

# Approach to Management of Chronic Abdominal Pain

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- I have no financial interests or relationships to disclose

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## Objectives

- Discuss deferent causes of chronic abdominal pain
- To review diagnostic approach of chronic abdominal pain
- Discuss management approach of undiagnosed chronic abdominal pain
- Discuss the pathophysiology of chronic abdominal pain in gut-brain interaction disorders
- Review management of chronic abdominal pain

## Undiagnosed abdominal pain

- Can be a daunting task
- Differential diagnosis is broad and overwhelming
- Expensive laboratory tests
- Multiple and repeat imaging
- Patient frustration
- Physician fatigue

**RUQ:**

- Biliary colic/ Chronic cholecystitis
- Functional biliary pain
- Sphincter of oddi dysfunction
- PSC
- Budd chiari syndrome
- Chronic portal vein thrombosis
- Hepatocellular carcinoma

**Epigastric / LUQ pain**

- Cardiopulmonary disease/ AMI
- PUD
- Gastric malignancy
- Esophageal malignancy
- GERD/ Dyspepsia
- Gastritis:
- H pylori/ NSAIDS
- Chronic pancreatitis
- Splenomegaly/ Abscess
- Splenic vein thrombus
- Splenic infarction
- lymphoma/ leukemia

**Focal pain:**

- Abdominal wall pain
- Abdominal cutaneous nerve entrapment
- Abdominal hernia
- Rib fracture
- Shingles

# Defensive

**Poorly localized pain:**

- Abdominal aortic aneurysms
- Acute intermittent porphyria
- Hypercalcemia
- Hypothyroidism
- Lead poisoning
- celiac artery compression syndrome
- Mesenteric ischemia
- chronic intestinal pseudoobstruction
- eosinophilic gastroenteritis
- Epiploic appendages
- FMF
- adult stills disease
- Necrotic bowel disease
- Somatization

**Diffuse pain:**

- Constipation
- Irritable bowel syndrome
- Celiac disease
- Inflammatory bowel disease
- Chronic mesenteric ischemia
- GI malignancy
- Lactose malabsorption/ intolerance
- SIBO

**Lower abdominal pain:**

- Pregnancy
- Diverticulitis
- IBD
- Intestinal obstruction
- Colorectal CA
- Urinary retention
- Pyelonephritis
- Nephrolithiasis
- Femoral/ Inguinal hernia
- Epididymitis
- Endometriosis
- Fibroids
- Ovulatory pain
- Ectopic pregnancy
- Ovarian CA

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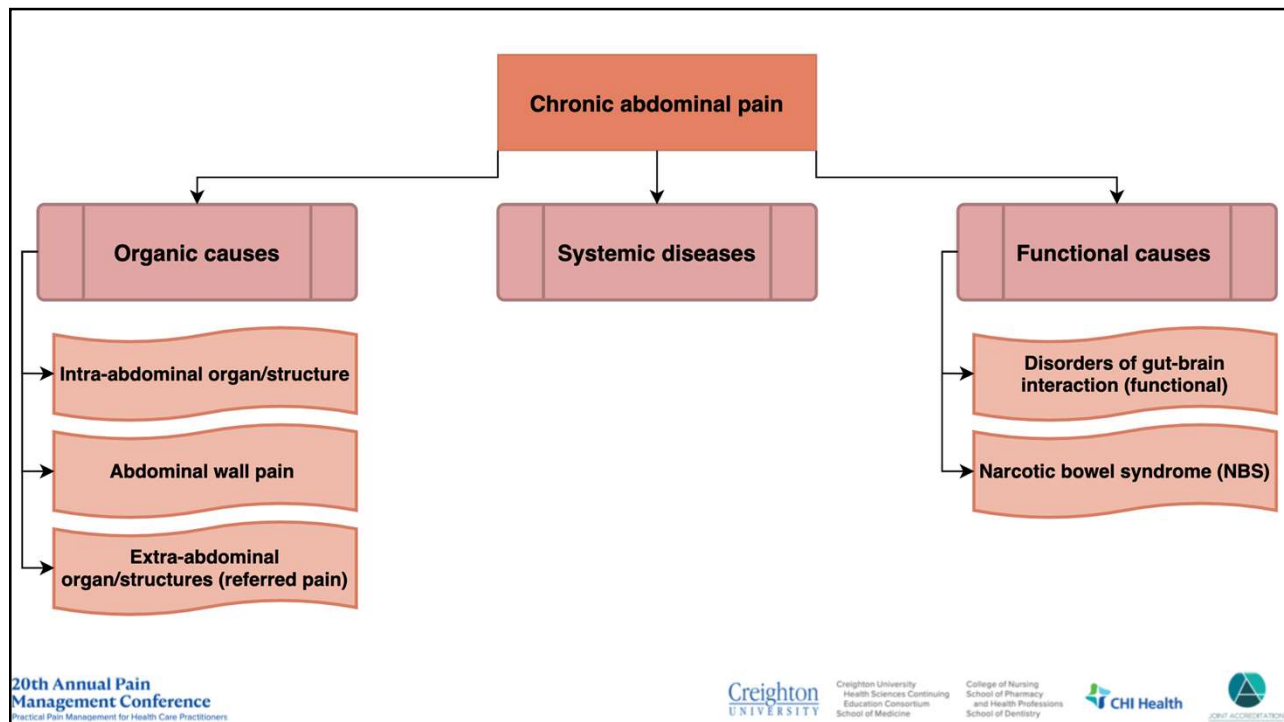
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## Initial Evaluation

### • History

- SOCRATES (**S**ite, **O**nset, **C**haracter, **R**adiation, **A**ssociations, **T**ime Course, **E**xacerbating/relieving factors, and **S**everity)
- Biopsychosocial factors (environmental exposures, genetics, anxiety disorders, etc) → effective **patient-physician relationship**
- **Alarm features:** symptom onset >50 yo, weight loss, nocturnal symptoms, or rectal bleeding.

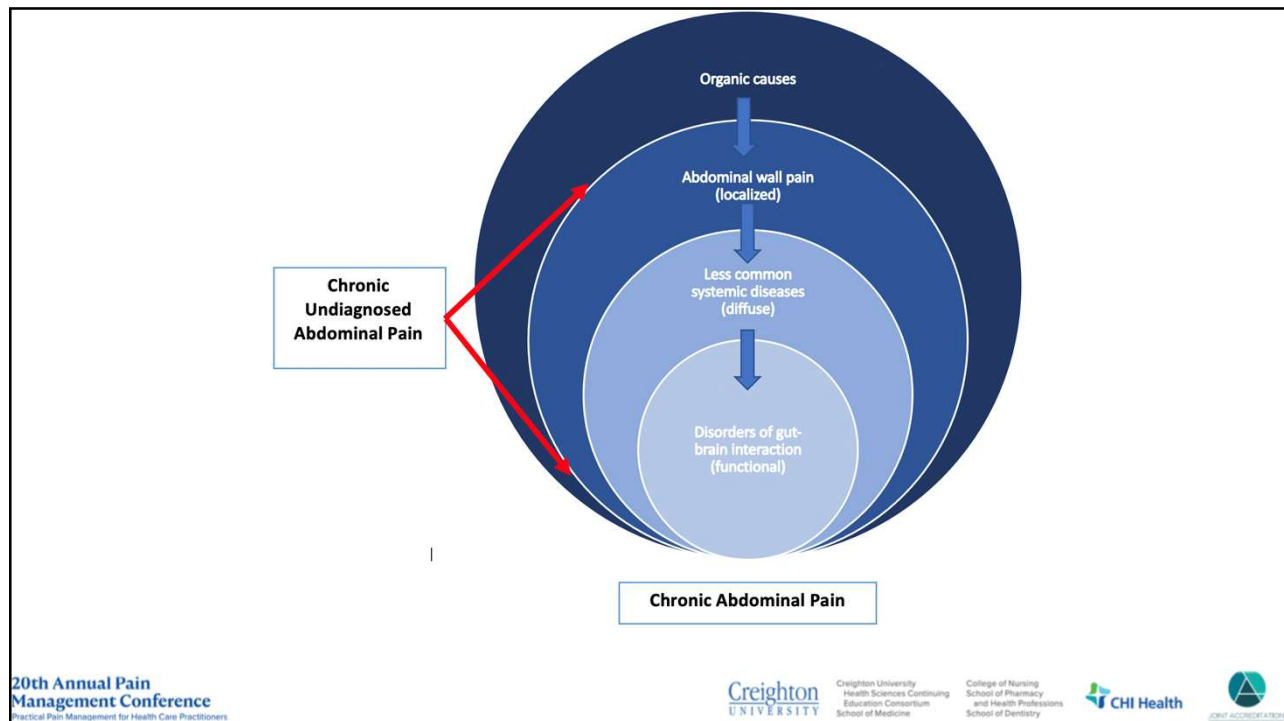
### • Physical exam

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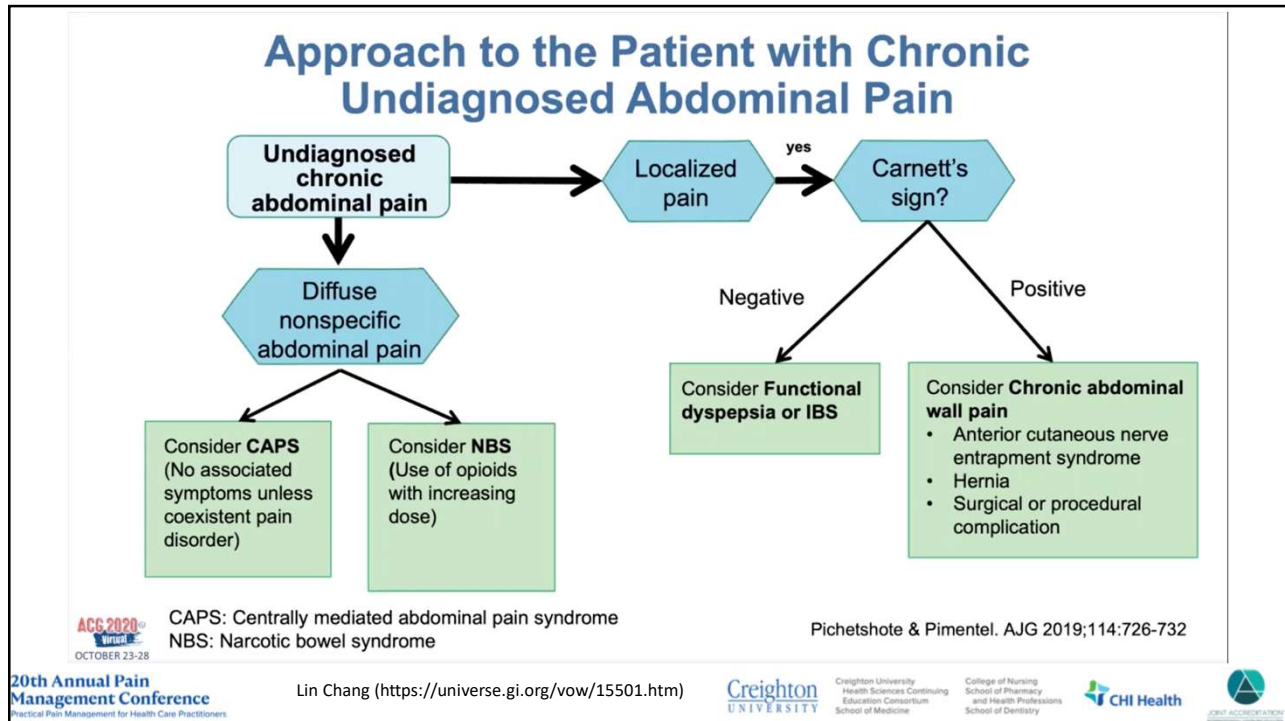
## Work up

- CBC
- CMP
- Inflammatory markers: ESR, CRP, fecal calprotectin
- H. pylori testing
- Celiac serologies
- Imaging
- Endoscopies

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Diffuse nonspecific abdominal pain

Additional factors	Diagnostic Considerations
Appropriate ethnic group	<b>Familial Mediterranean Fever (FMF)</b> Empiric trial of colchicine
H/o abdominal surgery, autoimmunity, cancer, abnormal imaging with mass	<b>Sclerosing mesenteritis</b> with laparoscopy
H/o peripheral vascular disease or coronary artery disease	<b>Chronic mesenteric ischemia</b> Obtain CT angiography
Dyspareunia, dyschezia, menstrual cycle related diarrhea	<b>Endometriosis</b> with laparoscopy
Neurovisceral symptoms (muscle weakness, psychiatric symptoms, pain in limbs, head, neck, chest)	<b>Acute intermittent porphyria (AIP)</b> Check urine PBG at time of attack
Skin hyperextensibility, joint hypermobility, or tissue fragility	<b>Ehlers Danlos syndrome</b> Evaluate for visceroptosis with UGI with SBFT with upright films
Flushing, tachycardia, musculoskeletal pain, hypotension	<b>Mast cell activation syndrome</b> Check tryptase at baseline and time of attack

Pichetshote & Pimentel. AJG 2019;114:726-732

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### Carnett's sign

The diagram illustrates Carnett's sign, a clinical test for abdominal wall pain. On the left, a patient lies supine with legs raised, while a clinician palpates the abdomen. On the right, an anatomical diagram shows the abdominal wall layers: the anterior sheath of the rectus abdominis muscle, the rectus abdominis muscle, and the anterior cutaneous abdominal branches of intercostal nerves. The diagram also shows the underlying vertebral levels (T8 to T12), with a legend indicating the locations of Vein, Artery, and Nerve.

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<https://doi.org/10.1016/j.mpmed.2019.03.003>

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### Narcotic bowel – pain and the narcotic vicious cycle

The diagram illustrates the narcotic vicious cycle as a circular process. At the center is a purple circle labeled "Pain and narcotics vicious cycle" with the text "Soar and crash" below it. The cycle consists of the following steps: "Narcotics" leads to "Narcotic pain relief", which leads to "Delayed transit", then "Constipation/ileus", then "Distension", then "Nausea/vomiting", then "Withdrawal", and finally back to "Increased intestinal spasm/pain", which leads to "Narcotics".

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## Disorders of Gut-Brain Interactions (Functional GI disorders)

<b>Esophageal</b>	Functional Chest Pain Functional Heartburn Esophageal Hypersensitivity
<b>Gastroduodenal</b>	Functional Dyspepsia (EPS and PDS) Cyclic Vomiting Syndrome (CVS)
<b>Bowel</b>	Irritable Bowel Syndrome (IBS)
<b>Gallbladder and sphincter of Oddi</b>	Functional Gallbladder Disorder sphincter of Oddi Dysfunction
<b>Centrally Mediated Disorders of GI pain</b>	Centrally Mediated Abdominal Pain Syndrome (CAPS) Narcotic Bowel Syndrome
<b>Anorectal Disorders</b>	Functional Anorectal Pain (e.g., Levator Ani Syndrome)

<b>Gastroduodenal</b>	Functional Dyspepsia <ul style="list-style-type: none"> <li>• Epigastric Pain Syndrome (EPS)</li> <li>• Post-prandial Distress Syndrome (PDS)</li> </ul>
<b>Bowel</b>	Irritable Bowel Syndrome (IBS)
<b>Gallbladder and sphincter of Oddi</b>	Functional Gallbladder Disorder sphincter of Oddi Dysfunction
<b>Centrally Mediated Disorders of GI pain</b>	Centrally Mediated Abdominal Pain Syndrome (CAPS) Narcotic Bowel Syndrome

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### Rome IV Diagnostic Criteria\* for Functional Dyspepsia\*\*

#### One or more of the following

- Bothersome postprandial fullness
- Bothersome early satiation
- Bothersome epigastric pain
- Bothersome epigastric burning

#### And

- No evidence of structural disease (including upper endoscopy) that is likely to explain the symptoms

\* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

\*\* Must fulfill criteria for postprandial distress syndrome (PDS) or epigastric pain syndrome (EPS)

Talley NJ, et al. *Disorders of Brain-Gut Interaction*, 4<sup>th</sup> ed. Rome Foundation, 2016; pp. 903-966

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## Rome IV Diagnostic Criteria\* for Epigastric Pain Syndrome (EPS)

Must include **one or both** of the following at least 1 day a week:

1. **Bothersome epigastric pain** (i.e., severe enough to impact on usual activities)
2. **Bothersome epigastric burning** (i.e., severe enough to prevent finishing a regular size meal)

**And no evidence of organic, systemic, or metabolic disease that is likely to explain the symptoms on routine investigations (including at upper endoscopy)**

\* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

**Supportive criteria:**

1. Pain may be induced by ingestion of a meal, relieved by ingestion of a meal, or may occur while fasting
2. Postprandial epigastric bloating, belching, and nausea can also be present
3. Persistent vomiting likely suggests another disorder
4. Heartburn is not a dyspeptic symptom but may often co-exist
5. The pain does not fulfill biliary pain criteria
6. Symptoms that are relieved by evacuation of feces or gas generally should not be considered as part of dyspepsia
7. Other digestive symptoms (such as GERD and IBS) may co-exist with EPS

Talley NJ, et al. *Disorders of Brain-Gut Interaction, 4<sup>th</sup> ed. Rome Foundation, 2016; pp. 903-966*



## Rome IV Diagnostic Criteria\* for Postprandial Distress Syndrome (PDS)

Must include **one or both** of the following at least 3 days a week:

1. **Bothersome postprandial fullness** (i.e., severe enough to impact on usual activities)
2. **Bothersome early satiation** (i.e., severe enough to prevent finishing a regular size meal)

**And no evidence of organic, systemic, or metabolic disease that is likely to explain the symptoms on routine investigations (including at upper endoscopy)**

\* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

**Supportive criteria:**

1. Postprandial epigastric pain or burning, epigastric bloating, excessive belching, and nausea can also be present
2. Vomiting warrants consideration of another disorder
3. Heartburn is not a dyspeptic symptom but may often co-exist
4. Symptoms that are relieved by evacuation of feces or gas should generally not be considered as part of dyspepsia
5. Other individual digestive symptoms or groups of symptoms (e.g., from GERD and IBS) may co-exist with PDS

Talley NJ, et al. *Disorders of Brain-Gut Interaction, 4<sup>th</sup> ed. Rome Foundation, 2016; pp. 903-966*



## Rome IV Diagnostic Criteria\* for Irritable Bowel Syndrome (IBS)

Recurrent abdominal pain on average at least 1 day/week in the last 3 months, associated with **two or more** of the following:

1. Related to defecation
2. Associated with a change in frequency of stool
3. Associated with a change in form (appearance) of stool

\* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

Mearin F, et al. Disorders of Brain-Gut Interaction, 4<sup>th</sup> ed. Rome Foundation, 2016; pp. 967-1058



## Rome IV Diagnostic Criteria\* for Centrally Mediated Abdominal Pain Syndrome\*\*

Must include **all** of the following

- Continuous, or nearly continuous, abdominal pain
- No or only occasional relationship of pain with physiological events (eg, eating, defecation, or menses)<sup>†</sup>
- Pain limits some aspect of daily functioning<sup>††</sup>
- The pain is not feigned
- Pain is not explained by another GI disorder or medical condition

\* Criteria fulfilled for the last 3 months, with symptom onset at least 6 months prior to diagnosis

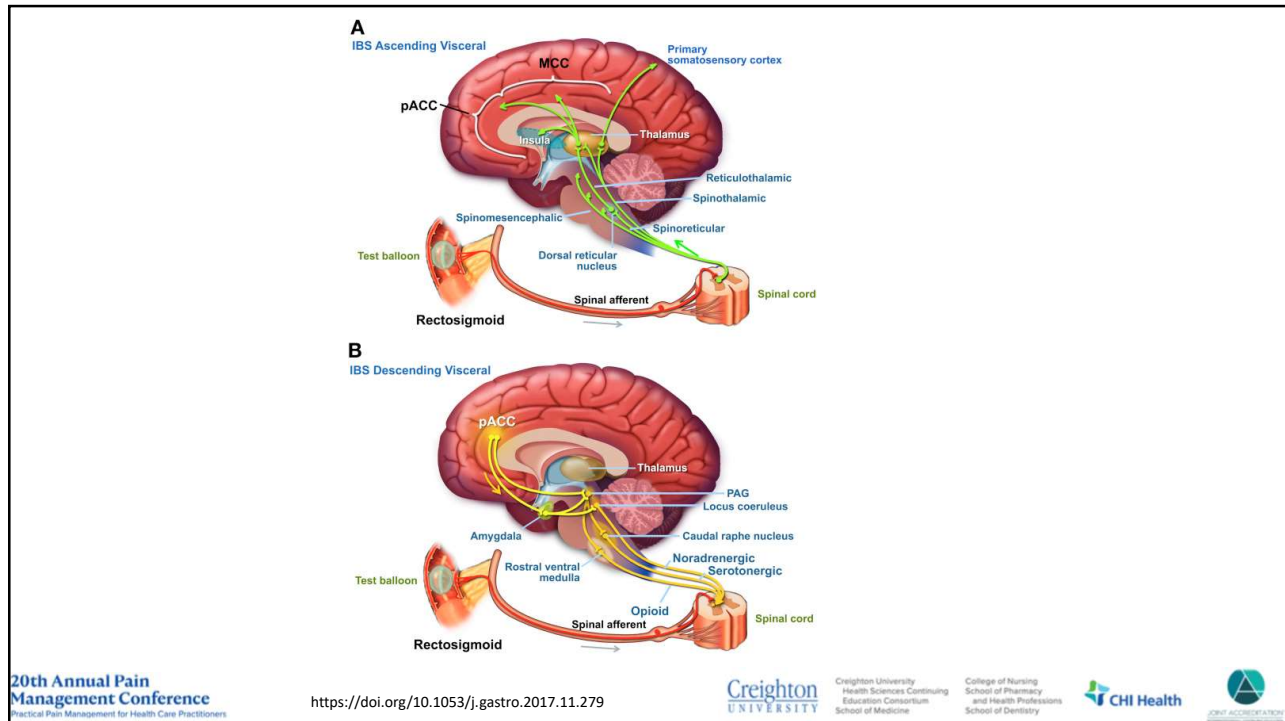
\*\* CAPS is typically associated with psychosocial comorbidities, but there is no specific psychosocial profile that can be used for diagnosis of CAPS

<sup>†</sup> Some degree of GI dysfunction may be present

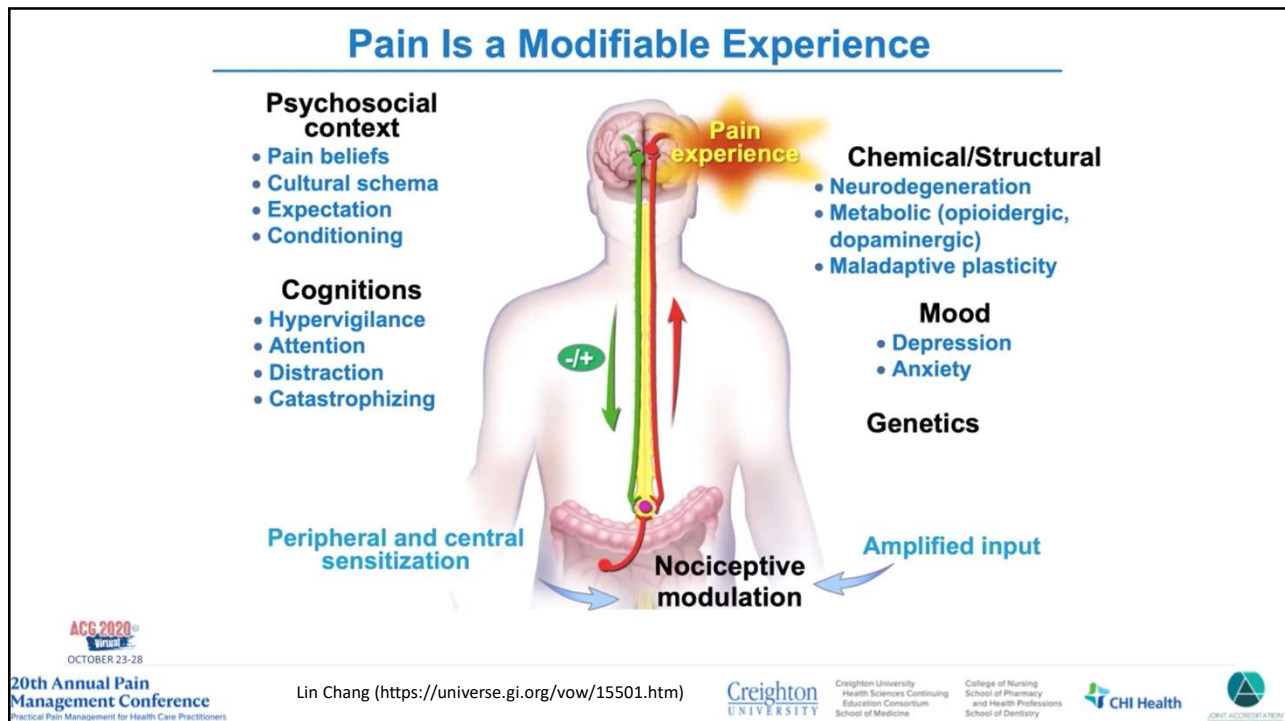
<sup>††</sup> Limitation of daily functioning includes impairments in work, intimacy, social/leisure, family life, and caregiving for self or others

Whorwell PJ, et al. Disorders of Brain-Gut Interaction, 4<sup>th</sup> ed. Rome Foundation, 2016; pp. 1059-1116

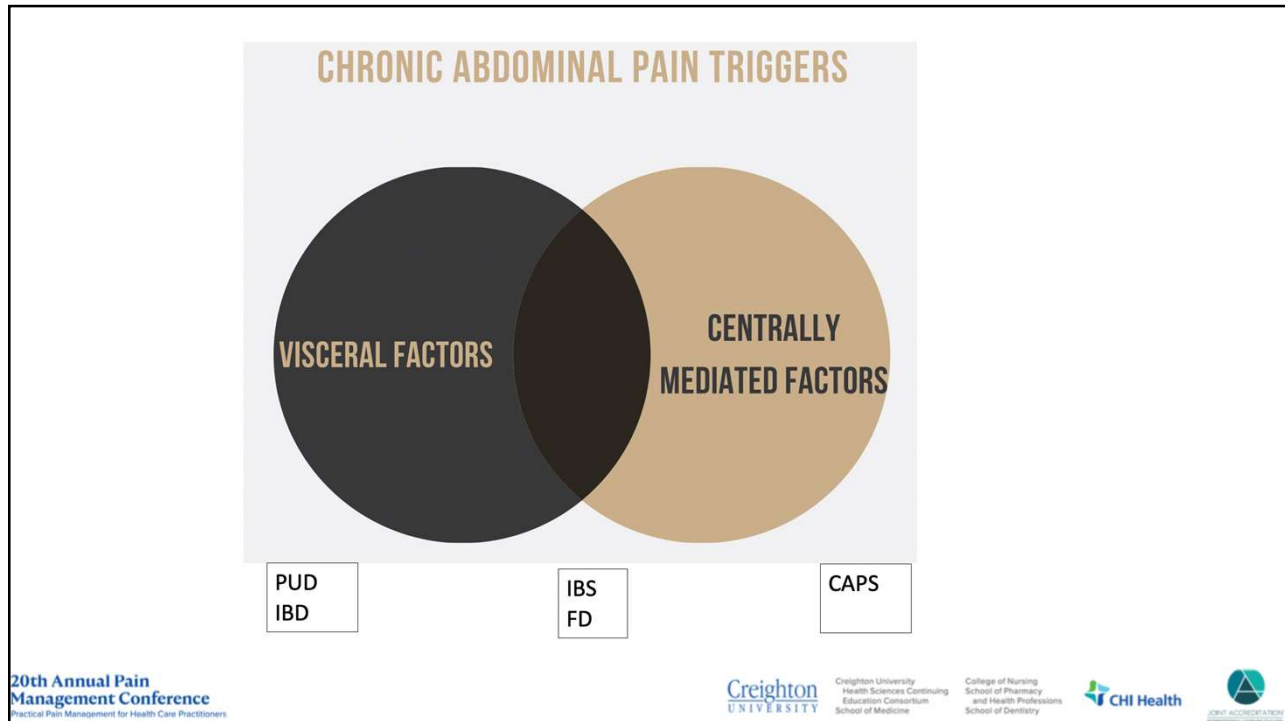




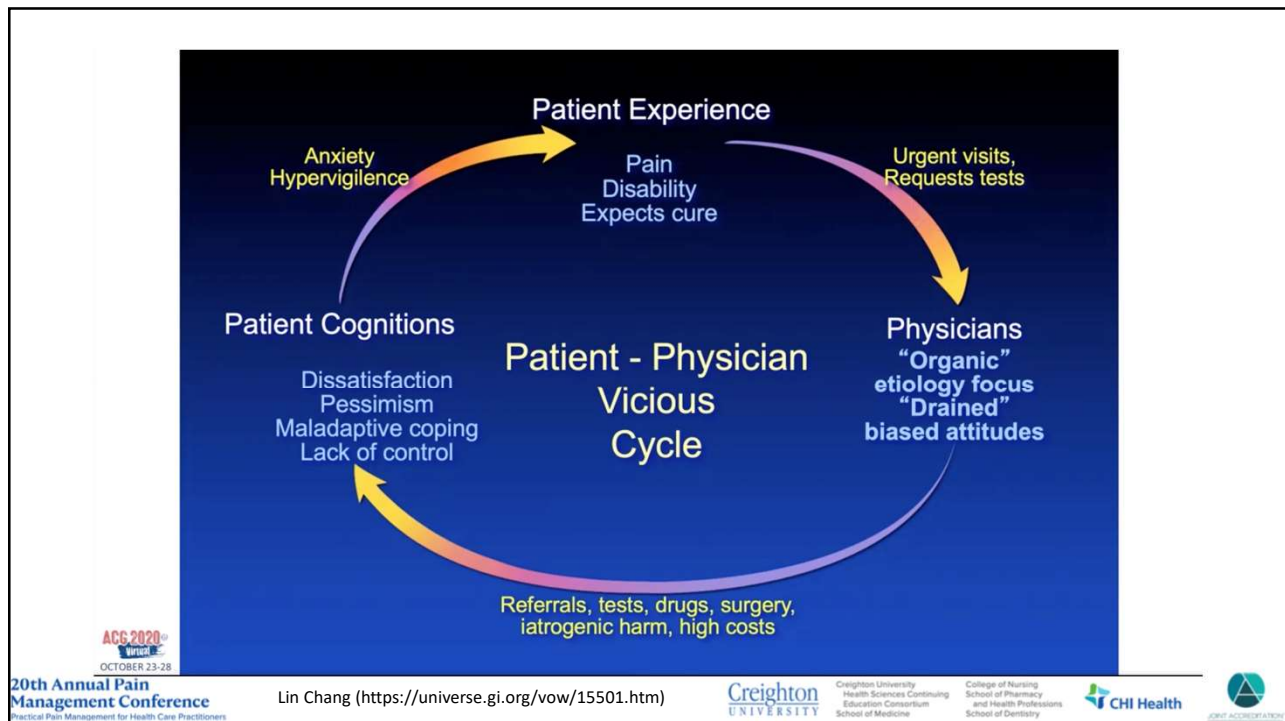
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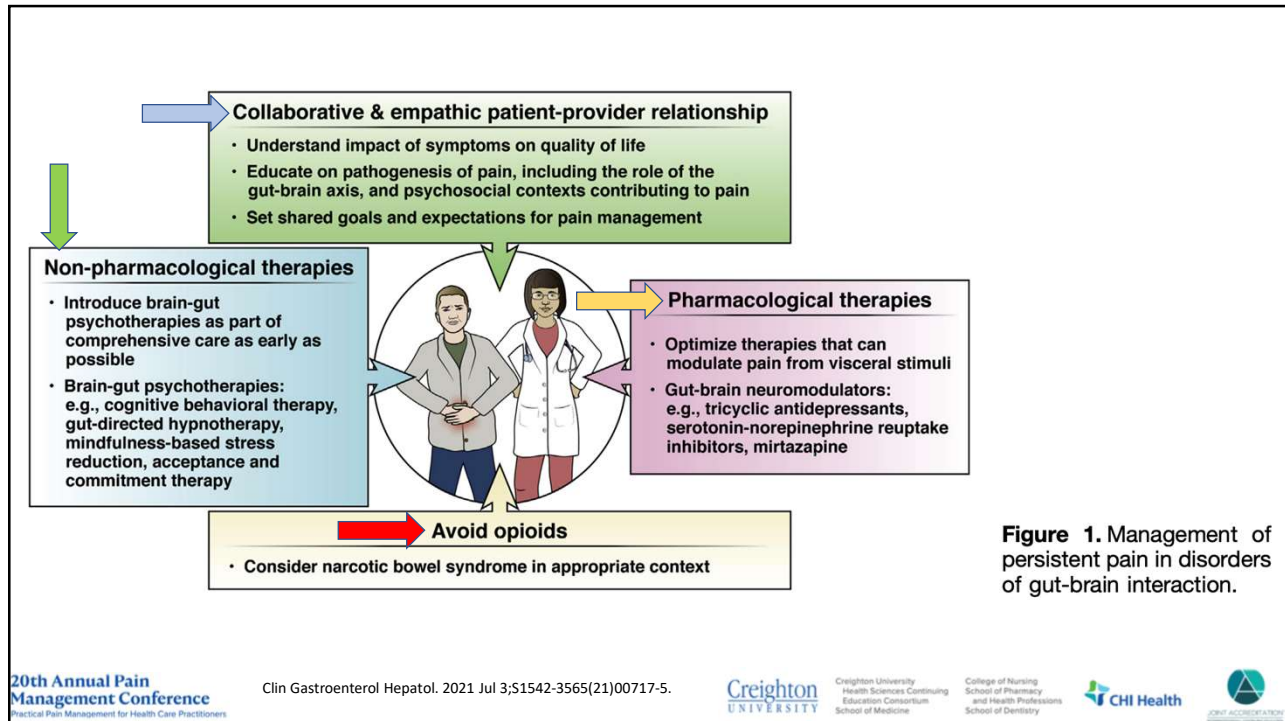
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Indication	Medication	Mechanism of action	Recommendation AGA/ACG	Quality of evidence AGA/ACG	Abdominal Pain Relief	Specific considerations
IBS-D	Alosetron	5-HT4 receptor secretagogue	Conditional/Weak	Moderate/Low	Yes	Risk of severe constipation and IC (FDA risk mitigation strategy).
	Eluxadoline	Mixed opioid receptor antagonist	Strong/Weak	Moderate	Yes	Contraindicated: SOD, CCY, EtOH, pancreatitis, severe liver impairment
	Rifaximin	Non-adsorbable Abx	Conditional/Weak	Moderate	Yes	
IBS-C	Linaclotide	GC-C receptor agonist	Strong	High	Yes	
	Plecanatide	GC-C receptor agonist	Strong	Moderate	Yes	
	Lubiprostone	Type 2 CL channel agonist	Conditional/Strong	Moderate	Yes	
	Tenapanor	NHE3→Ph			Yes	Not available yet in the US
	Tegaserod	5-HT4 receptor secretagogue			Yes	Women <65 with no CVS risk factors
	PEG-3350			Conditional	Low	No
IBS-All	Antispasmodic		Conditional/Weak	Low	Yes	
	Peppermint Oil		Conditional/Weak	Low	Yes	
	TCA		Conditional/Strong	Low/High	Yes	
FD	PPI		Strong	Moderate	Yes	
	Prokinetics		Conditional	Very Low	Yes	

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Clin Gastroenterol Hepatol. 2021 Jul 3;S1542-3565(21)00717-5.  
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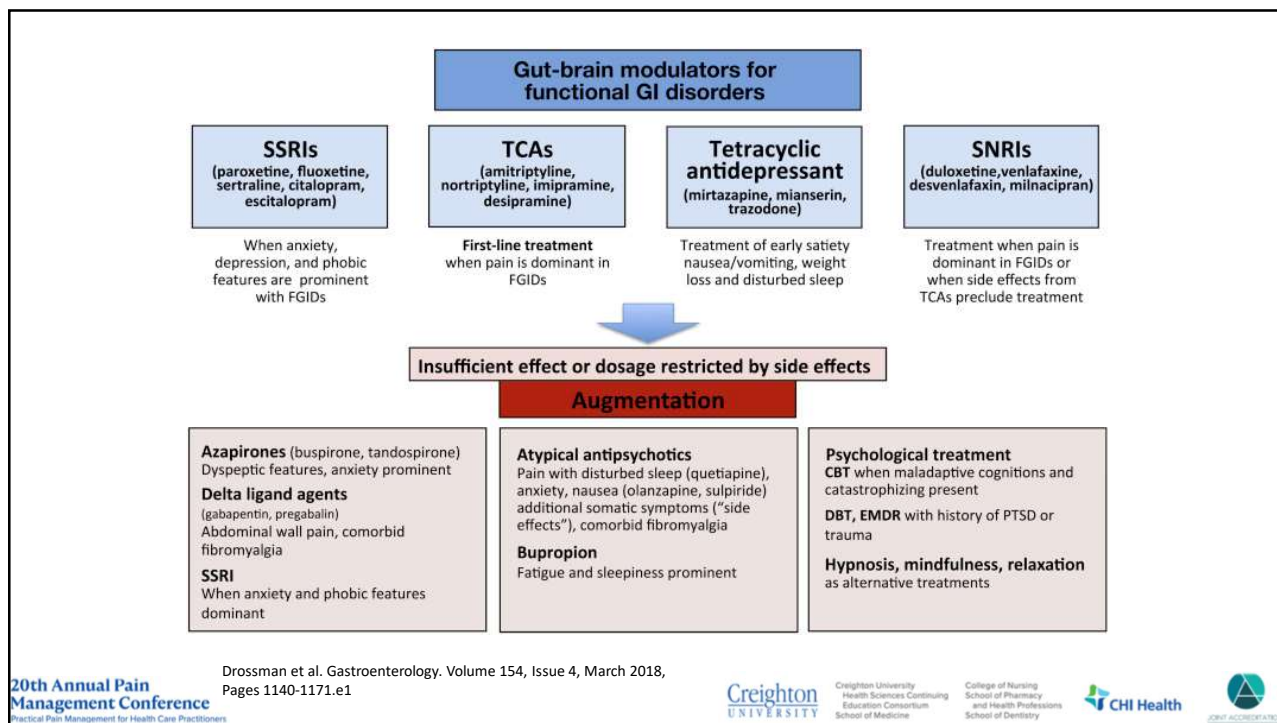
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**Table 2. Starting Dose, Dose Titration, and Common Side Effects of Gut–Brain Neuromodulators**

Drug class	Starting dose	Dose titration	Common side effects
Tricyclic antidepressants <sup>a</sup> (eg, amitriptyline or nortriptyline)	10 mg at night	By 10 mg/wk or 10 mg/fortnight according to response to treatment and tolerability to a maximum of 30–50 mg at night	Sedation, dry eyes, dry mouth, constipation
Serotonin- norepinephrine reuptake inhibitors (eg, duloxetine)	30 mg once daily	According to response to treatment and tolerability to a maximum of 60 mg once daily	Sedation, dry mouth, constipation or diarrhea, anxiety, reduced appetite, nausea, headache, fatigue
Mirtazapine	15 mg once daily	According to response to treatment and tolerability to a maximum of 45 mg once daily	Sleep disorders, constipation or diarrhea, anxiety, increased appetite and weight gain, nausea, headache, fatigue

<sup>a</sup>Secondary amines include desipramine and nortriptyline; tertiary amines include amitriptyline and imipramine. Secondary amines may have fewer anticholinergic side effects than tertiary amines.

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## Efficacy of Neuromodulators for Disorders of Gut-Brain Interaction

Treatment	IBS	Functional Dyspepsia	Other FGID
Tricyclics (TCAs)	+	+	Non-cardiac chest pain Functional heartburn
SSRI	±	No effect	NCCP Functional heartburn
SNRI	+?	No effect (venlafaxine) ? Other SNRI	NCCP
Delta ligand agents	+	+	
Azapirone	+	+	
Atypical antipsychotics	+	+	

Ford et al. *Am J Gastroenterol* 2018;113:1-18  
 Chang, Sultan, Lembo. *Gastroenterology* 2014;147:1149-1172  
 Drossman DA et al. *Gastroenterology* 2018;154:1140-1171

Saito Y et al. *Aliment Pharmacol Ther.* 2019;49:389-397  
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## Questions

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