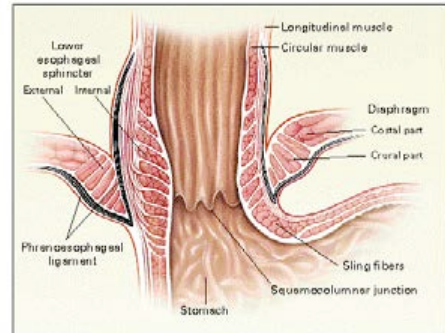
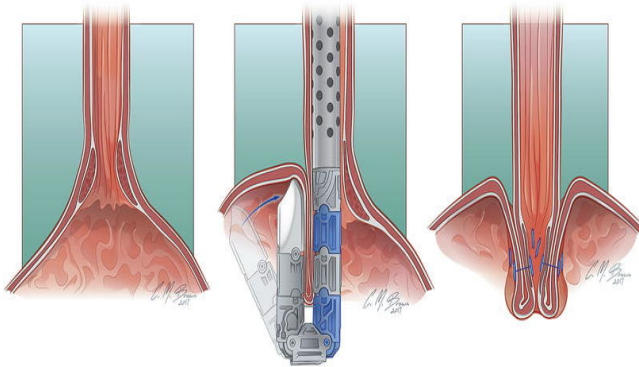




# STOP THE BURN: GERD IN 2023

HEARTBURN IS THE MOST COMMON OUTPATIENT GI COMPLAINT!



Abd radiology, Springer, ISSN: 2366-004X



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## ▪ Gerald T. Simons, PA-C



- Clinical Assistant Professor
  - Stony Brook PA Program
- Surgical PA
- Special interest in GI & gut microbiome
- AASPA
  - Past President
  - Wound Care Instructor
  - BOD

**No disclosures  
No commercial  
associations**



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## OBJECTIVES

- Discuss the mechanism and presentation of GERD.
- Describe the diagnostic approach to GERD, including a trial of PPI, pH probe, and endoscopy.
- List the management steps for GERD, including lifestyle changes, dietary modification, medications, and surgical interventions.
- Recognize the "alarm signs" of GERD and discuss options for intervention early on.



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## WHAT'S NEW IN 2023

- More H. Pylori resistance
- Greater appreciation for the anatomic abnormalities of GERD
- New endoscopic surgical interventions
- Increasing concerns about the overprescribing of PPIs
  - Still the mainstay of therapy
- Continued appreciation that GERD is more than 'just acid!'
- Los Angeles grade 3 & 4 esophagitis do best with surgical intervention, or indefinite PPIs
- Cytoprotection (sucralfate) is indicated for pyrosis & pregnancy
- With greater longevity, there is more GERD
- Psychiatric patients, autistic patients, parkinsons patients have a much greater frequency of pyrosis symptoms (Bohmer 2006, 2006)



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## QUESTION 1

An initial trial of PPI to diagnosis GERD should last:

- A. 2 weeks
- B. 4 weeks
- C. 8 weeks
- D. 12 weeks
- E. 16 weeks



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## QUESTION 2

Which of the following patients should have endoscopic evaluation of GERD:

- A. A 23 year old male with postprandial GERD and a dry cough x 2 months
- B. A 57 year old male with a new symptom of GERD
- C. A 33 year old female with 6 months of GERD and a successful trial of PPIs
- D. A poorly controlled diabetic with 1 year of GERD who has failed a 3 week trial of PPI
- E. A 67 year old female with severe dysphagia 2 weeks after a fundoplication



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## QUESTION 3

Which of the following is true regarding PPI?

- A. PPIs can be taken indefinitely without monitoring
- B. Rebound acid when PPIs are removed
- C. PPIs are best taken just before a meal
- D. Everyone with GERD requires long term PPI use
- E. PPIs will not alter endoscopic findings



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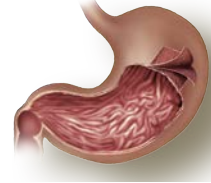
## QUESTION 4

- What percent of your patient FAIL a trial of PPIs as an initial intervention for GERD?
  - A. Rare- less than 10%
  - B. Occasion- about 25%
  - C. Often about 50%
  - D. Common- about 75%



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## GERD TYPICAL PATIENTS



- 49 year old African American male with 10 years of intermittent heartburn
  - Postprandial and wakes him up at night, 2-3x a week
  - Fatigue from poor sleep, dry cough during the day
  - Self medicates with omeprazole or bismuth
- 54 y/o M with GERD who has 'failed medical therapy'
  - H Pylori negative, compliant with diet, failed PPI, Histamine blockade, and cryoprotection
- 66 Y/O M who had fundoplication now with dysphagia.
- A 26 year old PA student w new onset asthma and a nighttime cough
  - PFTs are normal
- A 55 year old accountant w a hx of GERD for 12 years who refuses to refill his PPI due to feeling 'cured!!'



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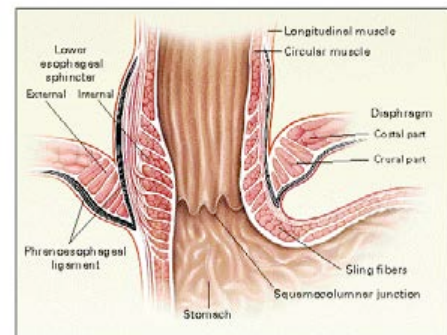
## TIP: LOOK FOR ABNORMAL LES FUNCTION

- The lower esophageal sphincter is our anti-reflux barrier!
- Diaphragm contains the ***phrenoesophageal ligament*** (membrane)
  - The **vital air** tight seal between the thoracic and abdominal cavity
  - Composed of pleura, fascia & peritoneum

It's tough and secures the distal esophagus.

**IMPORTANT STRUCTURE-especially in surgery!!**

**A WEAK LES/ligament = REFLUX !!**



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**Fig. 1.1** The clasp and sling muscle fibers that make up the lower esophageal reflex barrier in the contracted and relaxed state

**Fig. 1.2** The anatomical relationship of the gastroesophageal junction, the phrenoesophageal ligament, and the diaphragm at the esophageal hiatus

## GE JUNCTION SQUAMOCOLUMNAR JUNCTION

**Z Line**

Creates a flap valve

“I’m a PA & I find the Z!”

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**GERD?? <20 mmHg here**

You can test this abnormal GE junction with a manometer!

### Gastroesophageal reflux disease

Healthy

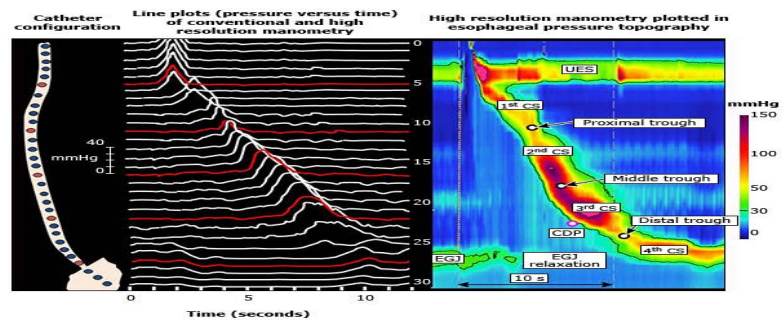
GERD

Manometry is indicated when pH probe is negative for reflux and before fundoplication.

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## MANOMETRY TELLS THE PA HOW THE ESOPHAGUS AS A MUSCLE IS WORKING!

### Conventional manometry and high resolution manometry with esophageal pressure topography



Manometry quantifies intraluminal esophageal and LES pressure during swallowing to detect abnormalities of peristalsis and sphincter relaxation. Conventional manometry achieved this with relatively few pressure sensors (red dots in schematic on the left and red lines in the center panel). Hence data from conventional manometry can only be accurately displayed as pressure versus time plots as in the center panel with large gaps in the esophageal lumen between pressure recording sites. High resolution manometry fills these gaps with a multitude of closely spaced pressure sensors (blue dots in the schematic on the left and white lines in the center panel). Alternatively, high resolution manometry can be displayed as a "Clouse plot" in esophageal pressure topography as in the right panel with pressure plotted as a continuum, interpolating values between the closely spaced sensors and displaying the pressure magnitude by color. When displayed in pressure topographic, stereotypic features of the topographic architecture of the peristaltic contraction become evident, labeled as the 1st, 2nd, 3rd, and 4th contractile segments and the proximal, middle, and distal pressure troughs. The 4th contractile segment is the LES. The onset of the swallow, timed by upper sphincter relaxation, is indicated by the vertical dotted line.

UES: upper esophageal sphincter; CDP: contractile deceleration point; EGJ: esophagogastric junction; CS: contractile segment; s: second; LES: lower esophageal sphincter.

UpToDate®

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## WHAT CAN WEAKEN THE LES OR INCREASE INTRAABDOMINAL PRESSURE

- Alcohol
- Tobacco use
- Obesity –risk factor for erosive esophagitis
- Pregnancy
- Hiatal Hernia
  - >5 cm requires repair
- Gastroparesis (diabetes)
- Medications
  - Central nervous system depressants, TCAs, opiates, benzo's
- Constipation
- Food: especially chocolate & peppermint



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## PATHOPHYSIOLOGY OF GERD

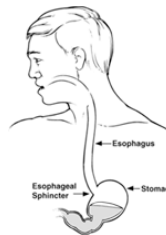
- Failure of the the LES
- Abnormal acid production
  - Everyone has some reflux after a large meal
  - Intensity and amount is the issue!
- Impaired esophageal clearance
- Alterations in esophageal mucosa =more sensitivity
  - Eosinophilic esophagitis
  - Barrett's esophagitis
- Consider bile reflux
- GERD is more than just acid- it's a multifactorial anatomic and physiologic abnormality.

Tack, GE, 2018; 154



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## HEARTBURN & GERD



**The PA said  
he has GERD!**

- 20% of western world
- Annual cost of \$10 billion dollars
- Daily in 10%
  
- Heartburn (PYROSIS)
- Acid Reflux sensation



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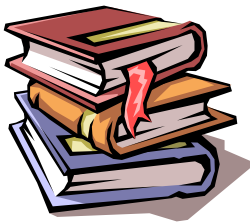
# GERD CLINICAL MANIFESTATIONS

- Pyrosis (heartburn)
- Regurgitation
- Dysphagia
- Dental issues
- Reflux causing symptoms is the most likely to trigger a complication!
- Waterbrash
- Globus sensation
- Odynophagia
- Nausea
- Chest pain
- Cough
- Sore throat



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## GERD DANGER SIGNS ENDOSCOPY REQUIRED!



- N & V
- Weight Loss
- Anemia
- Blood in the stool
- Dysphagia
- Long Duration > 5 years
- Early Satiety
- Odynophagia/Dysphagia
- Evidence of *Complications*
- Especially NEW ONSET in >50 y/o age group

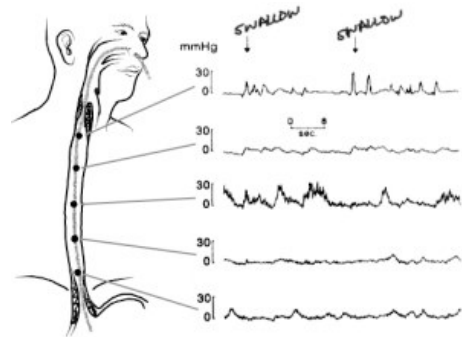
KEY  
POINT



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# DIAGNOSIS OF GERD: FIRST STEP

- Eight week trial of a PPI 30 min before a meal & lifestyle changes
- Most start to see a positive change in 2 weeks!
  - Don't let the patient reflux for a full 8 weeks!
- Partial response or no change in Pyrosis
  - Re-educate on lifestyle changes
  - Re-educate on correct PPI use
  - Change to twice a day PPI
  - Change to another PPI
- If still no change (esp. at 8 weeks)
  - PPIs are unlikely to work!
  - Ph probe/esophageal impedance
  - Endoscopy



The most common way to diagnosis GERD is with lifestyle changes & an 8 week trial of PPI!

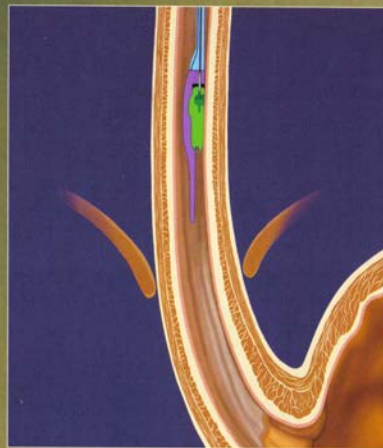
19

**Wireless  
pH probe**

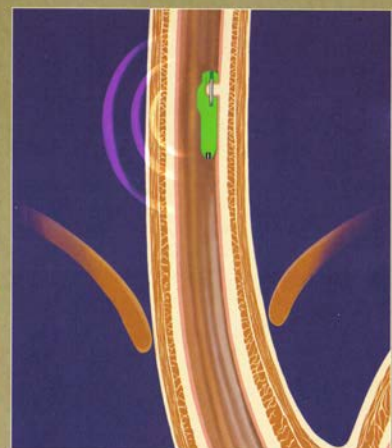


**No benefit from  
PPI?  
Get a pH probe!**

HOW THE BRAVO CAPSULE IS ATTACHED



Positioning the capsule in the esophagus



Recording pH and transmitting data to receiver

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## “I HAVE DIAGNOSED THE PATIENT WITH GERD”

- Successful 8 week trial of PPI & lifestyle changes-now what?
- Option 1
- Continue lifestyle
- Keep them on a PPI
  - not ideal obviously!

### PA Alert:

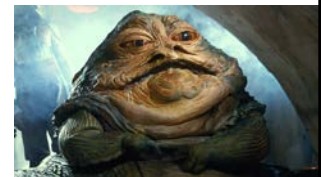
After stopping PPI  
rebound hyperacidity  
is common

Consider a taper!

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## GERD TX EVERYONE GETS LIFESTYLE EDUCATION!

- **GET PRESSURE OFF THE LES**
- Weight loss
- Elevate the head of the bed-use bricks
- GERD Pillow
- Chew and eat slowly, smaller meals
- **AVOID EATING 2-3 HRS PRIOR TO LYING DOWN**
- Avoid constipation
- Avoid foods that trigger symptoms
  - Mint, milk, fried foods, tomato, coffee, carbonation, garlic , etc.



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## GERD TX EVERYONE GETS LIFESTYLE EDUCATION!



- Drink aloe juice
  - Improve saliva production
    - Saliva contains bicarbonate and epidermal growth factors
  - Quit smoking
  - Stop alcohol
- \*Which patients get only lifestyle therapy?**

Check every new GERD patient for H Pylori!



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## PROTON-PUMP INHIBITORS

KEEP PARIETAL CELLS CLOSED irreversibly during its effect!  
Must be taken as a preventative BEFORE A MEAL  
Not helpful when feeling pyrosis!

Dexlansoprazole-Dexilant *ultimate delay release*

Lansoprazole-Prevacid

Rabeprazole-Aciphex

Esomeprazole-Nexium

Pantoprazole-Protonix

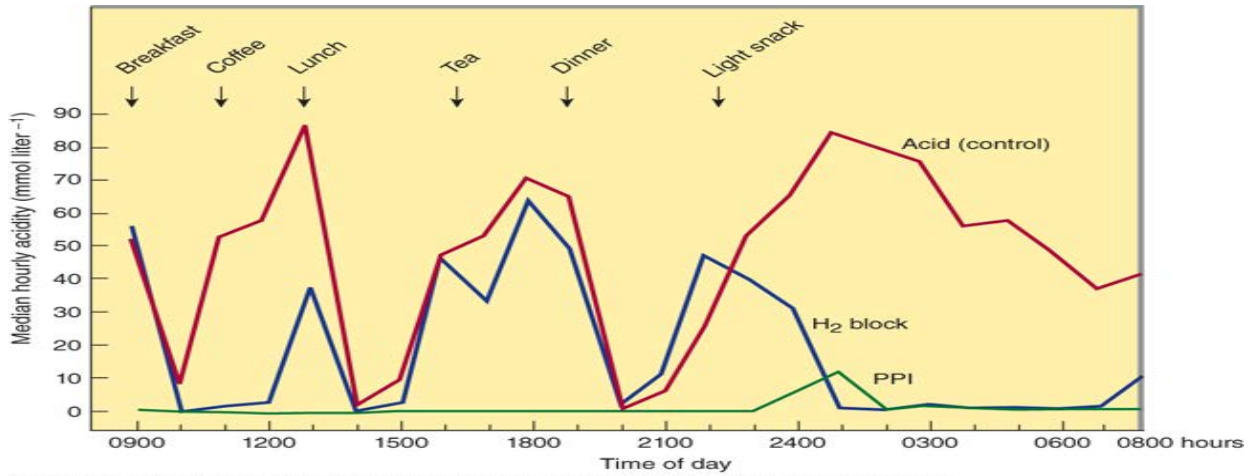
Omeprazole- Prilosec

### PATIENT ED:

- Takes 3-4 days to work
- Must be BEFORE YOU EAT
- Will not help pyrosis
- Not ideal taken long term

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# PPIS: IS THIS NORMAL? (WOW H<sub>2</sub>'S GREAT AT NIGHT)

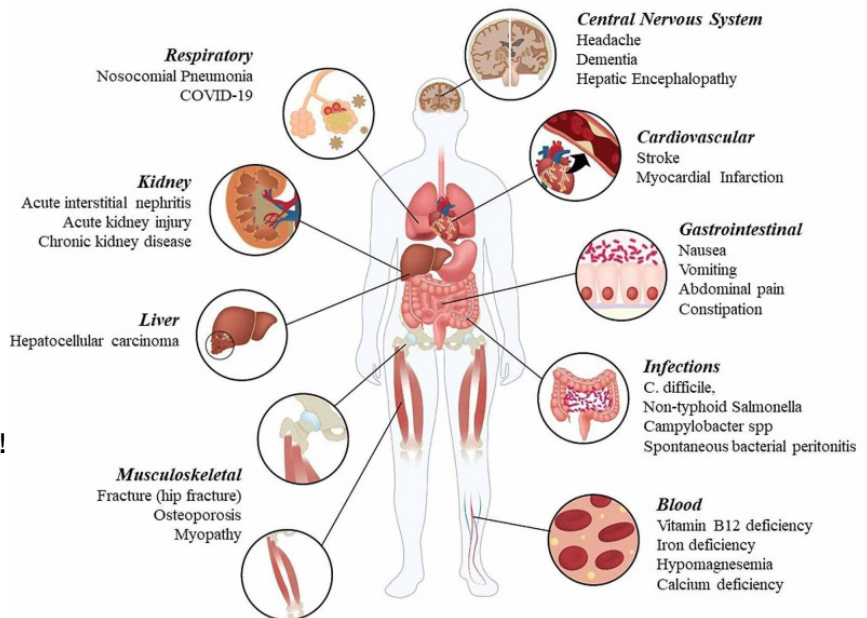


Source: Bertram G. Katzung, Anthony J. Trevor: Basic & Clinical Pharmacology, 13th Ed. www.accesspharmacy.com Copyright © McGraw-Hill Education. All rights reserved.

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## REMINDER: PPI PROBLEMS

- COVID-19
- Less microbial diversity
- Low magnesium
- Bone loss/fractures
- Renal disease
- C.diff (\*Significant risk\*)
- Addiction! Rebound acid!



AGA Guideline warning & >5 studies, most recent:

Yibirin M, De Oliveira D, Valera R, Plitt AE, Lutgen S. Adverse Effects Associated with Proton Pump Inhibitor 2021

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## PPI'S ALTER OUR GUT MICROBIOME

- PPIs alter the pH and affect the modulation of the immune response.
- SIBO and intestinal infections including *Salmonella* spp. and *C. difficile*.
- “Indications are that probiotics may have an effect on inhibiting intestinal dysbiosis after PPIs and may help alleviate the side effects of PPIs therapy.”
  - Kiecka, A. et.al. Proton pump inhibitor-induced gut dysbiosis and immunomodulation: current knowledge and potential restoration by probiotics. *Pharmacol. Rep* (2023)

- **Lactobacillus acidophilus**  
10 billion CFU (Strain LA-1)
- **Lactobacillus paracasei**  
5 billion CFU (Strain LPC-37)
- **Lactobacillus rhamnosus**  
2 billion CFU (Strain LR-32)
- **Bifidobacterium lactis**  
10 billion CFU (Strain BL-04)
- **Bifidobacterium lactis**  
3 billion CFU (Strain Bi-07)

Probiotic tip:  
Look for lactobacillus (upper GI) and  
Bifidobacterium (lower GI)  
&  
a dose in the BILLIONS!

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## AFTER DIAGNOSIS, GERD STEP THERAPY

- 1. Lifestyle
- 2. Antacid
  - Bismuth, calcium
- 3. H2RA
- 4. PPI
- Each step in therapy is additive.
- **Treatments usually overlap**
- There is no set treatment for each patient
- \***“What’s your GERD Protocol”\***

Conversation starter:  
“BTW, I’m a GERD  
STEP THERAPY, PA”



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## STEP UP THERAPY AFTER GERD DX

- STEP UP THERAPY---- PT WITH MILD SX <2 EPISODES PER WEEK
  - LIFESTYLE CHANGES
  - H2 BLOCKER (FAMOTIDINE) great at night
  - ANTACIDS PRN
- IF NO IMPROVEMENT WITH ABOVE (2-8 weeks)
  - PPI
  - Prokinetic
  - Cytoprotectant
  - Consider endoscopy, manometry



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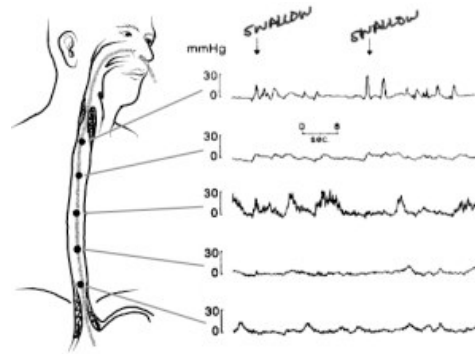
## STEP DOWN THERAPY FOR GERD

- AFTER GOOD SYMPTOM CONTROL FOR 8 WEEKS
  - and no H Pylori
  - and patient is committed to lifestyle changes
- FOR EROSION ESOPHAGITIS USE STEP DOWN THERAPY WITH PPI AND LIFESTYLE CHANGES
- AFTER 8 WEEKS CAN ATTEMPT H2RA BLOCKER
- IF SEVERE ESOPHAGITIS OR BARRETT'S
  - PPI MAINTAINENCE



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- **FAMOUS COMBOS:**
- PPI in am
- -PPI in am, antacid @ bedtime
- -PPI in AM, H2RA @ bedtime
- -H2RA twice a day



+/- Prokinetic for diabetics

**HEY!**  
What's your GERD Protocol

**REDUCE PPI USE**



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```

graph TD
    A[Heartburn and/or regurgitation w/out alarm symptoms  
Symptoms with sufficient frequency and intensity to impair QOL.] --> B[8-week once before meal daily PPI trial]
    B --> C[Complete relief  
GERD likely]
    B --> D[Incomplete relief]
    C --> E[Discontinue PPI]
    E --> F[Symptoms recur]
    F --> G[EGD off PPI 2-4 weeks]
    D --> G
    G --> H[LA Grade B/C/D  
Barrett's >3 cm]
    G --> I[Normal EGD or LA Grade A]
    H --> J[GERD confirmed]
    I --> K[Reflux monitoring off therapy]
    K --> L[Abnormal]
    K --> M[Normal]
    L --> J
    M --> N[Consider other causes for symptoms]
    
```

**GERD  
Protocol per  
ACG  
Jan 2022**

ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease

Katz, Philip O.; Dunbar, Kerry B.; Schnoll-Sussman, Felice H.; Greer, Katarina B.; Yadlapati, Rena; Spechler, Stuart Jon

Official journal of the American College of Gastroenterology | ACG117(1):27-56, January 2022.

OFFICIAL JOURNAL OF THE AMERICAN COLLEGE OF GASTROENTEROLOGY

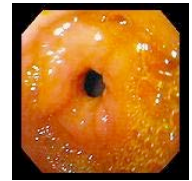
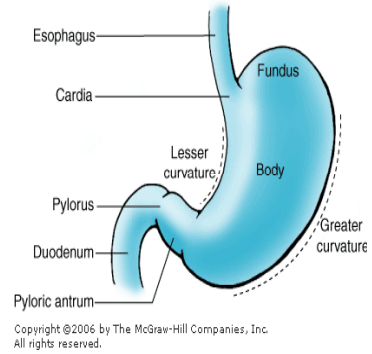


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# GERD: WHO DO WE SCOPE

1. GERD > 5yrs
2. DANGER/ALARM Symptoms
3. Lack of response to PPI/increasing symptoms
  1. Wrong dx?
4. Assess for GERD related complications
5. Follow-up esophagitis
6. Evaluate/follow-up/treat Barrett's esophagus
7. Reflux returns after a successful trial of PPIs
8. In long term patients, symptoms 'magically disappear.'



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## Los Angeles Classification of Reflux Esophagitis

GRADE A	GRADE B	GRADE C	GRADE D
One or more mucosal break <5mm that does not extend between the tops of two mucosal folds	One or more mucosal break >5mm that does not extend between the tops of two mucosal folds	One or more mucosal break that is continuous between the tops of two or more mucosal folds but that involves <75% of the circumference	One or more mucosal break that involves >75% of the esophageal circumference

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## DIFFERENTIAL DIAGNOSIS OF GERD NOT RESPONDING TO THERAPY

- ✓ Infectious esophagitis
  - ✓ Candida
  - ✓ Herpes
- ✓ Pill esophagitis
- ✓ Eosinophilic esophagitis
- ✓ Non ulcer dyspepsia
- ✓ Biliary tract disease
- ✓ CAD
- ✓ Esophageal motility disorder
- ✓ Noncompliance
- ✓ H.Pylori



In patients for whom the diagnosis of GERD is suspected but not clear, and endoscopy shows no objective evidence of GERD, use reflux monitoring be performed off therapy to establish the diagnosis



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## GERD INDICATIONS FOR SURGERY

- Failure of Medical Tx
- Side effects of Acid blockers
- Ulceration of Esophagus
- Stricture
- Bleeding Ulcer
- Frequent Aspiration
  
- *No active H Pylori*

Perform pre-op  
Manometry!

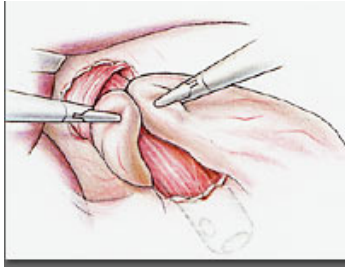
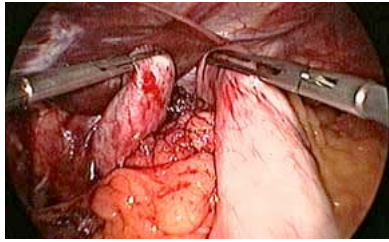


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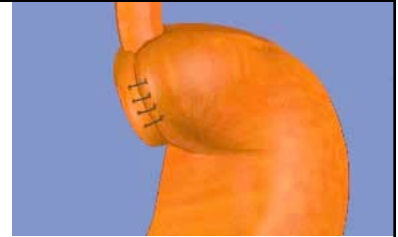
# ANTIREFLUX PROCEDURES

## 1. Nissen Fundoplication

360 Wrap



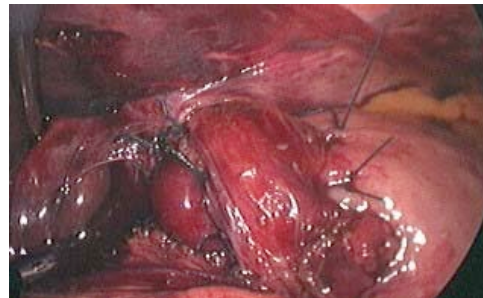
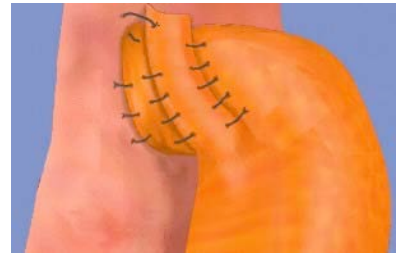
Most prone to post-op dysphagia!



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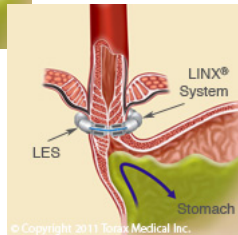
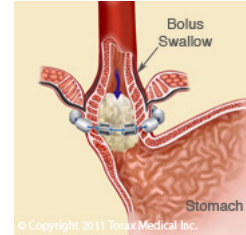
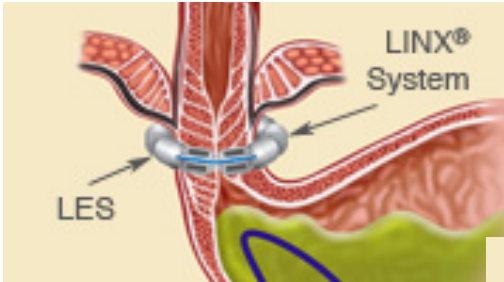
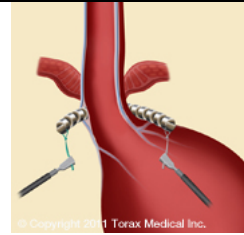
# FUNDOPLICATIONS

- **2. Partial**
- Toupet /Watson
- *Great for patients w dysphagia!*



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# MAGNETIC SPHINCTER AUGMENTATION



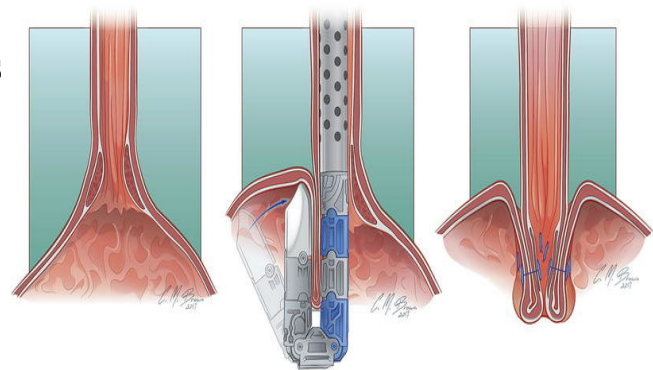
LINX System



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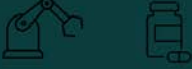


# TIF


- Transoral incisionless fundoplication
- Lasts about 8-10 years (Johns Hopkins data)
- Great for Hiatal hernia
- Almost 90% stop antiacids



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## SAGES guidelines for the treatment of **Adults** with Gastroesophageal Reflux Disease

<p style="text-align: center;"><b>MEDICINE OR SURGERY?</b></p> <p style="text-align: center;">GOAL: TREAT CHRONIC AND REFRACTORY GERD</p> <div style="text-align: center;">  </div> <p style="text-align: center; font-weight: bold; color: white;">SURGERY &gt; MEDICINE</p>	<p style="text-align: center;"><b>ROBOTIC OR LAPAROSCOPIC?</b></p> <p style="text-align: center;">GOAL: MINIMIZE LONG-TERM PPI</p> <p style="text-align: center; font-weight: bold;">ROBOTIC &gt; LAPAROSCOPIC</p> <div style="text-align: center;">  </div> <p style="text-align: center;">GOAL: SHORT TERM SYMPTOMS CONTROL, AVOID REOPERATION</p> <p style="text-align: center; font-weight: bold;">LAPAROSCOPIC &gt; ROBOTIC</p>	<p style="text-align: center;"><b>PARTIAL OR COMPLETE FUNDOPLICATION?</b></p> <p style="text-align: center;">GOAL: MINIMIZE REFLUX</p> <p style="text-align: center; font-weight: bold;">COMPLETE &gt; PARTIAL</p> <div style="text-align: center;">  </div> <p style="text-align: center;">GOAL: MINIMIZE DYSPHAGIA</p> <p style="text-align: center; font-weight: bold;">PARTIAL &gt; COMPLETE</p>	<p style="text-align: center;"><b>DIVIDE OR PRESERVE SHORT GASTRIC VESSELS?</b></p> <p style="text-align: center;">GOAL: MINIMIZE REFLUX</p> <p style="text-align: center; font-weight: bold;">DIVIDE &gt; PRESERVE</p> <p style="text-align: center;">GOAL: REDUCE PROCEDURAL COMPLICATIONS, LONG TERM GAS BLOAT</p> <p style="text-align: center; font-weight: bold;">PRESERVE &gt; DIVIDE</p>
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SAGES Guidelines Committee

KEY POINT





Slater BJ, et al.  
*Surgical Endoscopy* Sept 2021  
Visual Abstract by Walker H & Walsh DS

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The NEW ENGLAND JOURNAL of MEDICINE

### Medical vs. Surgical Treatment for Refractory Heartburn

RANDOMIZED, CONTROLLED TRIAL

<p style="font-size: 2em; font-weight: bold;">78</p> <p>Patients with reflux-related, PPI-refractory heartburn</p> 	<p style="font-weight: bold;">Antireflux Surgery (fundoplication)</p> <p>(N = 27)</p> 	<p style="font-weight: bold;">Active Medical Treatment</p> <p>Omeprazole + Baclofen</p>  <p>(N = 25)</p>	<p style="font-weight: bold;">Control Medical Treatment</p> <p>Omeprazole + Placebo</p>  <p>(N = 26)</p>
<p style="font-weight: bold;">≥50% improvement in GERD-HRQL score at 1 yr</p>	<p style="font-size: 2em; font-weight: bold; color: white;">67%</p>	<p style="font-size: 2em; font-weight: bold; color: white;">28%</p> <p style="font-size: small;">P=0.007</p>	<p style="font-size: 2em; font-weight: bold; color: white;">12%</p> <p style="font-size: small;">P&lt;0.001</p>
<p style="font-weight: bold;">Serious adverse events</p>	<p style="font-weight: bold;">Similar across all groups</p>		
<p style="font-weight: bold; text-align: center;">Antireflux surgery superior to medical therapy for refractory heartburn</p>			

S.J. Spechler et al. 10.1056/NEJMoa1811424

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## SEQUALE OF GERD

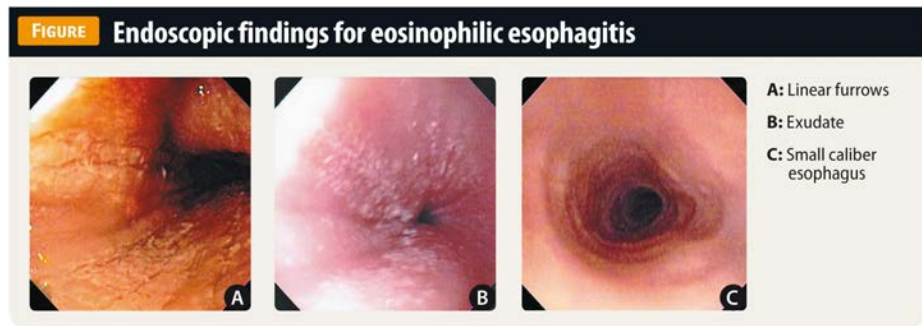
- Esophagitis
- Esophageal stricture
- Esophageal ulcer
- Bleeding
- Barrett's
- Esophageal carcinoma



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## OTHER IMPORTANT CONDITIONS

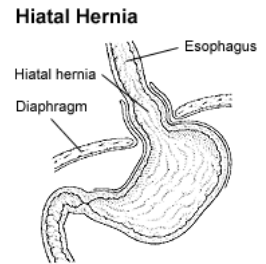
- Achalasia
- Eosinophilic esophagitis
- Hiatal hernia
- Barrett's esophagitis
- Esophageal cancer



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# HIATAL HERNIAS

- HH is the Most common finding on UGIS
- Management of HH starts w the GERD STEP protocol
- **\*Often a cause a failure of GERD therapy**
- Hernias are a mechanical and can twist!
  
- Surgical repair involves returning the contents to the abdomen, repairing any defect, and performing an antireflux procedure



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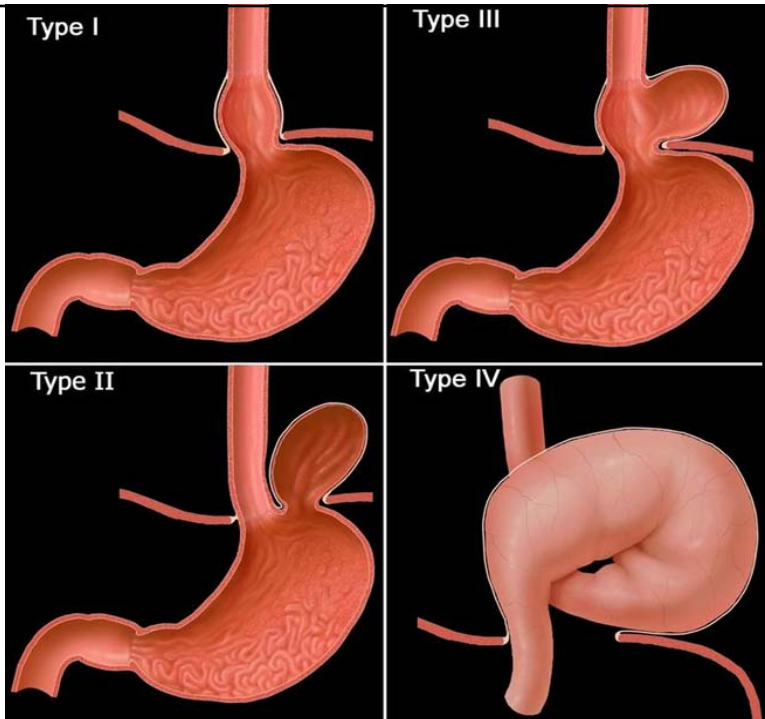
- Diaphragmatic hernias
- Mechanical abnormality

I: Slider

II: paraesop

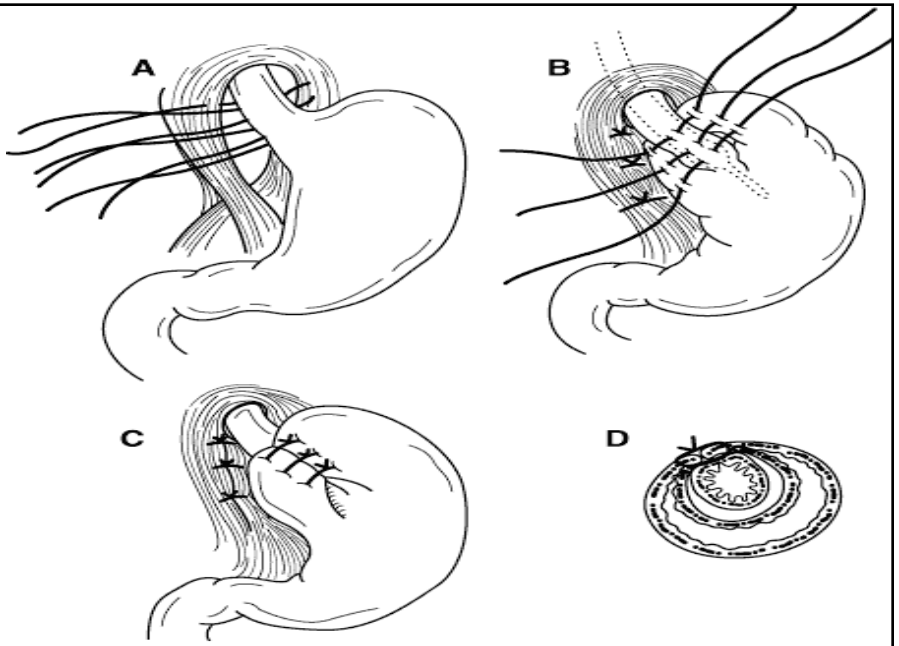
III: 1+2

IV: entire stomach contents!



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Look at that Toupet  
(posterior)  
Wrap!



Source: Doherty GM, Way LW: *Current Surgical Diagnosis and Treatment*, 12th Edition: <http://www.accesssurgery.com>  
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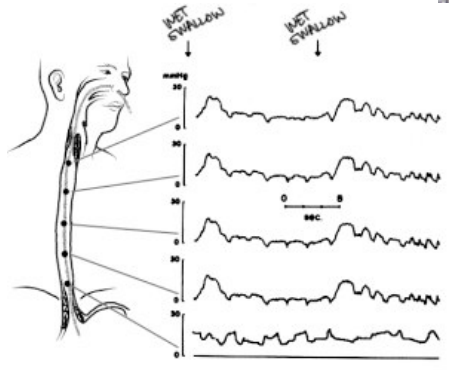
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# ACHALASIA

- UGIS= Birds Beak formation.
- Manometry- perform early for dysphagia
- Balloon dilation



Solid Food dysphagia  
Cold Liquids  
Progressive dysphagia over 2 yrs.  
GERD in 80-90%



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## EOSINOPHILIC ESOPHAGITIS

1. Esophagus is capable of recruiting an eosinophilic response to stimuli
2. **SX:** Dysphagia to solids, substernal chest pain, GERD and dyspepsia
3. Up to 15% of patients presenting for endoscopy with dysphagia have EoE  
4% of patients with refractory GERD
4. 31% of patients with EoE are found to have strictures
5. High risk for spontaneous esophageal rupture or perforation with endoscopy
6. Associated with allergic conditions such as eczema, asthma, food allergies and celiac disease



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## DIAGNOSIS OF EOE

- **DYSPHAGIA!**
- **ENDOSCOPIC APPEARANCE:**
  - **FELINE ESOPHAGUS/LINEAR FURROWING**
  - **SMALL CALIBER OF ESOPHAGEAL LUMEN**
  - **WHITE PAPULES**
- **HISTOLOGIC FINDINGS:**
  - **At least 15 eosinophils per HPF**

LABS: eosinophilia

**GERD is the major differential diagnosis**



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## TREATMENT FOR EOE

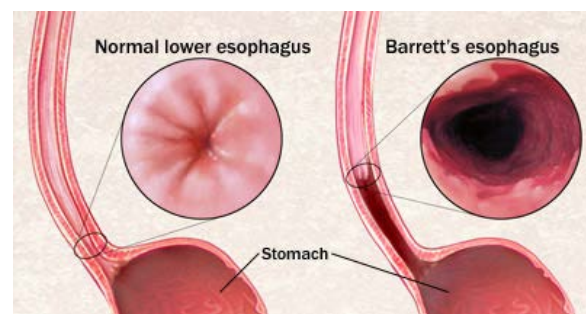
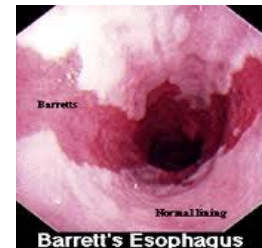
- ELIMINATION DIET
- 8 weeks of PPI (great w H2 blockers which also treat allergies!)
- TOPICAL GLUCOCORTICOIDS, EX FLONASE -SWALLOWED NOT INHALED
  - After 8 weeks check endoscopy for tx success & evaluate for strictures.
- MAINTAINANCE THERAPY PARTICULARLY FOR PATIENTS WITH SEVERE DYSPHAGIA



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## BARRETT'S ...

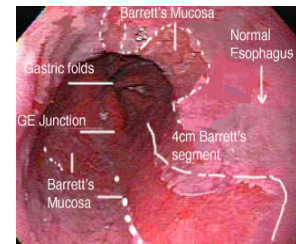
- 55 year old hedge fund manager  
“Hey PA—after 5 years my GERD is cured. I do not need omeprazole!”
- Usually asymptomatic
  - May see GERD & dysphagia
- Occurs in 10% GERD patients
- Most have symptoms > 5 years
- **Advanced dysplasia w.  
>2 Bx's → Esophagectomy**



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# BARRETT'S ESOPHAGUS

- Risk factors
- Increased risk in GERD pts
- Chronic sx
- Hiatal hernia
- >50 y.o
- White males
- Elevated BMI
- Tx: GERD Protocol & endoscopy



- AVERAGE AGE AT dx 55
- MALIGNANT POTENTIAL:  
GERD >> BARRETT'S >> ADENOCARCINOMA OF ESOPHAGUS
- 2:1 M to F
- RISK OF ESOPHAGEAL CANCER  
▪ 30% HIGHER

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# ALTERATIONS IN THE ESOPHAGEAL MICROBIOME

- "Evidence supports a major role of the esophageal microbiome in the pathogenesis of esophageal disease (D'Souza et al; Nobel et al.)."
- Changes in composition of the commensal flora may lead to dysbiosis and ultimately result in disease. The dysbiosis likely contributes to a proinflammatory, cytokine-mediated state that starts in the submucosa.
  - Houston, et.al. Esophageal Disease and the Role of the Microbiome, Chapter 13 - Esophageal dysbiosis—Correcting the paradox: Prebiotics, probiotics, or antibiotics? Academic Press, 2023, Pages 177-194, ISBN 9780323950701,
- Can a probiotic help upper GI as much as it helps lower GI?
  - DB-RCTs under way

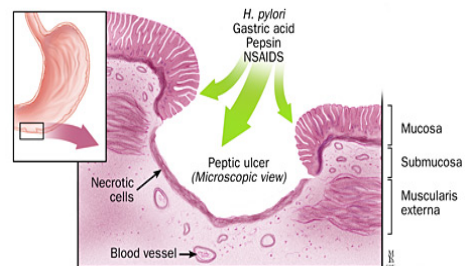
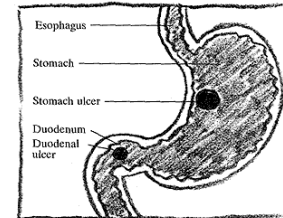


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# PUD

## CLINICAL MANIFESTATIONS

- Dyspepsia
  - Upper abdominal pain
- Epigastric pain
  - 80% of endoscopically diagnosed ulcers are associated with epigastric abdominal pain
  - Sometimes...RUQ or LUQ abdominal pain with radiation to the back
- N/V
- Relation to food intake
  - Asymptomatic complications
    - Elderly patient taking NSAIDs
    - ICU Stress ulcer



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## ESOPHAGEAL CA RISKS

- SMOKER
- ALCOHOL
- ACID REFLUX
- 50-70 years old
- Population constantly exposed to carcinogens in the soil:
  - Northern China, India, Southern Russia

A 61 year old male smoker w GERD presents with dysphagia & wt loss



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## ESOPHAGEAL. CANCER

### ▪ Essentials of Diagnosis

- Progressive dysphagia, initially for solids and later for liquids.
- Progressive weight loss.
- Diagnosis established by endoscopy and biopsies.
- Staging established by endoscopic ultrasound, computed tomography of chest and abdomen.

*Bronchoscopy indicated for CA of the mid-esophagus.*



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## OTHER TIPS: SUPPORT THE MICROBIOME



- Consume prebiotic fibers:
  - Pectin, inulin, fructo-oligosaccharides, asparagus, garlic, onions, leeks, bananas
- Eat fermented foods:
  - Kombucha, fresh sauerkraut, kimchi
- Take probiotics
  - Lactobacilli (multiple species)
  - Bifidobacteria (multiple species)
  - Need doses in the BILLIONS!



- Cheng J, Ouwehand AC. Gastroesophageal Reflux Disease and Probiotics: A Systematic Review. *Nutrients*. 2020; 12(1):132.



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## OTHER TIPS: L-GLUTAMINE

- Essential for gut microbiome support/gut mucosa
- Monitor IgA levels
- Most abundant amino acid in the body and is necessary for the maintenance of many metabolic functions.
- Under situations of stress, physiological demands increase, triggering a need for glutamine supplementation.



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## QUESTION 1

An initial trial of PPI to diagnosis GERD should last:

- A. 2 weeks
- B. 4 weeks
- C. 8 weeks
- D. 12 weeks
- E. 16 weeks



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## QUESTION 2

Which of the following patients should have endoscopic evaluation of GERD:

- A. A 23 year old male with postprandial GERD and a dry cough x 2 months
- B. A 57 year old male with a new symptom of GERD
- C. A 33 year old female with 6 months of GERD and a successful trial of PPIs
- D. A poorly controlled diabetic with 1 year of GERD who has failed a 3 week trial of PPI
- E. A 67 year old female with severe dysphagia 2 weeks after a fundoplication



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## QUESTION 3

Which of the following is true regarding PPI?

- A. PPIs can be taken indefinitely without monitoring
- B. Rebound acid when PPIs are removed
- C. PPIs are best taken just before a meal
- D. Everyone with GERD requires long term PPI use
- E. PPIs will not alter endoscopic findings



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## QUESTION 4

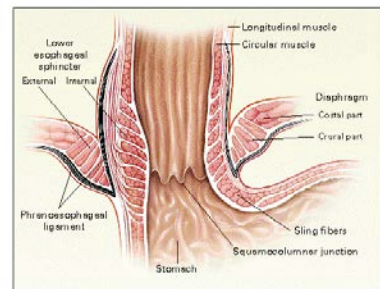
- What percent of your patient FAIL a trial of PPIs as an initial intervention for GERD?
  - A. Rare- less than 10%
  - B. Occasion- about 25%
  - C. Often about 50%
  - D. Common- about 75%



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## IN SUMMARY

- Think structural: Hiatal hernia, weak lower esophageal sphincter
- Start with a trial of PPIs
- Consider tapering off PPIs slowly- use H2RA as a bridge
- Check all for H Pylori early on
- Continual lifestyle education is essential
- Glutamine, aloe, probiotics are great adjuncts!



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## ADDITIONAL REFERENCES

- Elias E, Targownik LE. The clinician's guide to proton pump inhibitor related adverse events. *Drugs*. 2019;79:715–31.
- Boster J, Lowry LE, Bezzant ML, Kuiper B, Surry L. Reducing the inappropriate use of proton pump inhibitors in an internal medicine residency clinic. *Cureus*. 2020.
- Katzka DA, Kahrilas PJ. Advances in the diagnosis and management of gastroesophageal reflux disease. *BMJ*. 2020
- Lassen AT. Acid-related disorders and use of antisecretory medication. *Dan Med Bull*. 2007;54:18–30

