D deficiency in exclusively breastfed infants at a tertiary healthcare facility in Nairobi, Kenya. Arch Endocrinol Metab. 2020 Aug 28:S2359-39972020005006204. https://doi.org/10.20945/2359-3997000000281. Online ahead of print. PMID: 32876144
- Scheffer-Rath ME, Boot AM. The Many Facets of Vitamin D in the Pediatric Population. Pediatr Endocrinol Rev. 2020 Aug;17(4):293-301. https://doi.org/10.17458/per.vol17.2020.srb.vitamindpediatricpopulation. PMID: 32780952
- Serrano NC, Romero SL, Suárez DP, et al. Efficacy of oral Vitamin D supplementation in reducing body mass index and lipid profile in adolescents and young adults in Colombia: A pilot clinical trial protocol nested in the SIMBA cohort. Medicine (Baltimore). 2020 Aug 28;99(35):e21722. https://doi.org/10.1097/MD.0000000000021722. PMID: 32871891
- Shen H, Lin Z, Yuan J, et al. Low vitamin D levels and frequencies of regulatory T cells (Tregs) are associated with adenotonsillar hypertrophy in children. Int J Pediatr Otorhinolaryngol. 2020 Jul 10;138:110231. https://doi.org/10.1016/j.ijporl.2020.110231. Online ahead of print. PMID: 32705995
- Sherkatolabbasieh H, Firouzi M, Shafizadeh S, et al. Evaluation of the relationship between vitamin D levels and prevalence of urinary tract infections in children. New Microbes New Infect. 2020 Jul 7;37:100728. https://doi.org/10.1016/j.nmni.2020.100728. eCollection 2020 Sep. PMID: 32802335
- Simunovic M, Supe-Domic D, Karin Z, et al. The Relationship of Vitamin D Status, Adherence to the Mediterranean Diet, and Physical Activity in Obese Children and Adolescents. J Med Food. 2020 Aug 12. https://doi.org/10.1089/jmf.2020.0032. Online ahead of print. PMID: 32783677
- Siyah Bilgin B, Gonulal D. Association between vitamin D level and community-acquired late-onset neonatal sepsis. Arch Argent Pediatr. 2020 Aug;118(4):265-272. https://doi.org/10.5546/aap.2020.eng.265. PMID: 32677788
- Specht IO, Janbek J, Thorsteinsdottir F, et al. Neonatal vitamin D levels and cognitive ability in young adulthood. Eur J Nutr. 2020 Aug;59(5):1919-1928. https://doi.org/10.1007/s00394-019-02042-0. Epub 2019 Jul 5. PMID: 31278417
- Su G, Jia D. Vitamin D in Acute and Critically Sick Children with a Subgroup of Sepsis and Mortality: A Meta-Analysis. Nutr Cancer. 2020 Jun 29:1-8. https://doi.org/10.1080/01635581.2020.1784964. Online ahead of print. PMID: 32597305
- Tang Z, Huang S, Ma R, et al. Low vitamin D status is associated with obesity but no other cardiovascular risk factors in Chinese children and adolescents. Nutr Metab Cardiovasc Dis. 2020 Aug 28;30(9):1573-1581. https://doi.org/10.1016/j.numecd.2020.05.019. Epub 2020 Jun 2. PMID: 32605882
- Yu SB, Lee Y, Oh A, et al. Efficacy and safety of parenteral vitamin D therapy in infants and children with vitamin D deficiency caused by intestinal malabsorption. Ann Pediatr Endocrinol Metab. 2020 Jun;25(2):112-117. https://doi.org/10.6065/apem.1938142.071. Epub 2020 Jun 30. PMID: 32615691
- Zung A, Topf-Olivestone C, Shinwell ES, et al. Reassessing vitamin D supplementation in preterm infants: a prospective study and review of the literature. J Pediatr Endocrinol Metab. 2020 Aug 31:/j/jpem.ahead-of-print/jpem-2020-0370/jpem-2020-0370.xml. https://doi.org/10.1515/jpem-2020-0370. Online ahead of print. PMID: 32866125

PNEUMOLOGIA

- Ahmed AE, Hassan MH, Toghan R, et al. Analysis of 25-hydroxy cholecalciferol, immunoglobulin E, and vitamin D receptor single nucleotide polymorphisms (Apa1, Taq1, and Bsm1), among sample of Egyptian children with bronchial asthma: A case-control study. Pediatr Pulmonol. 2020 Jun;55(6):1349-1358. https://doi.org/10.1002/ppul.24785. Epub 2020 Apr 20. PMID: 32311846
- Bouloukaki I, Tsiligianni I, Mermigkis C, et al. Vitamin D deficiency in patients evaluated for obstructive sleep apnea: is it associated with disease severity? Sleep Breath. 2020 Jul 10. https://doi.org/10.1007/s11325-020-02142-w. Online ahead of print. PMID: 32648186
- Bradley R, Schloss J, Brown D, et al. The effects of Vitamin D on acute viral respiratory infections: a rapid review. Adv Integr Med. 2020 Aug 3. https://doi.org/10.1016/j.aimed.2020.07.011. Online ahead of print. PMID: 32837896
- Callejo M, Mondejar-Parreño G, Morales-Cano D, et al. Vitamin D deficiency downregulates TASK-1 channels and induces pulmonary vascular dysfunction.

Am J Physiol Lung Cell Mol Physiol. 2020 Jul 29. https://doi.org/10.1152/ajplung.00475.2019. Online ahead of print. PMID: 32726132

- Camargo CA, Sluyter J, Stewart AW, et al. Effect of Monthly High-Dose Vitamin D Supplementation on Acute Respiratory Infections in Older Adults: A Randomized Controlled Trial. Clin Infect Dis. 2020 Jul 11;71(2):311-317. https://doi.org/10.1093/cid/ciz801. PMID: 31420647
- Chen C, Weng H, Zhang X, et al. Low-Dose Vitamin D Protects Hyperoxia-Induced Bronchopulmonary Dysplasia by Inhibiting Neutrophil Extracellular Traps. Front Pediatr. 2020 Jul 3;8:335. https://doi.org/10.3389/fped.2020.00335. eCollection 2020. PMID: 32719755
- Despotović M, Jevtović Stoimenov T, Stanković I, et al. Genetic variants of vitamin D receptor and antioxidant enzyme genes in bronchial asthma: Epistatic interactions. Ann Allergy Asthma Immunol. 2020 Jul 27:S1081-1206(20)30512-3. https://doi.org/10.1016/j.anai.2020.07.020. Online ahead of print. PMID: 32730806
- Forno E, Bacharier LB, Phipatanakul W, et al. Effect of Vitamin D3 Supplementation on Severe Asthma Exacerbations in Children With Asthma and Low Vitamin D Levels: The VDKA Randomized Clinical Trial. JAMA. 2020 Aug 25;324(8):752-760. https://doi.org/10.1001/jama.2020.12384. PMID: 32840597
- Galvão AA, de Araújo Sena F, Andrade Belitardo EMM, et al. Genetic polymorphisms in vitamin D pathway influence 25(OH)D levels and are associated with atopy and asthma. Allergy Asthma Clin Immunol. 2020 Jul 9;16:62. https://doi.org/10.1186/s13223-020-00460-y. eCollection 2020. PMID: 32834827
- Ganji V, Al-Obahi A, Yusuf S, et al. Author Correction: Serum vitamin D is associated with improved lung function markers but not with prevalence of asthma, emphysema, and chronic bronchitis. Sci Rep. 2020 Aug 19;10(1):14118. https://doi.org/10.1038/s41598-020-70344-z. PMID: 32814803
- Ganji V, Al-Obahi A, Yusuf S, et al. Serum vitamin D is associated with improved lung function markers but not with prevalence of asthma, emphysema, and chronic bronchitis. Sci Rep. 2020 Jul 9;10(1):11542. https://doi.org/10.1038/s41598-020-67967-7. PMID: 32647146
- Golan-Tripto I, Bistritzer J, Loewenthal N, et al. The effect of vitamin D administration on vitamin D status and respiratory morbidity in late premature infants. Pediatr Pulmonol. 2020 Aug 5. https://doi.org/10.1002/ppul.25006. Online ahead of print. PMID: 32757317
- Hasanloei MAV, Rahimlou M, Eivazloo A, et al. Effect of Oral Versus Intramuscular Vitamin D Replacement on Oxidative Stress and Outcomes in Traumatic Mechanical Ventilated Patients Admitted to Intensive Care Unit. Nutr Clin Pract. 2020 Jun;35(3):548-558. https://doi.org/10.1002/ncp.10404. Epub 2019 Sep 5. PMID: 31486158
- Hiemstra PS, de Jongh RT. Vitamin D Deficiency in Asthma and Chronic Obstructive Pulmonary Disease. A Chicken-or-Egg Story. Am J Respir Crit Care Med. 2020 Aug 1;202(3):312-313. https://doi.org/10.1164/rccm.202004-1012ED. PMID: 32352312
- Hong M, Xiong T, Huang J, et al. Association of vitamin D supplementation with respiratory tract infection in infants. Matern Child Nutr. 2020 Jul;16(3):e12987. https://doi.org/10.1111/mcn.12987. Epub 2020 Mar 5. PMID: 32141233
- Jolliffe DA, Stefanidis C, Wang Z, et al. Vitamin D Metabolism Is Dysregulated in Asthma and Chronic Obstructive Pulmonary Disease. Am J Respir Crit Care Med. 2020 Aug 1;202(3):371-382. https://doi.org/10.1164/rccm.201909-1867OC. PMID: 32186892
- Karbalaei M, Ghazvini K, Keikha M. Clinical efficacy of vitamin D supplementation on pulmonary TB patients: The evidence of clinical trials. J Clin Tuberc Other Mycobact Dis. 2020 Jul 22;20:100174. https://doi.org/10.1016/j.jctube.2020.100174. eCollection 2020 Aug. PMID: 32743080 Free PMC article.
- Leiter K, Franks K, Borland ML, et al. Vitamin D receptor polymorphisms are associated with severity of wheezing illnesses and asthma exacerbations in children. J Steroid Biochem Mol Biol. 2020 Jul;201:105692. https://doi.org/10.1016/j.jsbmb.2020.105692. Epub 2020 May 5. PMID: 32380236
- Loukou I, Moustaki M, Sardeli O, et al. Association of vitamin D status with lung function measurements in children and adolescents with cystic fibrosis. Pediatr Pulmonol. 2020 Jun;55(6):1375-1380. https://doi.org/10.1002/ppul.24460. Epub 2019 Jul 24. PMID: 31338968
- Lu M, Litonjua AA, O'Connor GT, et al. Effect of early and late prenatal vitamin D and maternal asthma status on offspring asthma or recurrent wheeze. J Allergy Clin Immunol. 2020 Aug 18:S0091-6749(20)31164-7. https://doi.org/10.1016/j.jaci.2020.06.041. Online ahead of print. PMID: 32822692
- Malandish A, Tartibian B, Rahmati M, et al. The effect of moderate-intensity aerobic training on pulmonary function and estrogen receptor-alpha gene in postmenopausal women with vitamin D deficiency: A randomized control trial. Respir Physiol Neurobiol. 2020 Jul 30;281:103510. https://doi.org/10.1016/j.resp.2020.103510. Online ahead of print. PMID: 32739460
- Mandell EW, Ryan S, Seedorf GJ, et al. Maternal Vitamin D Deficiency Causes Sustained Impairment of Lung Structure and Function and Increases Susceptibility to Hyperoxia-induced Lung Injury in Infant Rats. Am J Respir Cell Mol Biol. 2020 Jul;63(1):79-91. https://doi.org/10.1165/rcmb.2019-0295OC. PMID: 32135073
- Mathyssen C, Aelbrecht C, Serré J, et al. Local expression profiles of vitamin D-related genes in airways of COPD patients. Respir Res. 2020 Jun 3;21(1):137. https://doi.org/10.1186/s12931-020-01405-0. PMID: 32493333
- Park HW, Lim G, Park YM, et al. Association between vitamin D level and bronchopulmonary dysplasia: A systematic review and meta-analysis. PLoS One. 2020 Jul 6;15(7):e0235332. https://doi.org/10.1371/journal.pone.0235332. eCollection 2020. PMID: 32628705
- Qin R, Huang R, Fu W, et al. Sputum vitamin D binding protein: A potential biomarker of airway vitamin D axis in asthma. Ann Allergy Asthma Immunol. 2020 Sep;125(3):350-352. https://doi.org/10.1016/j.anai.2020.06.005. Epub 2020 Jun 8. PMID: 32526379
- Schrumpf JA, van der Does AM, Hiemstra

PS. Impact of the Local Inflammatory Environment on Mucosal Vitamin D Metabolism and Signaling in Chronic Inflammatory Lung Diseases. Front Immunol. 2020 Jul 10;11:1433. https://doi.org/10.3389/fimmu.2020.01433. eCollection 2020. PMID: 32754156

- Siachpazidou DI, Kotsiou OS, Stavrou V, et al. Serum vitamin D levels in patients with obstructive sleep apnea syndrome and level changes after continuous positive airway pressure therapy. Sleep Breath. 2020 Aug 1. https://doi.org/10.1007/s11325-020-02146-6. Online ahead of print. PMID: 32740855
- Sikorska-Szaflik H, Sozańska B. The Role of Vitamin D in Respiratory Allergies Prevention. Why the Effect Is so Difficult to Disentangle? Nutrients. 2020 Jun 17;12(6):1801. https://doi.org/10.3390/nu12061801. PMID: 32560403
- Sudfeld CR, Mugusi F, Muhihi A, et al. Efficacy of vitamin D(3) supplementation for the prevention of pulmonary tuberculosis and mortality in HIV: a randomised, double-blind, placebo-controlled trial. Lancet HIV. 2020 Jul;7(7):e463-e471. https://doi.org/10.1016/S2352-3018(20)30108-9. PMID: 32621874 Clinical Trial.
- Tang XZ, Huang T, Ma Y, et al. [Meta-analysis of efficacy and safety of vitamin D supplementation in the treatment of pulmonary tuberculosis]. Zhonghua Yi Xue Za Zhi. 2020 Aug 25;100(32):2525-2531. https://doi.org/10.3760/cma.j.cn112137-20200121-00146. PMID: 32829600
- Torjesen I. Evidence does not support vitamin D for reducing respiratory infections, reviews conclude. BMJ. 2020 Jun 30;369:m2629. https://doi.org/10.1136/bmj.m2629. PMID: 32606036
- Wang P, Tan ZX, Fu L, et al. Gestational vitamin D deficiency impairs fetal lung development through suppressing type II pneumocyte differentiation. Reprod Toxicol. 2020 Jun;94:40-47. https://doi.org/10.1016/j.reprotox.2020.03.008. Epub 2020 Apr 21. PMID: 32330513
- Zheng S, Yang J, Hu X, et al. Vitamin D attenuates lung injury via stimulating epithelial repair, reducing epithelial cell apoptosis and inhibits TGF-β induced epithelial to mesenchymal transition. Biochem Pharmacol. 2020 Jul;177:113955. https://doi.org/10.1016/j.bcp.2020.113955. Epub 2020 Apr 3. PMID: 32251673

PSICHIATRIA

- Avinun R, Romer AL, Israel S. Vitamin D polygenic score is associated with neuroticism and the general psychopathology factor. Prog Neuropsychopharmacol Biol Psychiatry. 2020 Jun 8;100:109912. https://doi.org/10.1016/j.pnpbp.2020.109912. Epub 2020 Mar 6. PMID: 32151694
- Bigman G. Vitamin D metabolites, D(3) and D(2), and their independent associations with depression symptoms among adults in the United States. Nutr Neurosci. 2020 Jul 20:1-9. https://doi.org/10.1080/1028415X.2020.1794422. Online ahead of print. PMID: 32684140
- Cheng YC, Huang YC, Huang WL. The effect of vitamin D supplement on negative emotions: A systematic review and meta-analysis. Depress Anxiety. 2020 Jun;37(6):549-564. https://doi.org/10.1002/da.23025. Epub 2020 May 4. PMID: 32365423
- Fipps DC, Rainey E. Psychotic Features Abated with Vitamin D Treatment in a Patient with Major Depressive Disorder. Case Rep Psychiatry. 2020 Jun 19;2020:2046403. https://doi.org/10.1155/2020/2046403. eCollection 2020. PMID: 32637180
- Jahrami H, Bragazzi NL, Grant WB, et al. Vitamin D Doses from Solar Ultraviolet and Dietary Intakes in Patients with Depression: Results of a Case-Control Study. Nutrients. 2020 Aug 26;12(9):E2587. https://doi.org/10.3390/nu12092587. PMID: 32858873
- Jegede O, Gayam V, Gunasekara R, et al. Patterns of Vitamin D Deficiency in a Community Outpatient Psychiatric Practice: a Real-World Evaluation of Treatment Gaps. Psychiatr Q. 2020 Jun;91(2):561-570. https://doi.org/10.1007/s11126-020-09720-x. PMID: 32086668
- Kerley CP, Elnazir B, Greally P, et al. Blunted serum 25(OH)D response to vitamin D(3) supplementation in children with autism. Nutr Neurosci. 2020 Jul;23(7):537-542. https://doi.org/10.1080/1028415X.2018.1529342. Epub 2018 Oct 10. PMID: 30301427
- Kim SH, Lee HJ, Chae CH, et al. Association between serum vitamin D and depressive symptoms in apparently healthy male adults undergoing routine health check-ups at a single centre. Public Health Nutr. 2020 Jun 2:1-9. https://doi.org/10.1017/S1368980020000592. Online ahead of print. PMID: 32482175
- Kim SY, Jeon SW, Lim WJ, et al. Vitamin D deficiency and suicidal ideation: A cross-sectional study of 157,211 healthy adults. J Psychosom Res. 2020 Jul;134:110125. https://doi.org/10.1016/j.jpsychores.2020.110125. Epub 2020 Apr 25. PMID: 32388454
- Krivoy A, Satz J, Hornfeld SH, et al. Low levels of serum vitamin D in clozapine-treated schizophrenia patients are associated with high levels of the proinflammatory cytokine IL-6. Int Clin Psychopharmacol. 2020 Jul;35(4):208-213. https://doi.org/10.1097/YIC.0000000000000303. PMID: 31913874
- Lee HJ, Choi H, Yoon IY. Impacts of serum vitamin D levels on sleep and daytime sleepiness according to working conditions. J Clin Sleep Med. 2020 Jul 15;16(7):1045-1054. https://doi.org/10.5664/jcsm.8390. PMID: 32108568
- Liu C, Jiang W, Deng M, et al. Lower vitamin D levels in panic attacks in Shanghai: A case-control study. Asian J Psychiatr. 2020 Jun;51:101948. https://doi.org/10.1016/j.ajp.2020.101948. Epub 2020 Feb 18. PMID: 32109855
- Postolache TT, Akram F, Lee EE, et al. Increased brain vitamin D receptor expression and decreased expression of cathelicidin antimicrobial peptide in individuals who died by suicide. J Psychiatr Res. 2020 Jun;125:75-84. https://doi.org/10.1016/j.jpsychires.2020.02.027. Epub 2020 Feb 27. PMID: 32213352
- Rhee SJ, Lee H, Ahn YM. Serum Vitamin D Concentrations Are Associated With Depressive Symptoms in Men: The Sixth Korea National Health and Nutrition Examination Survey 2014. Front Psychiatry. 2020 Jul 30;11:756. https://doi.org/10.3389/fpsyt.2020.00756. eCollection 2020. PMID: 32848932
- Sotoudeh G, Raisi F, Amini M, et al. Vita-

min D deficiency mediates the relationship between dietary patterns and depression: a case-control study. Ann Gen Psychiatry. 2020 Jun 3;19:37. https://doi.org/10.1186/s12991-020-00288-1. eCollection 2020. PMID: 32518578

- van der Leeuw C, de Witte LD, Stellinga A, et al. Vitamin D concentration and psychotic disorder: associations with disease status, clinical variables and urbanicity. Psychol Med. 2020 Jul;50(10):1680-1686. https://doi.org/10.1017/S0033291719001739. Epub 2019 Jul 22. PMID: 31327333
- Vellekkatt F, Menon V, Rajappa M, et al. Effect of adjunctive single dose parental vitamin D replacement on improving depression ratings in major depression with concurrent vitamin D deficiency: A double-blind randomized placebo-controlled trial. J Psychiatr Res. 2020 Aug 4;129:250-256. https://doi.org/10.1016/j.jpsychires.2020.07.037. Online ahead of print. PMID: 32823218
- Wang X, Jiao X, Xu M, et al. Effects of circulating vitamin D concentrations on emotion, behavior and attention: A cross-sectional study in preschool children with follow-up behavior experiments in juvenile mice. J Affect Disord. 2020 Oct 1;275:290-298. https://doi.org/10.1016/j.jad.2020.06.043. Epub 2020 Jul 13. PMID: 32734921
- Yu H, Zhang Z, Liu J, et al. Association study between genetic variants in vitamin D metabolism related genes and childhood autism spectrum disorder. Metab Brain Dis. 2020 Aug;35(6):971-978. https://doi.org/10.1007/s11011-020-00570-x. Epub 2020 Apr 15. PMID: 32297168
- Zhang WY, Guo YJ, Wang KY, et al. Neuroprotective effects of vitamin D and 17ß-estradiol against ovariectomy-induced neuroinflammation and depressive-like state: Role of the AMPK/NF-ωB pathway. Int Immunopharmacol. 2020 Sep;86:106734. https://doi.org/10.1016/j.intimp.2020.106734. Epub 2020 Jun 27. PMID: 32604067
- Zhu JL, Luo WW, Cheng X, et al. Vitamin D deficiency and Schizophrenia in Adults: A Systematic Review and Meta-analysis of Observational Studies. Psychiatry Res. 2020 Jun;288:112959. https://doi.org/10.1016/j.psychres.2020.112959. Epub 2020 Apr 18. PMID: 32335466 Review.
- Şengenç E, Kıykım E, Saltik S. Vitamin D levels in children and adolescents with autism. J Int Med Res. 2020 Jul;48(7):300060520934638. https://doi.org/10.1177/0300060520934638. PMID: 32668174

REUMATOLOGIA

- Abdul-Razzak KK, Kofahi RM. Carpel tunnel syndrome: A link with vitamin D and calcium. Biomed Rep. 2020 Sep;13(3):15. https://doi.org/10.3892/br.2020.1322. Epub 2020 Jun 26. PMID: 32765854
- Al-Taiar A, Rahman A, Al-Sabah R, et al. Vitamin D levels in relation to low back pain during adolescence. Br J Nutr. 2020 Jun 14;123(11):1302-1311. https://doi.org/10.1017/S0007114520000720. Epub 2020 Feb 26. PMID: 32100652
- Ata AM, Kara M, Kara Ö, et al. Ultrasonographic measurements of the skin, fat and muscle in vitamin D deficiency. Int J Clin Pract. 2020 Jun;74(6):e13494. https://doi.org/10.1111/ijcp.13494. Epub 2020 Mar 9. PMID: 32100441
- Banjabi AA, Al-Ghafari AB, Kumosani TA, et al. Genetic influence of vitamin D receptor gene polymorphisms on osteoporosis risk. Int J Health Sci (Qassim). 2020 Jul-Aug;14(4):22-28. PMID: 32694969
- Bassatne A, Jafari A, Kassem M, et al. Delta-like 1 (DLK1) is a possible mediator of vitamin D effects on bone and energy metabolism. Bone. 2020 Sep;138:115510. https://doi.org/10.1016/j.bone.2020.115510. Epub 2020 Jul 1. PMID: 32622071
- Bass JJ, Nakhuda A, Deane CS, et al. Overexpression of the vitamin D receptor (VDR) induces skeletal muscle hypertrophy. Mol Metab. 2020 Aug 7:101059. https://doi.org/10.1016/j.molmet.2020.101059. Online ahead of print. PMID: 32771696
- Beserra SR, Souza FIS, Sarni ROS, et al. Association Between Low Vitamin D Levels and the Greater Impact of Fibromyalgia. J Clin Med Res. 2020 Jul;12(7):436-442. https://doi.org/10.14740/jocmr4136. Epub 2020 Jun 25. PMID: 32655738
- Bhattarai HK, Shrestha S, Rokka K, et al. Vitamin D, Calcium, Parathyroid Hormone, and Sex Steroids in Bone Health and Effects of Aging. J Osteoporos. 2020 Jun 17;2020:9324505. https://doi.org/10.1155/2020/9324505. eCollection 2020. PMID: 32612801
- Boroňová I, Bernasovská J, Mačeková S, et al. Association between vitamin D receptor gene polymorphisms (Fok I, Cdx-2) and bone mineral density in Slovak postmenopausal women. Anthropol Anz. 2020 Aug 12;77(3):195-203. https://doi.org/10.1127/anthranz/2020/1048. PMID: 32236287
- Brambilla L, Peretti GM, Sirtori P, et al. Outcome of total hip and total knee arthroplasty and vitamin D homeostasis. Br Med Bull. 2020 Aug 10:ldaa018. https://doi.org/10.1093/bmb/ldaa018. Online ahead of print. PMID: 32776138
- Burt LA, Billington EO, Rose MS, et al. Adverse effects of high-dose vitamin D supplementation on volumetric bone density are greater in females than males. J Bone Miner Res. 2020 Aug 10. https://doi.org/10.1002/jbmr.4152. Online ahead of print. PMID: 32777104
- Cardona-Cardona AF, Cerón Y Cerón JA. Vitamin D in Colombian patients with systemic lupus erythematosus and its correlation with disease activity. Lupus. 2020 Sep;29(10):1297-1304. https://doi.org/10.1177/0961203320937783. Epub 2020 Jul 5. PMID: 32623952
- Castro Corredor D, Ramírez Huaranga MA, Mínguez Sánchez MD, et al. Vitamin D, an inflammatory activity marker for spondyloarthritis? Arch Osteoporos. 2020 Aug 10;15(1):126. https://doi.org/10.1007/s11657-020-00805-5. PMID: 32778967
- Chen B, Zhu WF, Mu YY, et al. Association between vitamin D receptor BsmI, FokI, and Cdx2 polymorphisms and osteoporosis risk: an updated meta-analysis. Biosci Rep. 2020 Jul 31;40(7):BSR20201200. https://doi.org/10.1042/BSR20201200. PMID: 32627819
- Chen XM, Zhang YX, Bao YF, et al. Correlation analysis between vitamin D receptor gene polymorphism (BsmI) and hallux valgus. J Biol Regul Homeost Agents. 2020 Aug 28;34(4). https://doi.

org/10.23812/20-214-A. Online ahead of print. PMID: 32867408

- Chen Y, Cheng J, Chen Y, et al. Association between serum vitamin D and uric acid in the eastern Chinese population: a population-based cross-sectional study. BMC Endocr Disord. 2020 Jun 3;20(1):79. https://doi.org/10.1186/s12902-020-00560-1. PMID: 32493273
- Cimmino G, Morello A, Conte S, et al. Vitamin D inhibits Tissue Factor and CAMs expression in oxidized low-density lipoproteins-treated human endothelial cells by modulating NF-κB pathway. Eur J Pharmacol. 2020 Aug 2;885:173422. https://doi.org/10.1016/j.ejphar.2020.173422. Online ahead of print. PMID: 32755551
- Currò M, Ferlazzo N, Costanzo MG, et al. Vitamin D status influences transcriptional levels of RANKL and inflammatory biomarkers which are associated with activation of PBMC. Clin Chim Acta. 2020 Aug;507:219-223. https://doi.org/10.1016/j.cca.2020.04.041. Epub 2020 May 1. PMID: 32371216
- Daga N, Joseph F. Denosumab-induced severe hypocalcaemia in a patient with vitamin D deficiency. BMJ Case Rep. 2020 Aug 26;13(8):e234508. https://doi.org/10.1136/bcr-2020-234508. PMID: 32847872
- Debruin DA, Timpani CA, Lalunio H, et al. Exercise May Ameliorate the Detrimental Side Effects of High Vitamin D Supplementation on Muscle Function in Mice. J Bone Miner Res. 2020 Jun;35(6):1092-1106. https://doi.org/10.1002/jbmr.3985. Epub 2020 Mar 11. PMID: 32078180
- Deng J, Silver Z, Huang E, et al. The effect of calcium and vitamin D compounds on bone mineral density in patients undergoing glucocorticoid therapies: a network meta-analysis. Clin Rheumatol. 2020 Jul 17. https://doi.org/10.1007/s10067-020-05294-y. Online ahead of print. PMID: 32681366
- de Rezende Araújo II, Sampaio LHF, Bittar AJ, et al. The Relationship between Vitamin D Levels, Injury and Muscle Function in Adolescent Dancers. Int J Sports Med. 2020 Jun;41(6):360-364. https://doi.org/10.1055/a-1087-2130. Epub 2020 Feb 14. PMID: 32059241
- Dhaliwal R, Islam S, Mikhail M, et al. Effect of vitamin D on bone strength in older African Americans: a randomized controlled trial. Osteoporos Int. 2020 Jun;31(6):1105-1114. https://doi.org/10.1007/s00198-019-05275-1. Epub 2020 Jan 14. PMID: 31938818
- Duan BL, Mao YR, Xue LQ, et al. Determination of vitamin D and analysis of risk factors for osteoporosis in patients with chronic pain. World J Clin Cases. 2020 Jun 6;8(11):2150-2161. https://doi.org/10.12998/wjcc.v8.i11.2150. PMID: 32548145
- El-Banna HS, Gado SE. Vitamin D: does it help Tregs in active rheumatoid arthritis patients. Expert Rev Clin Immunol. 2020 Aug 25:1-7. https://doi.org/10.1080/1744666X.2020.1805317. Online ahead of print. PMID: 32783547
- Harrison SR, Jutley G, Li D, et al. Vitamin D and early rheumatoid arthritis. BMC Rheumatol. 2020 Jul 27;4:38. https://doi.org/10.1186/s41927-020-00134-7. eCollection 2020. PMID: 32728658
- Hosny KM, Bahmdan RH, Alhakamy NA, et al. Physically Optimized Nano-Lipid Carriers Augment Raloxifene and Vitamin D Oral Bioavailability in Healthy Humans for Management of Osteoporosis. J Pharm Sci. 2020 Jul;109(7):2145-2155. https://doi.org/10.1016/j.xphs.2020.03.009. Epub 2020 Mar 17. PMID: 32194094
- Hosoyama T, Iida H, Kawai-Takaishi M, et al. Vitamin D Inhibits Myogenic Cell Fusion and Expression of Fusogenic Genes. Nutrients. 2020 Jul 23;12(8):E2192. https://doi.org/10.3390/nu12082192. PMID: 32717927
- Hosseinzadeh P, Mohseni M, Minaie A, et al. Vitamin D Status in Children With Forearm Fractures: Incidence and Risk Factors. J Am Acad Orthop Surg Glob Res Rev. 2020 Aug;4(8):e2000150-5. https://doi.org/10.5435/JAAOSGlobal-D-20-00150. PMID: 32852920
- Hwang IY, Park KB, Chang SW, et al. Preoperative vitamin D level does not affect the short-term functional outcome after total knee arthroplasty in elderly women. Knee Surg Relat Res. 2020 Jun 11;32(1):30. https://doi.org/10.1186/s43019-020-00050-7. PMID: 32660608
- Kim DM, Shim IK, Shin MJ, et al. A Combination Treatment of Raloxifene and Vitamin D Enhances Bone-to-Tendon Healing of the Rotator Cuff in a Rat Model. Am J Sports Med. 2020 Jul;48(9):2161-2169. https://doi.org/10.1177/0363546520927015. Epub 2020 Jun 23. PMID: 32574070
- Kito H, Morihiro H, Sakakibara Y, et al. Downregulation of the Ca(2+)-activated K(+) channel K(Ca)3.1 in mouse preosteoblast cells treated with vitamin D receptor agonist. Am J Physiol Cell Physiol. 2020 Aug 1;319(2):C345-C358. https://doi.org/10.1152/ajpcell.00587.2019. Epub 2020 Jun 10. PMID: 32520608
- Kong C, Wang C, Shi Y, et al. Active vitamin D activates chondrocyte autophagy to reduce osteoarthritis via mediating the AMPK-mTOR signaling pathway. Biochem Cell Biol. 2020 Jun;98(3):434-442. https://doi.org/10.1139/bcb-2019-0333. Epub 2019 Dec 9. PMID: 31815524
- Lawley R, Syrop IP, Fredericson M. Vitamin D for Improved Bone Health and Prevention of Stress Fractures: A Review of the Literature. Curr Sports Med Rep. 2020 Jun;19(6):202-208. https://doi.org/10.1249/JSR.0000000000000718. PMID: 32516190
- Lee JH, Kim SJ, Byun YS, et al. The Association of Serum Vitamin D Level With the Severity of Dry Eye Parameters in Primary Sjögren Syndrome. Cornea. 2020 Jun;39(6):702-705. https://doi.org/10.1097/ICO.0000000000002234. PMID: 31868853
- Lee SU, Na KT, Lee YM, et al. Low vitamin D levels in post-menopausal women are associated with complex regional pain syndrome type I in surgically treated distal radius fractures. J Orthop Surg Res. 2020 Aug 14;15(1):328. https://doi.org/10.1186/s13018-020-01859-4. PMID: 32795337
- Levine MA. Diagnosis and Management of Vitamin D Dependent Rickets. Front Pediatr. 2020 Jun 12;8:315. https://doi.org/10.3389/fped.2020.00315. eCollection 2020. PMID: 32596195
- Lin EL, Gottesman GS, McAlister WH, et al. Healing of vitamin D deficiency rickets complicating hypophosphatasia suggests a role beyond circulating mineral sufficiency for

vitamin D in musculoskeletal health. Bone. 2020 Jul;136:115322. https://doi.org/10.1016/j.bone.2020.115322. Epub 2020 Mar 19. PMID: 32200022

- Li Q, Long X, Cai L. Letter to the Editor regarding "The relationship between serum vitamin D and fracture risk in the elderly: a meta-analysis". J Orthop Surg Res. 2020 Aug 7;15(1):306. https://doi.org/10.1186/s13018-020-01811-6. PMID: 32767995 Free PMC article.
- Li S, Wang Y, Zhang C. Network pharmacology strategy for predicting the correlation of Systemic Scleroderma with Vitamin D deficiency. Int Immunopharmacol. 2020 Sep;86:106702. https://doi.org/10.1016/j.intimp.2020.106702. Epub 2020 Jun 18. PMID: 32563782
- MacFarlane LA, Cook NR, Kim E, et al. The Effects of Vitamin D and Marine Omega-3 Fatty Acid Supplementation on Chronic Knee Pain in Older U.S. Adults: Results from a Randomized Trial. Arthritis Rheumatol. 2020 Jun 25. https://doi.org/10.1002/art.41416. Online ahead of print. PMID: 32583982
- Makida K, Nishida Y, Morita D, et al. Low energy irradiation of narrow-range UV-LED prevents osteosarcopenia associated with vitamin D deficiency in senescence-accelerated mouse prone 6. Sci Rep. 2020 Jul 17;10(1):11892. https://doi.org/10.1038/s41598-020-68641-8. PMID: 32681041
- Marshall K, Teo L, Shanahan C, et al. Inadequate calcium and vitamin D intake and osteoporosis risk in older Americans living in poverty with food insecurities. PLoS One. 2020 Jul 8;15(7):e0235042. https://doi.org/10.1371/journal.pone.0235042. eCollection 2020. PMID: 32639966
- Moo IH, Kam CJW, Cher EWL, et al. The effect of the comorbidity burden on vitamin D levels in geriatric hip fracture. BMC Musculoskelet Disord. 2020 Aug 8;21(1):524. https://doi.org/10.1186/s12891-020-03554-1. PMID: 32770993
- Narvaez J, Maldonado G, Guerrero R, et al. Vitamin D Megadose: Definition, Efficacy in Bone Metabolism, Risk of Falls and Fractures. Open Access Rheumatol. 2020 Jun 11;12:105-115. https://doi.org/10.2147/OARRR.S252245. eCollection 2020. PMID: 32607018
- Nepal AK, van Essen HW, van der Veen AJ, et al. Mechanical stress regulates bone regulatory gene expression independent of estrogen and vitamin D deficiency in rats. J Orthop Res. 2020 Jun 12. https://doi.org/10.1002/jor.24775. Online ahead of print. PMID: 32530517
- Papanastasiou L, Gravvanis C, Tournis S, et al. Effectiveness of intramuscular ergocalciferol treatment in a patient with osteomalacia and insufficiency fractures due to severe vitamin D deficiency after bariatric surgery. J Musculoskelet Neuronal Interact. 2020 Jun 1;20(2):291-296. PMID: 32481245
- Polzonetti V, Pucciarelli S, Vincenzetti S, et al. Dietary Intake of Vitamin D from Dairy Products Reduces the Risk of Osteoporosis. Nutrients. 2020 Jun 10;12(6):1743. https://doi.org/10.3390/nu12061743. PMID: 32532150
- Reid IR. Osteoporosis: evidence for vitamin D and calcium in older people. Drug Ther Bull. 2020 Aug;58(8):122-125. https://doi.org/10.1136/dtb.2019.000063. Epub 2020 Jun 25. PMID: 32586953 Review.
- Richards T, Wright C. British Army recruits with low serum vitamin D take longer to recover from stress fractures. BMJ Mil Health. 2020 Aug;166(4):240-242. https://doi.org/10.1136/jramc-2018-000983. Epub 2018 Oct 15. PMID: 30327320
- Rizzoli R, Biver E. Are Probiotics the New Calcium and Vitamin D for Bone Health? Curr Osteoporos Rep. 2020 Jun;18(3):273-284. https://doi.org/10.1007/s11914-020-00591-6. PMID: 32285249 Review.
- Sajo EA, Okunade KS, Olorunfemi G, et al. Serum vitamin D deficiency and risk of epithelial ovarian cancer in Lagos, Nigeria. Ecancermedicalscience. 2020 Jul 23;14:1078. https://doi.org/10.3332/ecancer.2020.1078. eCollection 2020. PMID: 32863872
- Sari E, Oztay F, Tasci AE. Vitamin D modulates E-cadherin turnover by regulating TGF-ωand Wnt signalings during EMT-mediated myofibroblast differentiation in A459 cells. J Steroid Biochem Mol Biol. 2020 Jun 27;202:105723. https://doi.org/10.1016/j.jsbmb.2020.105723. Online ahead of print. PMID: 32603782
- Shokri HM, Mohamed KO, Fahmy NA, et al. Vitamin D receptor gene polymorphism in patients with osteomalacic myopathy in Egypt. Neurol Sci. 2020 Jul 26. https://doi.org/10.1007/s10072-020-04622-z. Online ahead of print. PMID: 32715368
- Sirbu E, Buleu F, Tudor A, et al. Vitamin D and disease activity in rheumatoid arthritis patients: a retrospective study in a Romanian cohort. Acta Biochim Pol. 2020 Jun 18;67(2):267-272. https://doi.org/10.18388/abp.2020_5360. PMID: 32550709
- Sugimoto T, Matsumoto T, Hosoi T, et al. Efficacy of denosumab co-administered with vitamin D and Ca by baseline vitamin D status. J Bone Miner Metab. 2020 Jul 15. https://doi.org/10.1007/s00774-020-01119-9. Online ahead of print. PMID: 32671481
- Thanapluetiwong S, Chewcharat A, Takkavatakarn K, et al. Vitamin D supplement on prevention of fall and fracture: A Meta-analysis of Randomized Controlled Trials. Medicine (Baltimore). 2020 Aug 21;99(34):e21506. https://doi.org/10.1097/MD.0000000000021506. PMID: 32846760
- Thorup L, Hamann SA, Tripathee A, et al. Evaluating Vitamin D levels in Rheumatic Heart Disease patients and matched controls: A case-control study from Nepal. PLoS One. 2020 Aug 21;15(8):e0237924. https://doi.org/10.1371/journal.pone.0237924. eCollection 2020. PMID: 32822412
- Tu L, Zheng S, Cicuttini F, et al. Effects of vitamin D supplementation on disabling foot pain in patients with symptomatic knee osteoarthritis. Arthritis Care Res (Hoboken). 2020 Jul 5. https://doi.org/10.1002/acr.24371. Online ahead of print. PMID: 32623812
- Wang N, Ji J, Yu S, et al. In reply to the letter to the editor regarding "The Relationship Between Serum Vitamin D and Fracture Risk in the Elderly: A Meta-Analysis". J Orthop Surg Res. 2020 Aug 14;15(1):324. https://doi.org/10.1186/s13018-020-01820-5. PMID: 32795312
- Wang Q, Yu D, Wang J, et al. Association between vitamin D deficiency and fragility fractures in Chinese elderly patients:

a cross-sectional study. Ann Palliat Med. 2020 Jul;9(4):1660-1665. https://doi.org/10.21037/apm-19-610. Epub 2020 May 6. PMID: 32527135

- Wang S, Ai Z, Song M, et al. The association between vitamin D receptor FokI gene polymorphism and osteoporosis in postmenopausal women: a meta-analysis. Climacteric. 2020 Jun 18:1-6. https://doi.org/10.1080/13697137.2020.1775806. Online ahead of print. PMID: 32551997
- Whiting SJ, Li W, Singh N, et al. Predictors of hip fractures and mortality in long-term care homes in Saskatchewan: Does vitamin D supplementation play a role? J Steroid Biochem Mol Biol. 2020 Jun;200:105654. https://doi.org/10.1016/j.jsbmb.2020.105654. Epub 2020 Mar 10. PMID: 32169586
- Wiedemann A, Renard E, Molin A, et al. Prolonged 25-OH Vitamin D Deficiency Does Not Impair Bone Mineral Density in Adult Patients With Vitamin D 25-Hydroxylase Deficiency (CYP2R1). Calcif Tissue Int. 2020 Aug;107(2):191-194. https://doi.org/10.1007/s00223-020-00704-4. Epub 2020 May 19. PMID: 32430692
- Wu J, Dong J, Li S, et al. The Role of Vitamin D in Combination Treatment for Patients With Rheumatoid Arthritis. Front Med (Lausanne). 2020 Jul 15;7:312. https://doi.org/10.3389/fmed.2020.00312. eCollection 2020. PMID: 32766259
- Yang A, Lv Q, Chen F, et al. The effect of vitamin D on sarcopenia depends on the level of physical activity in older adults. J Cachexia Sarcopenia Muscle. 2020 Jun;11(3):678-689. https://doi.org/10.1002/jcsm.12545. Epub 2020 Feb 5. PMID: 32020783
- Yao X, Yang L, Li M, et al. Relationship of vitamin D receptor gene polymorphism with sarcopenia and muscle traits based on propensity score matching. J Clin Lab Anal. 2020 Jul 22:e23485. https://doi.org/10.1002/jcla.23485. Online ahead of print. PMID: 32696506
- Zhang C, Fu S, Zhao M, et al. Associations Between Complement Components and Vitamin D and the Physical Activities of Daily Living Among a Longevous Population in Hainan, China. Front Immunol. 2020 Jul 17;11:1543. https://doi.org/10.3389/fimmu.2020.01543. eCollection 2020. PMID: 32765534