2026

ACG SUMMER SCHOOL SERIES:

WOMEN'S LEADERSHIP COURSE, IBD SCHOOL AND ESOPHAGUS SCHOOL

JUNE 5-7, 2026 | WASHINGTON MARRIOTT AT METRO CENTER
WASHINGTON, DC

Register online: **meetings.gi.org**

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2026

ACG'S FUNCTIONAL GI & MOTILITY DISORDERS SCHOOL &

ACG/MIGI MIDWEST REGIONAL POSTGRADUATE COURSE

click for course information

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2026
ACG'S OBESITY AND METABOLIC DISORDERS SCHOOL &
ACG/VGS/MASGNA REGIONAL POSTGRADUATE COURSE
AUGUST 28-30, 2026 | WILLIAMSBURG LODGE, WILLIAMSBURG, VA
Register online: meetings.gi.org

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ACG 2026
OCTOBER 9-14, 2026 | NASHVILLE, TN
CALL FOR Abstracts
SUBMISSION SITE OPENS MARCH 2, 2026
SUBMISSION DATES: MARCH 2 - JUNE 1, 2026
The American College of Gastroenterology invites you to submit abstracts for presentation at the 2026 Annual Scientific Meeting and Postgraduate Course. Abstracts must be clinical or research-oriented, with a focus on gastroenterology or hepatology.
IMPORTANT DATES
› MARCH 2
Submission Site OPENS
› JUNE 1 | 11:59 PM ET
Submission Site CLOSES (No Exceptions!)
› BY JULY 17
Notification of abstract ACCEPTANCE
› SEPTEMBER 16
Presenting Authors MUST REGISTER as an attendee
ABSTRACT CATEGORIES
• Biliary/Pancreas
• Colon
• Colorectal Cancer Prevention
• Diet, Nutrition, and Obesity
• Endoscopy Video
• Esophagus
• Functional Bowel Disease
• General Endoscopy
• GI Bleeding
• IBD
• Infections and Microbiome
• Interventional Endoscopy
• Liver
• Pediatrics
• Practice Management
• Small Intestine
• Stomach and Spleen
• Clinical Vignettes/Case Reports
SCAN FOR THE SUBMISSION SITE
bit.ly/ACG2026_Abstracts

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Participating in the Webinar

Moderator:
Kerry B. Dunbar, MD, PhD

All attendees will be muted and will remain in "Listen Only Mode"

Type your questions here so that the moderator can see them.
Not all questions will be answered but we will get to as many as possible.

A handout with the slides and room to take notes can be downloaded from your control panel.

Exit

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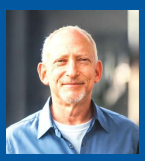
ACG Virtual Grand Rounds

Join us for upcoming Virtual Grand Rounds!

Week 17 – Special Edition VGR – Wednesday, April 22, 2026
Gastroenterology & Hepatology Fellowship Match Application – Tips & Tricks For Prospective Fellowship
Faculty: Kathryn Byrne, MD, Ian Grimes, MD, Tinsay Woreta, MD, MPH, and Pegah Hosseini-Carroll, MD, FACG. Panelist: Sarah Talamantes, MD, Anna Archbold, MD, Rahul Karna, MD, and Clive Miranda, DO, MSc
Moderator: Mohammad Bilal, MD, FACG
8pm Eastern



Week 17 – Thursday, April 23, 2026
The Microbiome in Functional Bowel Disease: How to Answer Patients' Questions About SIBO and Leaky Gut
Faculty: Eamonn M. M. Quigley, MD, MACG
Moderator: Neil H. Stollman, MD, FACG
At Noon and 8pm Eastern

Week 18 – Thursday, April 30, 2026 – There will be no ACG Virtual Grand Rounds presentation on Thursday, April 30 , 2026.

Week 19 – Thursday, May 7, 2026 – There will be no ACG Virtual Grand Rounds presentation on Thursday, May 7, 2026.

Visit **gi.org/ACGVGR** to Register

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Disclosures

Anh D. Nguyen, MD, FACG:
No relevant financial relationships with ineligible companies.

Kerry B. Dunbar, MD, PhD:
No relevant financial relationships with ineligible companies

**All of the relevant financial relationships listed for these individuals have been mitigated*

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Beyond PPIs: Optimizing GERD Therapy

Anh Nguyen, MD, FACG
Clinical Associate Professor,
Center for Esophageal Diseases, Baylor University Medical Center and Texas A&M School of Medicine

Baylor Scott & White
CENTER FOR ESOPHAGEAL DISEASES
A member of HealthTexas Provider Network

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Objectives:

Discuss a comprehensive approach to GERD management and the evidence supporting each treatment recommendation.

- Lifestyle and dietary modifications
- Alternative pharmacologic options beyond PPIs
- Endoscopic and surgical interventions

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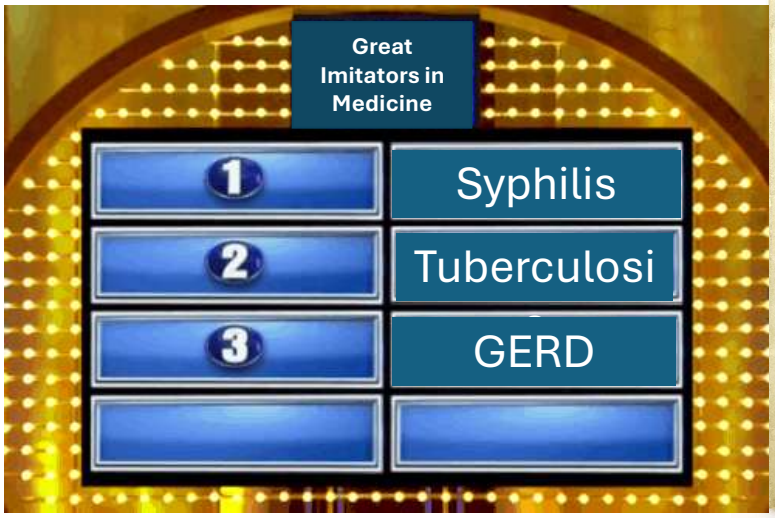
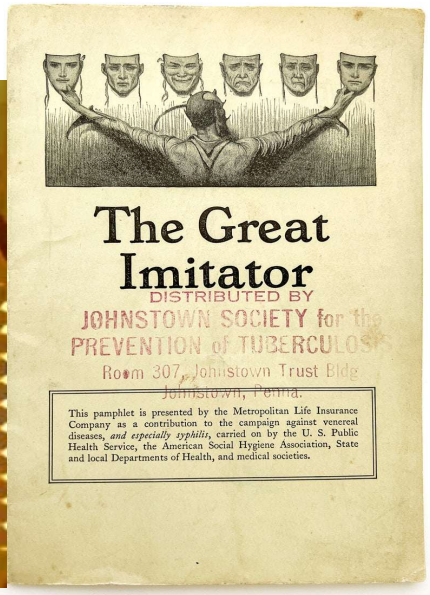
First step in GERD Management: Confirm it is GERD





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First step in GERD Management: Confirm it is GERD

Endoscopy (off therapy)

- **Los Angeles B, C or D erosive esophagitis**
- **Barrett's esophagus**
- **Peptic stricture**

Negative

Reflux Testing (off therapy)

- 24h pH impedance catheter
- 48-96h wireless pH capsule

Negative

Other etiologies:

- Esophageal motility disorders
- Gastroparesis
- Disorders of gut brain interaction (i.e. functional heartburn, supra-gastric belching, rumination, etc.)

Gyawali CP, et al. *Gut* 2024.
Katz PO, et al. *American Journal Gastroenterology* 2022

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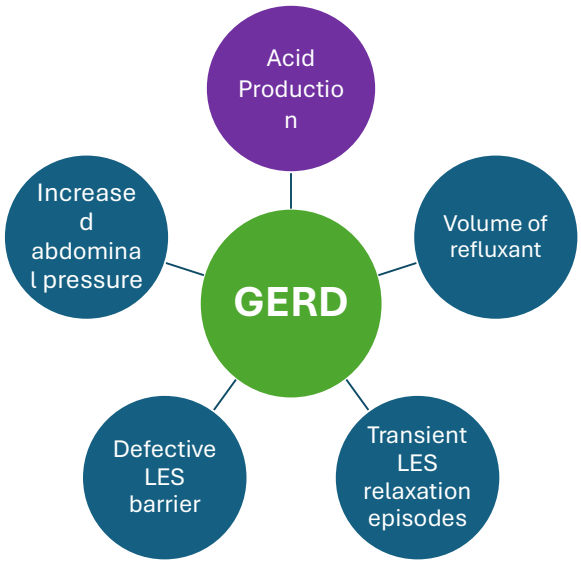
Pathophysiology of GERD: More than acid production



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Lifestyle and Dietary Modifications

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Meal size:

Pathophysiology Concept:

Large meal → Greater gastric distension → More frequent transient LES relaxation episodes → More reflux events (particularly in GERD patients who have defective EGJ)

Data:

Studies do not show that meal size affects reflux events or acid exposure in the distal esophagus.

Fox M, et al. *Clin Gastro Hepatology* 2007.

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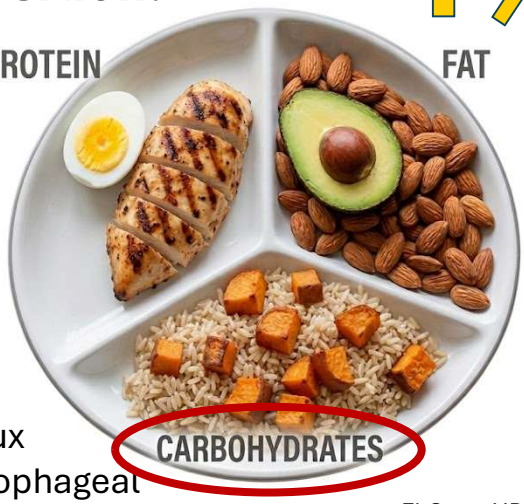
Meal Composition:

No effect on reflux events or symptoms



+ / — Mixed results on reflux events and esophageal acid exposure.

Increases visceral sensitivity to reflux events and severity of reflux symptoms.

Increases reflux events and esophageal acid exposure (especially simple sugars)

El-Serag HB, et al. *Gut* 2005.
Fox M, et al. *Clin Gastroenterology Hepatology* 2007
Gu C, et al. *Am J Gastroenterology* 2022.

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Dietary modifications

Dietary target	Proposed mechanism of GERD symptoms
Specific foods & beverages	
Acidic foods and beverages	Direct esophageal mucosal irritation
Carbonation	Increased gastric distention/TLESRs
Coffee	Reduction in LES tone
Alcohol	Reduction in LES tone/gastric motility
Chocolate	Reduction in LES tone
Mint	Reduction in LES tone
Spicy foods	Direct esophageal mucosal irritation
Macronutrients	
Fats	Reduction in LES tone/gastric motility
Carbohydrates	Reduction in LES tone
Eating behaviors	
Late night meal	Increased gastric acid production
Large meal	Increased gastric distention/TLESRs
Calorically dense meal	Increased gastric distention/TLESRs

GERD, gastroesophageal reflux disease; LES, lower esophageal sphincter; TLESRs, transient lower esophageal sphincter relaxations.

Newberry C, et al. *Journal of Thoracic Disease* 2019.

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Mint	Reduction in LES tone

Data on the effects of dietary modifications on GERD is limited due to small, uncontrolled studies and other concurrent confounders (weight, pharmacologic therapy, etc.).

Newberry C, et al. *Journal of Thoracic Disease* 2019.

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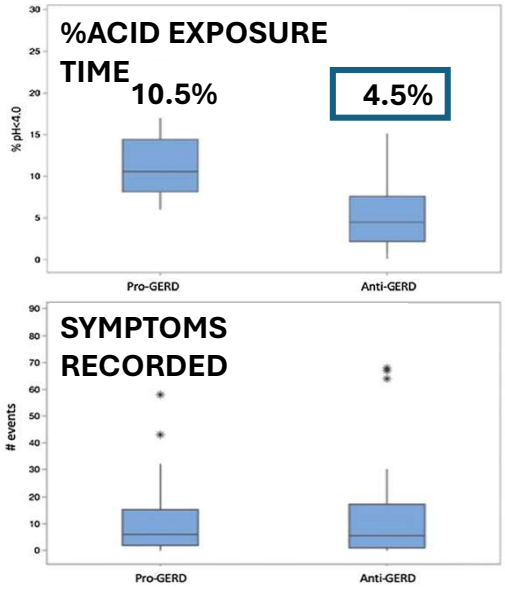
Pro-GERD versus anti-GERD diet

- Prospective study of 100 patients who underwent 96 hour bravo wireless pH:
  - 48 hours on a pro-GERD diet
  - Subsequent 48 hours on anti-GERD diet
- Improvement on anti-GERD diet in %AET
- **No difference in number of symptoms recorded.**



Triadafilopoulos G, et al. *Digestive Diseases and Science* 2020.

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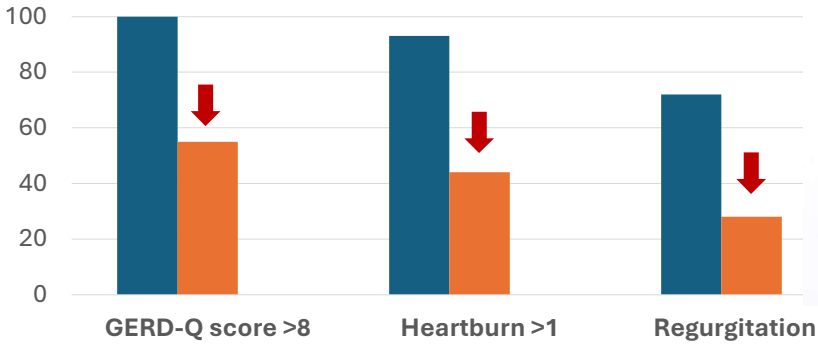
Elimination of ***Individual Identified Trigger Foods/Beverages*** Improves GERD Symptoms

- 100 patients were asked to report foods and beverages that triggered their GERD and to eliminate those foods for 2 weeks.



Tosetti C, et al. *Digestive Diseases and Science* 2021.

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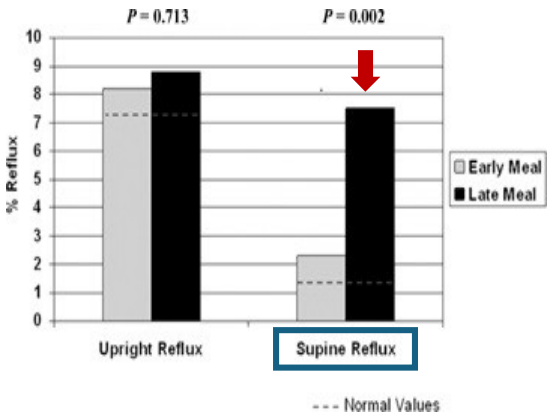
Meal Timing in Relation to Bedtime

- Piesman et al randomized 30 patients to an *early meal (6h before bedtime)* or *late meal (2h before bedtime)*.
  - Late meal patients had ***more supine reflux*** compared to early meal patients on 48 hour wireless capsule pH testing (p=0.002).



Piesman M, et al. *Am Journal Gastroenterology* 2007.
Fujiwara Y, et al. *Am Journal Gastroenterology*

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- In a matched case-control study of 147 GERD patients, a ***shorter dinner-to-bed time*** was significantly associated with an ***increased OR of GERD*** ($p < 0.0001$).
  - Patients with <3h between dinner and bedtime were ***7 times more likely to have GERD*** compared with

Table 2. Odds Ratio of Gastro-Esophageal Reflux Disease According to Dinner-to-Bed Time Interval

Dinner-to-Bed Time (hr)	Case	Control	Crude OR (95% CI)	Multiple-Adjusted* OR (95% CI)
4–	53	154	1.00	1.00
3.0–3.9	28	77	1.22 (0.67–2.15)	1.51 (0.70–3.27)
–2.9	66	63	4.30 (2.39–7.76)	7.45 (3.38–16.4)
p Value			0.0001	<0.0001

*Adjusted for body mass index, drinking habits, and smoking habits.

Piesman M, et al. *Am Journal Gastroenterology* 2007.
Fujiwara Y, et al. *Am Journal Gastroenterology*

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Recommend patients have at least 3 hours between dinner and laying down.

2007.

Fujiwara Y, et al. *Am Journal Gastroenterology*

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Reflux at night: Elevating the Head of the Bed (HOB)

- Elevating head of bed ***reduces*** acid exposure and reflux symptoms.

Table 1. Effect of bed head elevation in patients of nocturnal (supine) reflux

Parameters	Day 1 (without bed head elevation)	Day 7 (with bed head elevation)	*P*-value
Supine reflux time %	15.0 (8.4)	13.7 (7.2)	0.001
Acid clearance time (min)	3.8 (2.0)	3.0 (1.6)	0.001
Refluxes 5 min longer	3.3 (2.2)	1.0 (1.2)	0.001

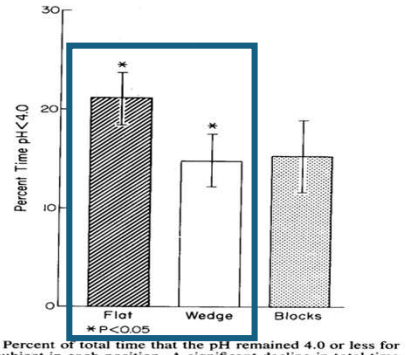

Fig 1. Percent of total time that the pH remained 4.0 or less for each subject in each position. A significant decline in total time pH was less than 4.0 is demonstrated for the wedge position as compared to the flat position. Bars represent the mean ± SEM in each position.

Hamilton JW, et al. *Dig Dis Sciences* 1988.
Khan, BA, et al. *J Gastro and Hepatology* 2012.
Schuitenmaker JM, et al. Neuro Gastro Motility 2022.

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Reflux at night: Elevating the Head of the Bed (HOB)

- Elevating head of bed ***reduces*** acid exposure and reflux symptoms

Randomized control or cross-over trials	Number of Patients	Intervention	Symptoms
Villamil Morales (2020)	39	Bed blocks (20 cm)	Improved
Huang (2019)	14	Wedge (20 degree angle)	Improved
Harvey (1987)	71	Bed blocks (20 cm)	Improved

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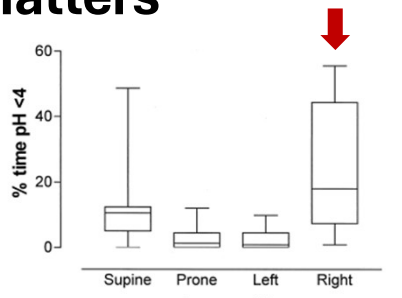
Reflux at night: Sleep Position Matters

- **Khoury et al (1999):** **Right lateral decubitus** was associated with **greater percent time pH** <4 ($p < 0.003$) and **longer esophageal acid clearance** ($p < 0.05$) compared to the left, supine, and prone in 10 healthy subjects.
- **Van Herwaarden (2000):** The **right lateral position** had a **higher esophageal acid exposure time** (7.0% *vs* 2.0%, $p < 0.03$) recorded than in the left supine position in 10 patients.

Khoury RM., et al. *Am Journal Gastro* 1999.
Van Herwaarden MA., et al. *Am Journal Gastro* 2000.



	Total 4-h Period	
	Right Lateral	Left Lateral
% time with pH < 4	7.0 (4.0–13.5)	2.0 (0.2–3.1)*
Number reflux episodes per h	3.8 (2.1–6.3)	0.9 (0.5–2.2)*
Mean duration reflux episodes (s)	77.5 (55.0–93.2)	53.8 (33.6–80.2)

* $p < 0.03$ (left *vs* right).

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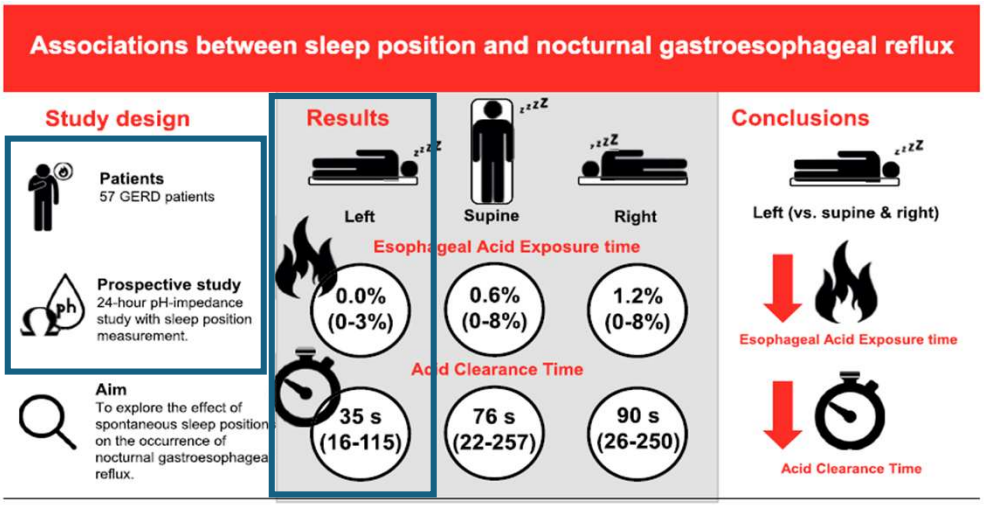
Left Lateral Decubitus is Best for GERD



Schuitenmaker JM, et al. *Am Journal of Gastro* 2022.

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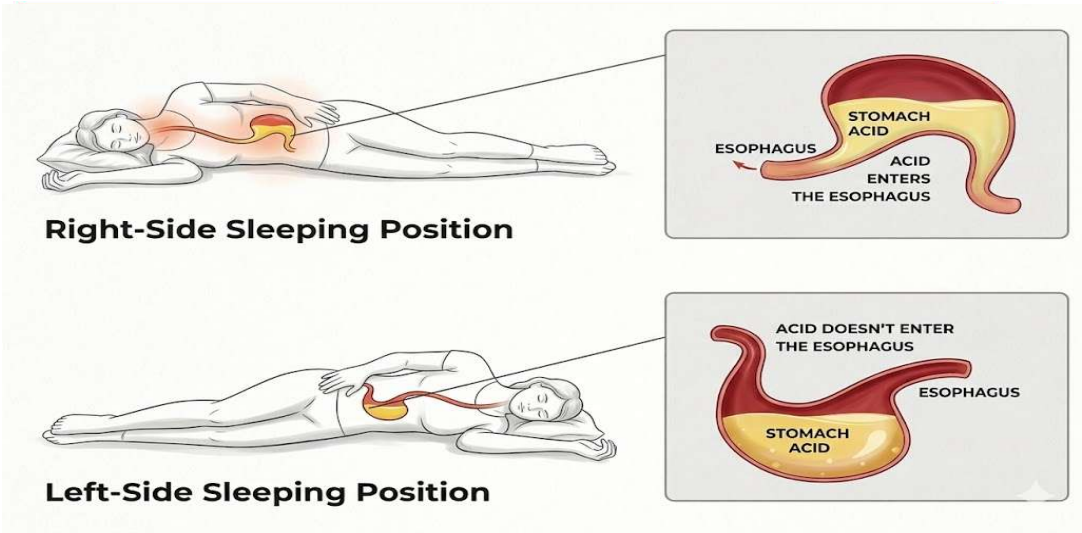

Schuitenmaker JM, et al. *Am Journal of Gastro* 2022.

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Weight Loss is Key to Treating GERD, especially in Obese Patients.

GERD management	GRADE quality of evidence	GRADE strength of recommendation
We recommend weight loss in overweight and obese patients for improvement of GERD symptoms.	Moderate	Strong

Lifestyle interventions in GERD

Statement 27: Weight loss reduces esophageal acid exposure and reflux symptoms, even in non-obese GERD patients

Recommendation	Evidence grade
Weight loss should be advised for overweight or obese patients with esophageal GERD syndromes.	Grade B: recommended with fair evidence that it improves important outcomes

Zerbib F, et al. *Neurogastroenterol Motil*. 2021
Kahrilas PJ, et al. *Gastroenterology*. 2008
Katz PO, et al. *Am J Gastroenterol*. 2022

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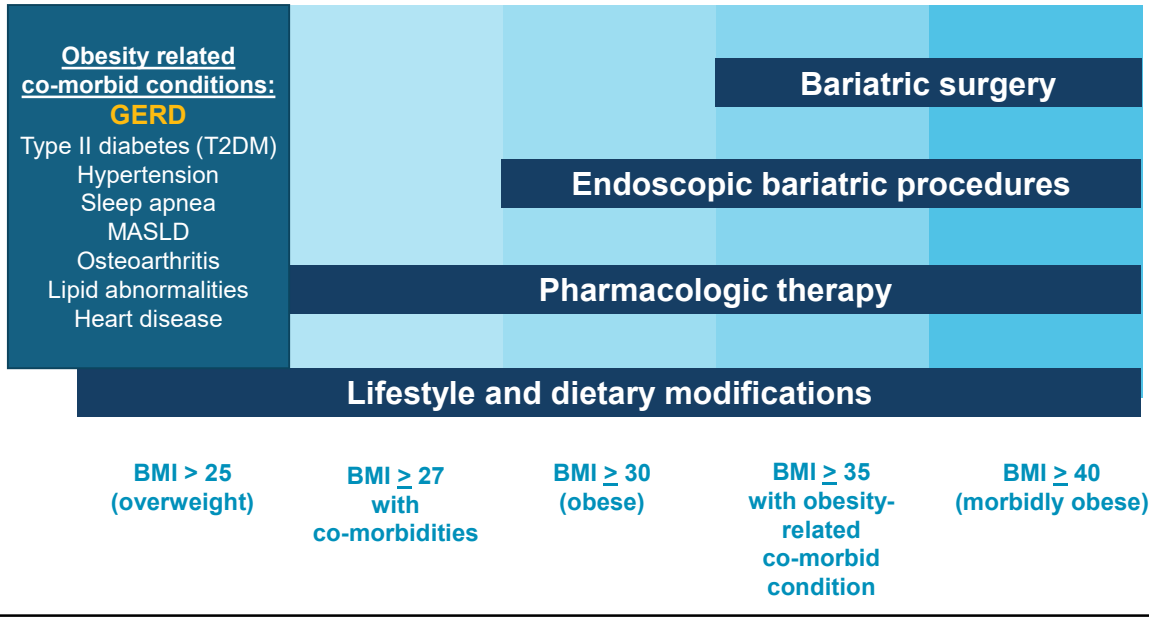
Treatments for Obesity



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Lifestyle and Dietary Modifications in the GI Guidelines

	ACG	AGA	ANMS
Avoidance of tobacco and alcohol products.	✓		
Avoiding meals within 2-3 hours of bedtime.	✓	✓	✓
	✓	✓	
Avoiding trigger foods.	✓		✓
Elevation of the head of the bed.			✓
Sleeping in the left lateral position.			

Katz PO, et al. *Am J Gastroenterol*. 2022
Zerbib F, et al. *Neurogastroenterol Motil*. 2021
Kahrilas PJ, et al. *Gastroenterology*. 2008

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How do I counsel my GERD patients on lifestyle and diet in a 15-20 minute appointment spot?

My Smartphrase for GERD:

Things that you can do that can help your symptoms:

- Try to make dinner your lightest meal of the day and eat 2-3 hours before bedtime.
- Stay upright for 1-2 hours after eating.
- Avoid eating for 3 hours before bedtime and drinking 30 minutes before bedtime.
- Sleeping with head and shoulders elevated with a wedge pillow may help nighttime symptoms.
- Avoid late night and large meals.
- Weight loss can help with reflux symptoms by reducing pressure on the stomach.

Clinic after visit summary

Endoscopy report

Testing result messages (pathology, radiology, esophageal testing, etc.)

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Pharmacologic Therapies

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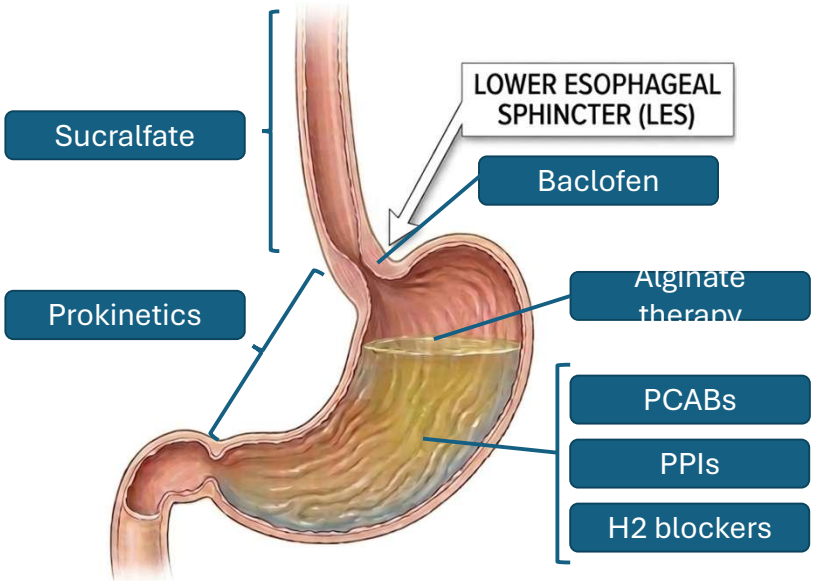
Pharmacologic therapy options for GERD:



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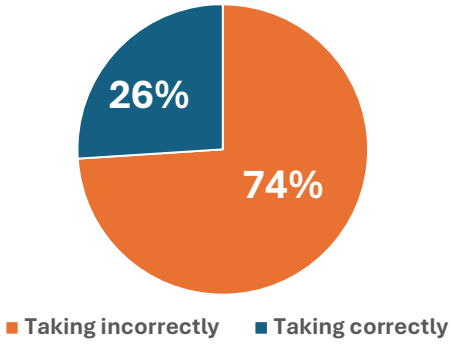
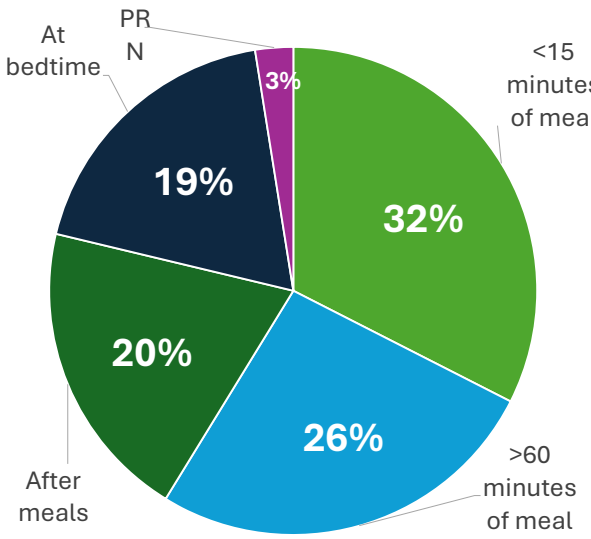
In Defense of PPIs

- **74%** of patients take PPIs *incorrectly.*





Gunaratnam NT, et al. *Alimentary Pharmacology & Therapeutics* 2006.

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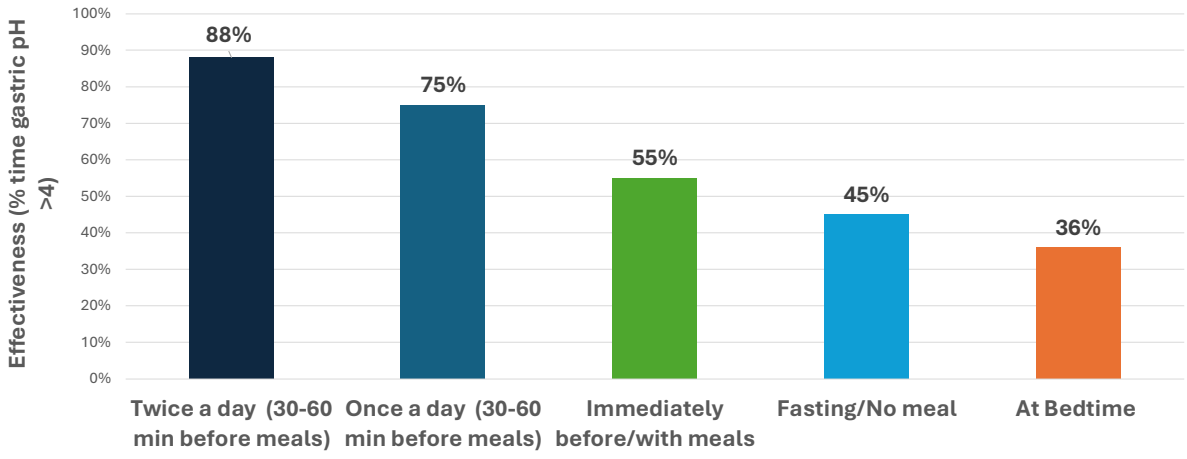
PPIs only work as well as how you time them…



Hatlebakk JG, et al. *Alimentary Pharmacology & Therapeutics* 2000.
Gunaratnam NT, et al. *Alimentary Pharmacology & Therapeutics* 2006.

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Potassium Competitive Acid Blocker (PCABs): How are they different from PPIs?

PCABs don't have to taken before eating.

PCABs are stable in acid (no enteric coating required).

PCABs work faster and for a longer period of time.

- **Doesn't need be converted to an active drug.**
- **Longer half life so takes longer to eliminate from body, leading to longer acid**

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PCABs in PPI Equivalents

- Vonoprazan is currently the only PCAB available in the US (Tegoporazan US New Drug Application submitted in Jan 2026)

	Omeprazole	Esomeprazole
Pantoprazole 20 mg	4.5 mg	2.8 mg
Lansoprazole 15 mg	13.5 mg	8.5 mg
Omeprazole 20 mg	-	12.5 mg
Esomeprazole 20 mg	32 mg	-
Rabeprazole 20 mg	36 mg	22.7 mg
Vonoprazan 10 mg	60 mg	
Vonoprazan 20 mg	60 mg BID	40 mg BID

Graham DY, et al. *Clin Gastroenterol Hepatol.* 2018

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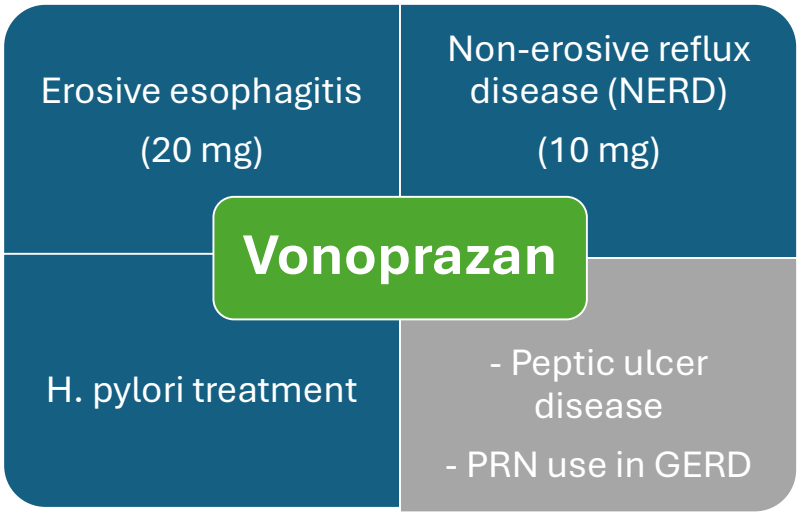
PCABs: Indications



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PCABs: Patient Preferences and Factors

Challenges to PPI use and its effects on efficacy:

- Patients have ***side effects*** with PPI.
- Patients ***can't time their PPI*** dose before meals.
- Patients have a hard time ***being compliant with BID dosing***.
- ***CYP2C19 gene polymorphisms*** result in variability in PPI metabolism.

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- Patients have a hard time ***being compliant with BID dosing***.
- ***CYP2C19 gene polymorphisms*** result in variability in PPI metabolism.

Who do I use PCABs in?

- Challenges to PPI use above
- LA C or D esophagitis
- Failure of max dose PPIs
- Poor surgical candidates who have refractory GERD and:
  - Absent esophageal contractility
  - Hiatal hernia
  - Multiple prior foregut surgeries who may not have great success with

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PCABs: Safety

- **Similar side effect profile to PPI due to inhibition of gastric acid secretion:**
  - C diff diarrhea, bone fracture, cutaneous adverse reactions, vitamin b12 deficiency, hypomagnesemia, increased chromogranin A, fundic gland polyps and masking of gastric malignancy symptoms
- **Avoid use of vonoprazan:**
  - **All doses:**
    - Patients on clopidogrel and prasugrel
    - Breast feeding patients
    - Consider other alternatives in pregnant patients (no available studies)
  - **20 mg dose:**
    - Patients with GFR<30 mL/min
    - Child Pugh Class B or C cirrhosis
- **Monitoring required in patients on tacrolimus**

https://www.phatompharma.com/wp-content/uploads/VOQUEZNA-tablets-Prescriber-Information.pdf

Kagami T, et al. *Clinical Pharmacology Therapeutics* 2018
Suzuki Y, et al. *Journal Clinical Medicine* 2021

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Alginates: Kelp Away The Burn

- Natural polymer extracted from brown algae *(phaeophycean)* that is then converted into an active form (ex: sodium alginate).

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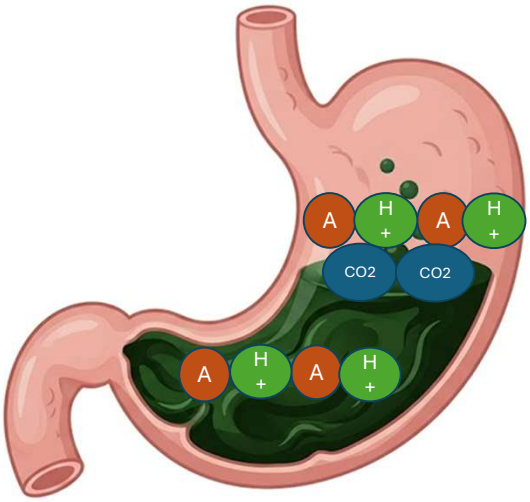
Alginates: Kelp Away The Burn

- Natural polymer extracted from brown algae *(phaeophycean)* that is then converted into an active form (ex: sodium alginate).
- Alginates work within 1 hour of ingestion:
  - Alginate interacts with HCL to produce a gel like substance
  - Sodium bicarbonate in the alginate releases CO2 gas, causing the gel to rise to the surface of acid and forming a raft that acts as barrier above the acid



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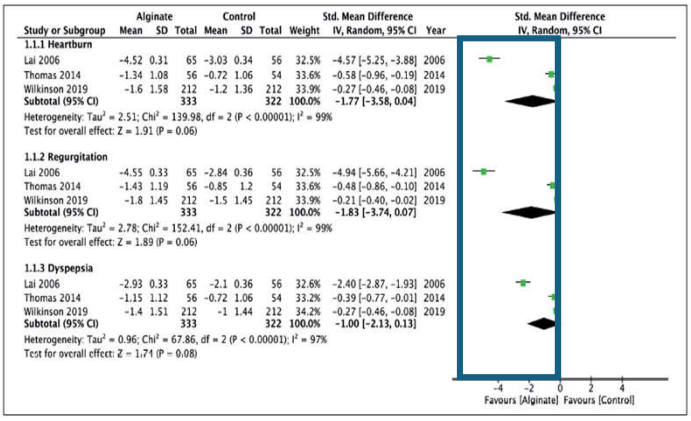
Alginates: The Data

- **Alginates vs Antacids:** Works *faster and longer* than antacids
  - Higher rates of symptom improvement though non-significant result

Speed of Action	Sodium Alginate	Antacid	p
<15 min	11.2%	6.7%	
15–30 min	38.2%	33.7%	
Total	49.4%	40.4%	0.0074



Zhao CX, et al. *Eur Rev Med Pharmacol Sci.* 2020
Giannini EG, et al. *Dig Dis Sci.* 2006

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Alginates: The Data

- **Alginates vs Antacids:** Works *faster and longer* than antacids
  - Higher rates of symptom improvement though non-significant result
- **Alginates +PPI vs PPI Alone**: No statistical difference in alginates +PPI versus PPI alone

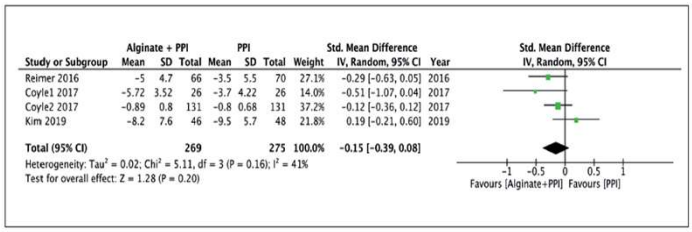

Figure 5. Meta-analysis of total RDQ/HRDQ scores for alginate + PPI *vs.* PPI.

Zhao CX, et al. *Eur Rev Med Pharmacol Sci.* 2020
Giannini EG, et al. *Dig Dis Sci.* 2006

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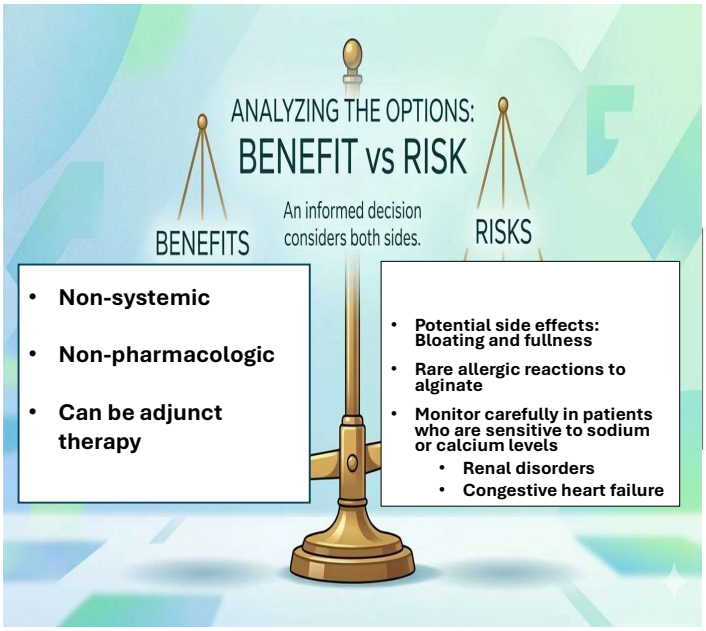
Alginates: The Data

- **Alginates vs Antacids:** Works *faster and longer* than antacids
  - Higher rates of symptom improvement though non-significant result
- **Alginates +PPI vs PPI Alone**: No statistical difference in alginates +PPI versus PPI alone

While meta-analyses have not demonstrated significant results, alginates may be considered in patients who want a non-pharmacologic, non-systemic option.



Zhao CX, et al. *Eur Rev Med Pharmacol Sci.* 2020
Giannini EG, et al. *Dig Dis Sci.* 2006

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Baclofen

- GABA agonist that reduces the transient LES relaxation episodes which leads to reduced acid and non-acid reflux events
  - Dosage for GERD: 5-20 mg TID

	Number of patients	Findings
Grossi (2008)	21	• Increased LES basal tone in comparison with baseline (*P*=0.02) • Reduction in the number of transient LES relaxations (TLESRs) (*P*=0.01).
Koek (2003)	16	• Acid reflux exposure was similar (0.4 % (0.15-2.3) of the time; NS)
Van Herwaarden (2002)	37	• Decreased acid reflux time (8.3±8.8% vs. 12.4±12.0%, *P*=0.03) • Decreased incidence of TLESR (15.1±6.4 per 3h vs. 22.8±5.4 per 3h, *P*<0.0001).
Cossentino (2012)	34	• Significant decreased % total time pH <4 (*P* = 0.003) • Improvement in belching (*P* = 0.038), regurgitation (*P* = 0.036) and overall symptom score (*P* = 0.004)

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Baclofen

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Cossentino (2012)	34	

Based on small studies, baclofen can be considered for patients with refractory GERD, but use is limited by side effects (somnolence, dizziness, fatigue and constipation) which are

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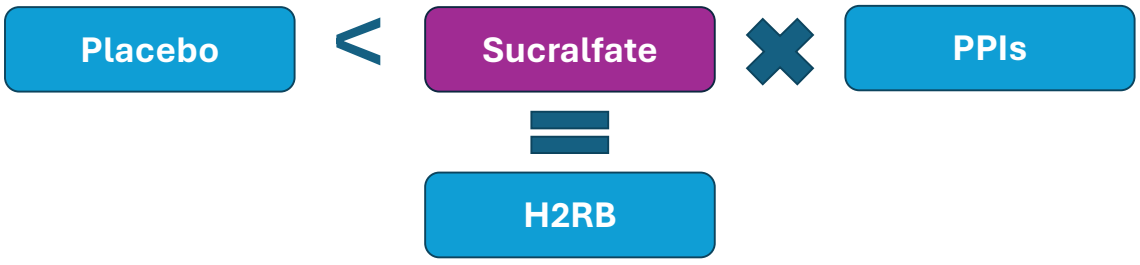
Sucralfate

- Provides a *physical barrier* to block diffusion of acid/pepsin/bile acids and reduces injury to mucosa



Simon B, et al. *Alimentary Pharmacology and Therapeutics* 1996.
Donnellan C, et al. *Cochrane Database Syst Rev.* 2005.
Bremner C, et al. *Am J Med*. 1991.

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Sucralfate

- Provides a *physical barrier* to block diffusion of acid/pepsin/bile acids and reduces injury to mucosa

Placebo < **Sucralfate** ✖ **PPIs**

=

Due to limited data, no role in primary therapy of GERD except in pregnancy given lack of teratogenicity and low maternal adverse events.

Simon B, et al. *Alimentary Pharmacology and Therapeutics* 1996.
Donnellan C, et al. *Cochrane Database Syst Rev.* 2005.
Bremner C, et al. *Am J Med*. 1991.

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Prokinetics

- Meta-analysis of 14 studies (1,437 patients) showed that addition of prokinetics to PPI:
  - Did not improve rate of endoscopic healing
  - Did improve symptoms compared to PPI monotherapy (not statistically significant).

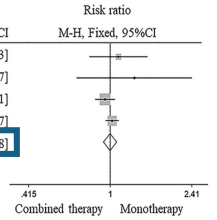
No role in primary GERD therapy *except* in patients with concurrent

ENDOSCOPIC HEALING

a

Study	Combined therapy Events	Combined therapy Total	Monotherapy Events	Monotherapy Total	Weight	Risk ratio M-H, Fixed, 95%CI
Lee, 2017	33	50	26	43	9.91%	1.092 [0.798, 1.493]
Madan, 2004	12	17	6	11	2.58%	1.294 [0.696, 2.407]
van Rensburg, 2001	134	173	145	177	50.82%	0.946 [0.850, 1.051]
Kimmig, 1995	106	113	103	112	36.68%	1.020 [0.949, 1.097]
Total(95%CI)		353		343	100.00%	0.996 [0.929, 1.068]
Total events	285		280			

Heterogeneity: $Chi^2 = 2.35$, df = 3 ($P = 0.503$); $I^2 = 0.0\%$
Test for overall effect: $Z = 0.10$ ($P = 0.917$)

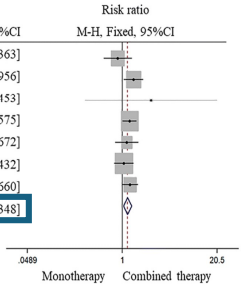


SYMPTOM RESPONSE

b

Study	Combined therapy Events	Combined therapy Total	Monotherapy Events	Monotherapy Total	Weight	Risk ratio M-H, Fixed, 95%CI
Takeuchi, 2018	20	49	23	49	13.70%	0.870 [0.555, 1.363]
Lee, 2017	41	56	27	53	16.52%	1.437 [1.056, 1.956]
Yamashita, 2016	3	12	1	10	0.65%	2.500 [0.306, 20.453]
Wang, 2014	48	58	38	58	22.63%	1.263 [1.013, 1.575]
Cho, 2013	19	24	13	19	8.64%	1.157 [0.801, 1.672]
Miwa, 2011	45	97	42	95	25.28%	1.049 [0.769, 1.432]
Madan, 2004	25	28	23	33	12.58%	1.281 [0.989, 1.660]
Total(95%CI)		324		317	100.00%	1.185 [1.042, 1.348]
Total events	201		167			

Heterogeneity: $Chi^2 = 5.08$, df = 6 ($P = 0.533$); $I^2 = 0.0\%$
Test for overall effect: $Z = 2.58$ ($P = 0.010$)



Xi L, et al. *Esophagus* 2021.
Emerenziani S, et al. *Curr Gastroenterol Rep* 2005

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H2 Receptor Blocker at Bedtime:

- > 70% of patients on PPI therapy have nocturnal acid breakthrough (NAB) where gastric pH < 4 for a period greater than 1 hour overnight
  - PPI pump turnover
  - Histamine mediated acid secretion at night

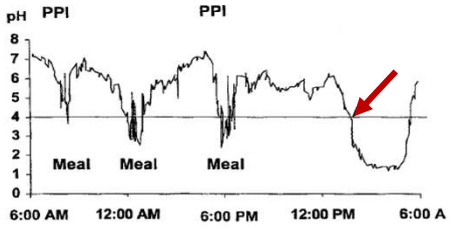

FIG. 1. Acid breakthrough on therapy with PPI *b.i.d.*; 24-h intragastric pH profile. PPI is taken before dinner and before breakfast. At about 1:00 AM the intragastric pH drops < 4 (*arrow*) and remains below that level for > 4 h.

Peghini P, et al. American Journal of Gastroenterology 1998.
Mainie I, et al. Journal Clin Gastro 2008.
Janiak P, et al. Alimentary Pharmacology and Therapeutics 2007.
Orr WC, et al. Alimentary Pharmacology and Therapeutics 2003.
Facker W, et al. Gastroenterology 2002.

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H2 Receptor Blocker at Bedtime:

Study	Number of Patients	Esophageal pH	Symptom
Mainie (2008)	42	Improved	N/A
Janiak (2007)	14	No effect	No improvement
Orr (2003)	19	No effect	N/A
Fackler (2002)	16	Improved (but no difference seen after 1 week of treatment)	N/A
Xue (2001)	45	Improved	N/A

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Xue (2001)	45	Improved	N/A

H2 receptor blockers at bedtime can be helpful if dosed on an as-needed basis given concerns of tachyphylaxis with prolonged use.

Fackler W, et al. Gastroenterology 2002.

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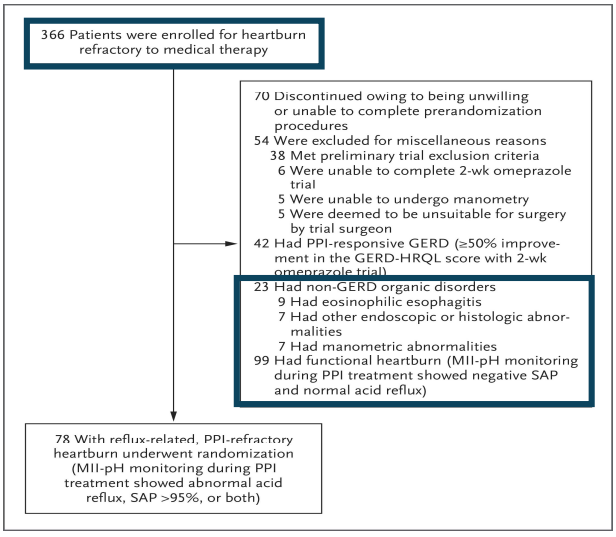
When the Patient Still Has GERD Symptoms Despite Medication

- **Make sure they are taking medication correctly AND consistently.**
- **Confirm that they truly have *refractory GERD by obtaining a 24 hour pH testing ON therapy*** to differentiate medication refractory GERD from other causes:
  - Gastroparesis (10-33% of pts with GERD symptoms)
  - Functional heartburn/reflux hypersensitivity.
- **33% of patients with heartburn refractory to medical therapy had another cause for their symptoms besides GERD.**



Spechler SJ, et al. *New England Journal Medicine* 2019.
Katz PO, et al. *American Journal Gastroenterology* 2022.

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Endoscopic and Surgical Interventions for GERD

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Indications to Consider Endoscopic and Surgical Interventions for GERD

- Objective GERD with *persistent symptoms* and *evidence of ongoing reflux* (+24h pH on therapy, peptic stricture, non-healing reflux esophagitis) despite medical therapy.
- Patients who are *unable* to take reflux medication or *unwilling* to take long term reflux medication.
- Anatomic complications that contribute to ongoing GERD symptoms such as hiatal hernia.

Choosing Wisely®

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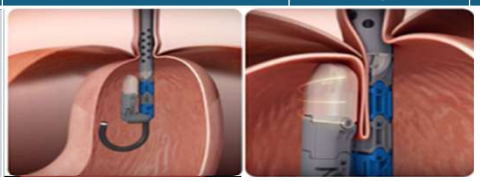
Endoscopic Interventions for GERD

	Mechanism of Action	Symptom Improvement	Esophageal acid exposure	PPI-free rate	Adverse events
Transoral Incisionless Fundoplication (TIF)	Rebuild flap valve (180 to 270 degree plication of the proximal stomach using T fasteners)				

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Endoscopic Interventions for GERD

	Mechanism of Action	Symptom Improvement	Esophageal acid exposure	PPI-free rate	Adverse events
Transoral Incisionless Fundoplication (TIF)	Rebuild flap valve (180 to 270 degree plication of the proximal stomach using T fasteners)	86% improvement in regurgitation at 5y 80% improvement in atypical symptoms at 5y	54% normalized esophageal acid exposure	66% at 5 years	2.4% (perforation and bleeding)

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Antireflux mucosectomy (ARMS) and antireflux mucosal ablation (ARMA)	Inducing scarring/contraction at EGJ to reinforce the anti-reflux barrier by EMR (ARMS) or APC (ARMA)	 			

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Endoscopic Interventions for GERD

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Antireflux mucosectomy (ARMS) and antireflux mucosal ablation (ARMA)	Inducing scarring/contraction at EGJ to reinforce the anti-reflux barrier by EMR (ARMS) or APC (ARMA)	73% symptom improvement at 3 years (ARMS showed more improvement in GERDQ score and reflux esophagitis than ARMA) 2 RCT on ARMA vs sham: one improved GERD and one	**ARMA:** AET improved from 5.5 to 0.7 in one study.	64% at 1 year	**ARMS**: Perforation (2.2%), bleeding **ARMA and AMRS:** Dysphagia (10%)

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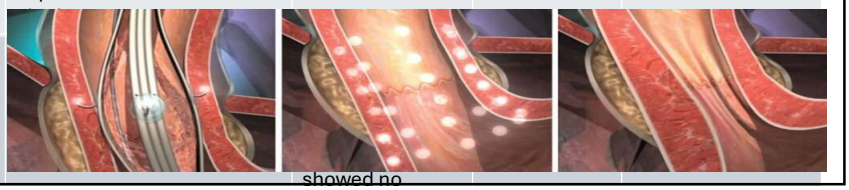
Stretta	Anti-reflux MOA not entirely clear (RFA ablation applied to LES and cardia so may cause		showed no		



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Stretta	Anti-reflux MOA not entirely clear (RFA ablation applied to LES and cardia so may cause	Mixed results in MA/SR: One study showed 72% improvement at 10 years but another showed no difference	Mixed results in MA/SR: One study showed reduced AET but another showed no	41-72% at 10y in one study	1% (stricture, gastroparesis and perforation)

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Endoscopic Interventions for GERD

Not studied in severe GERD (LA C/D reflux esophagitis, esophageal stricture and/or long segment BE patients)

Depending on available expertise, can consider TIF or ARMS/ARMA in patients who are not interested in anti-reflux surgery, have mild GERD +/- hiatal hernia <2 cm.

Chavan D, et al. *Endoscopy.* 2026.
Rodríguez de Santiago E, et al. *Endoscopy.* 2026.
Rodríguez de Santiago E, et al. *Endosc Int Open.* 2021.
Trad KS, et al. *Surg Innov.* 2015 and 2018.
Noar M, et al. *Surg Endosc.* 2014.
Fass R, *et al. Surg Endosc* 2017.

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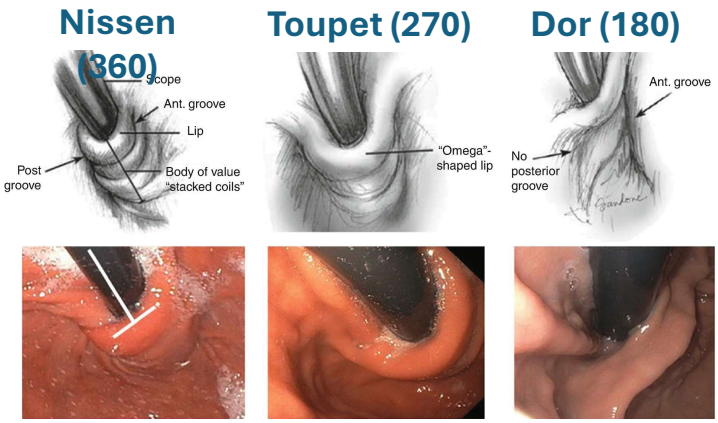
Surgical interventions for GERD: Fundoplication

- Full (Nissen) or partial (Toupet or Dor) fundoplication
- Meta-analysis/systematic review of 1,972 patients showed that compared to medical therapy, surgical patients had:
  - More improvement in heartburn/regurgitation symptoms
  - Higher rates of patient satisfaction with symptom control
- **62%** of surgical treated patients were back on anti-reflux medications after 10–13 years in one study.
- Potential risks: Post fundoplication



Rickenbacher N, et al. *Surg Endoscopy* 2014.
Spechler SJ, et al. *New England Journal Medicine* 2019.
Teitelbaum, E.N. *The SAGES Manual of Flexible Endoscopy* 2020.

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Surgical interventions for GERD: Magnetic Sphincter Augmentation (MSA)

- Ring of titanium beads with magnetic cores is placed around the LES to augment LES opening pressure and swallowing generates pressure to separate the magnets.

Pros	Cons
Effective (81% had >50% improvement in GERD-HRQL scores and 90% off PPI at 5y)	**Dysphagia:** 5-31% pts with 0.5-8.3% requiring device removal
Reversible and doesn't alter gastric anatomy	**Erosion:** 0.3% at 10 years
Less gas-bloat than fundoplication	**MRI conditional:** Safe in MRI machines use up to 1.5T (take into consider in patients who regularly need MRIs)

Eriksson S, et al. *Surg Endoscopy* 2023.
Louie B, et al. *Annals of Surgery* 2024.
Alicuben ET Alicen al. *J Gastrointest Surg*. 2018.
Andreae T, et al. *Foregut* 2024.

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Reversible and doesn't alter gastric anatomy	**Erosion:** 0.3% at 10 years
	MRI conditional: Safe in MRI machines use

Consider MSA in patients with confirmed GERD who prefer to avoid medical therapy or have incomplete response to medical therapy with:

1) Regurgitation predominant symptoms
2) No dysphagia or esophageal dysmotility

8.

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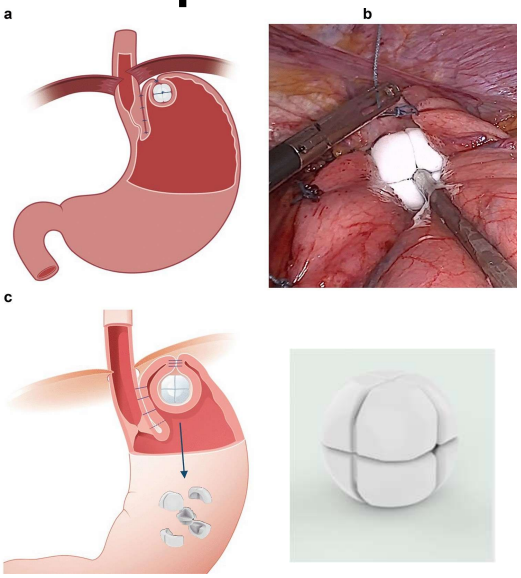
In the Surgical Pipeline: RefluxStop

- Implant that keeps the LES in its natural position within the abdomen placed during fundoplication



Harsányi L, et al. *Surg Endosc* 2025.

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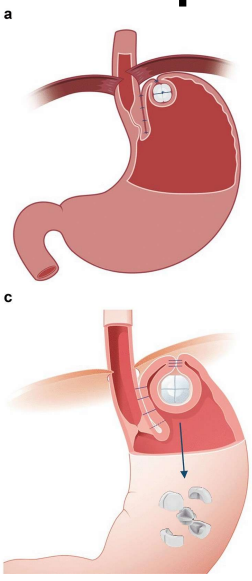
In the Surgical Pipeline: RefluxStop

- Implant that keeps the LES in its natural position within the abdomen placed during fundoplication
- Multi-center study of 50 patients who underwent Reflux Stop who had 5 year follow up:
  - **GERD-HRQL score** improved by median of 90% (72–98%) ($p < 0.001$)
  - **Mean acid exposure time on 24-h pH monitoring results** improved by 90.4% ($p < 0.001$).
  - 97.7% patients were **not on PPI therapy**
  - 0% dislocations, migrations, or re-herniations on contrast-swallow x-ray
- As of Feb 2026, RefluxStop in Premarket Approval status with US FDA (already used in



Harsányi L, et al. *Surg Endosc* 2025.

The 4 R's of RefluxStop

1. **Reposition the lower esophageal sphincter (LES)** to its natural position below the diaphragm.
2. **Repair the weakness in the diaphragm** (hiatal hernia).
3. **Reconstruct the natural angle (angle of His)** between the stomach and esophagus.
4. **Restore** and maintain the body's natural anatomy and physiology that prevents reflux.

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Surgical interventions for GERD: Roux-en-Y Gastric Bypass

- Roux-en-y Gastric Bypass (RYGB) considered for the **treatment of GERD in obese patients (BMI > 35 kg/m^2)** who are *candidates for this procedure* and who are *willing to accept its risks and requirements for lifestyle alterations*

Swiss Multicentre Bypass or Sleeve Study (SM-BOSS):

Improvement in Comorbidities

	OP Type (%: Preoperative Prevalence of Comorbidity)	Remission (%)	Improved (%)	Unchanged (%)	Worsened (%)
Hypertension	LSG (63%)	65.2	34.8	0.0	0.0
	LRYGB (59%)	71.2	25.0	3.8	0.0
Dyslipidemia*	LSG (67%)	43.8	35.4	16.7	4.1
	LRYGB (51%)	71.7	26.1	2.2	0.0
T2DM	LSG (24%)	60.0	35.0	0.0	5.0
	LRYGB (26%)	77.0	23.0	0.0	0.0
OSAS	LSG (48%)	90.2	9.8	0.0	0.0
	LRYGB (42%)	82.2	17.8	0.0	0.0
Back/joint pain	LSG (61%)	44.2	37.2	14.0	4.6
	LRYGB (68%)	42.5	47.5	7.5	2.5
GERD†	LSG (44%)	61.0	5.0	14.6	19.4
	LRYGB (46%)	77.6	14.3	6.1	2.0
Hyperuricemia	LSG (15%)	81.8	9.1	0.0	9.1
	LRYGB (10%)	100	0.0	0.0	0.0
Depression	LSG (20%)	26.7	40.0	33.3	0.0
	LRYGB (11%)	33.4	22.2	44.4	0.0

Peterli R, et al. *Ann Surg*. 2013
Katz PO, et al. *Am J Gastroenterol*. 2022

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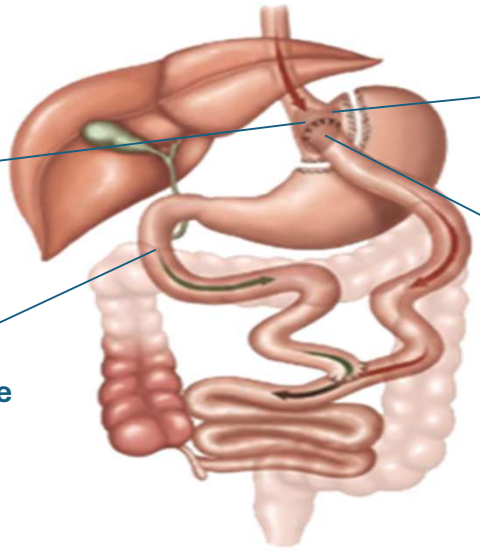
Possible Mechanisms of How RYGB Improves GERD



Gastric emptying is accelerated

Weight loss decreases intra-abdominal pressure

Small proximal gastric pouch has fewer acid-producing parietal cells

Bile reflux is diverted from the esophagus

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Conclusion: The GERD Toolbox

Lifestyle/Dietary Recommendations	Pharmacologic Therapy	Endoscopic Therapy	Surgical Therapy
Weight loss.	PCABs	TIF (consider in <2 cm HH & mild GERD)	Fundoplication
Sleeping in left lateral decubitus position.	PPIs	ARMS/ARMA (consider in <2 cm HH & mild GERD)	MSA (in regurg predom w/o esophageal dysmotility)
Elevate HOB at night.	Baclofen	Stretta	Roux en Y Gastric Bypass (in obese patients)
Avoiding meals within 3 hours of bedtime.	H2 blocker at bedtime		Reflux Stop (not FDA approved yet)
Eat smaller meals.	Alginate therapy		
Avoiding all GERD triggers (consider avoiding individualized triggers).	Sucralfate (unless in pregnancy)		
	Prokinetics (unless in gastroparesis)		

Good data to recommend

Situational use

Fair data to recommend

Poor data to recommend

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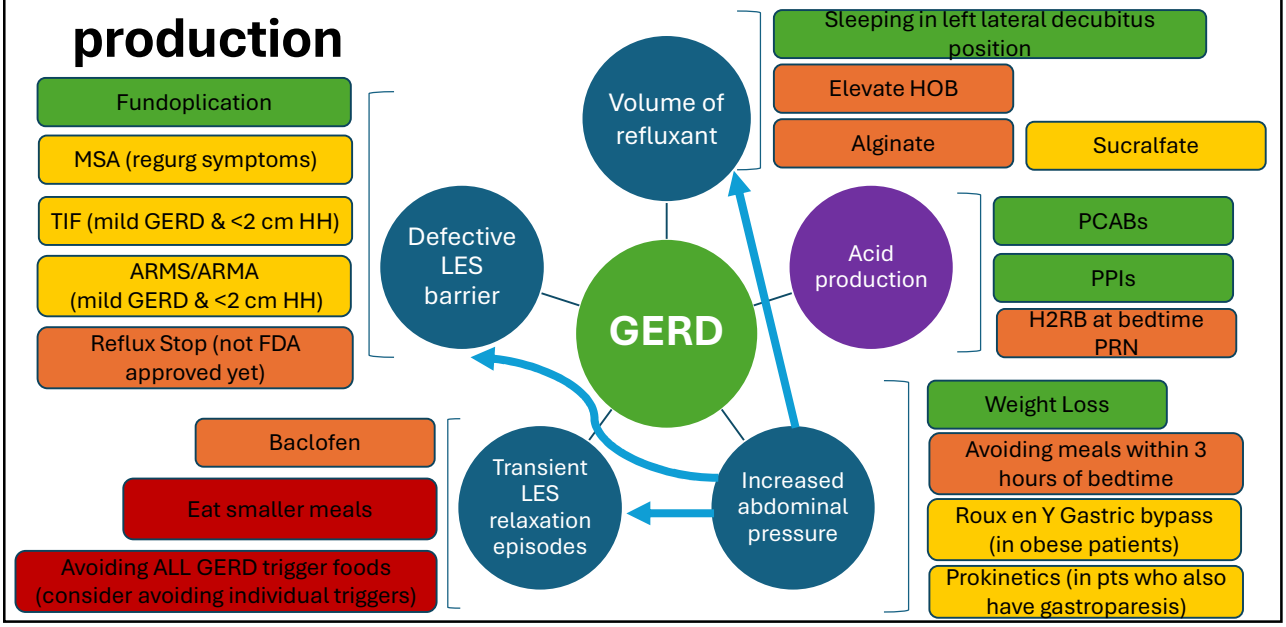
Mechanisms of GERD: More than acid production



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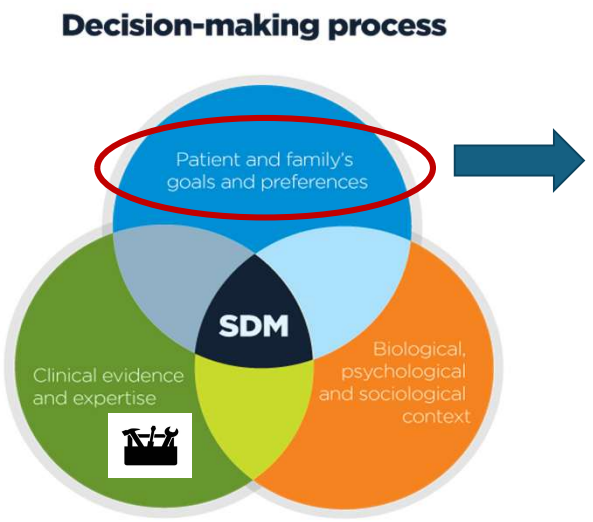
Shared Decision Making in GERD Management



1. Does patient prefer not to take medication?
2. Can the patient take medication consistently *and* correctly?
3. Does the patient have side effects from the medication?
4. Is the medication cost preclusive?
5. What is the risks and benefits of the treatment?

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Questions?

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Questions

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