

# GERD & Cough/Complications



# Disclosures

- No conflicts or outside funding from anyone, although considering applying for wage subsidy from Gov't of Canada
- Passive stock investments in pharmaceutical companies which have dropped in value like the rest of the market

# Establishing the diagnosis of GERD

## 1) History

triad of heartburn, regurgitation, epigastric pain/discomfort

## 2) Treatment trial

## 3) Gastrosocopy

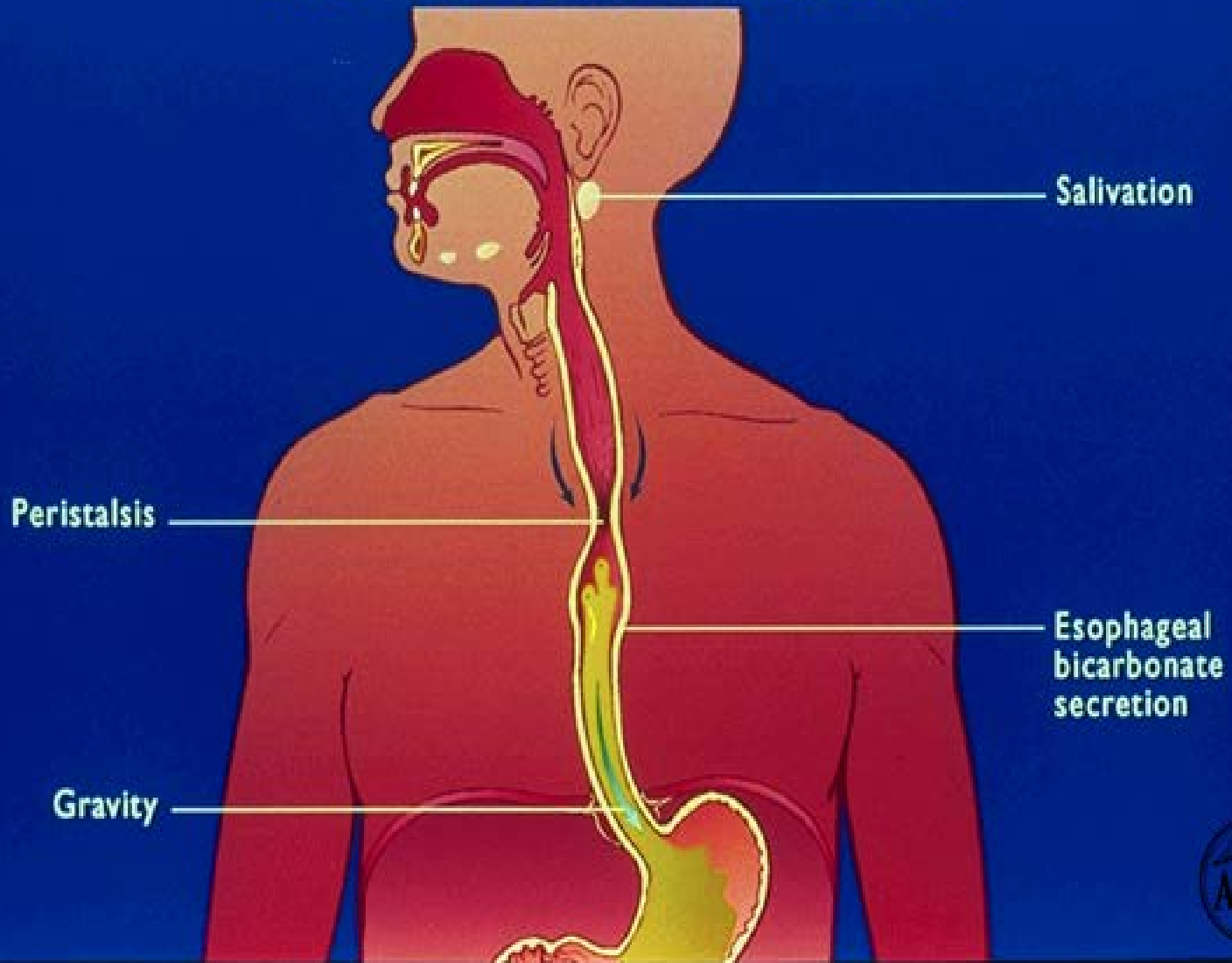
esophagitis or supportive feature of hiatus hernia

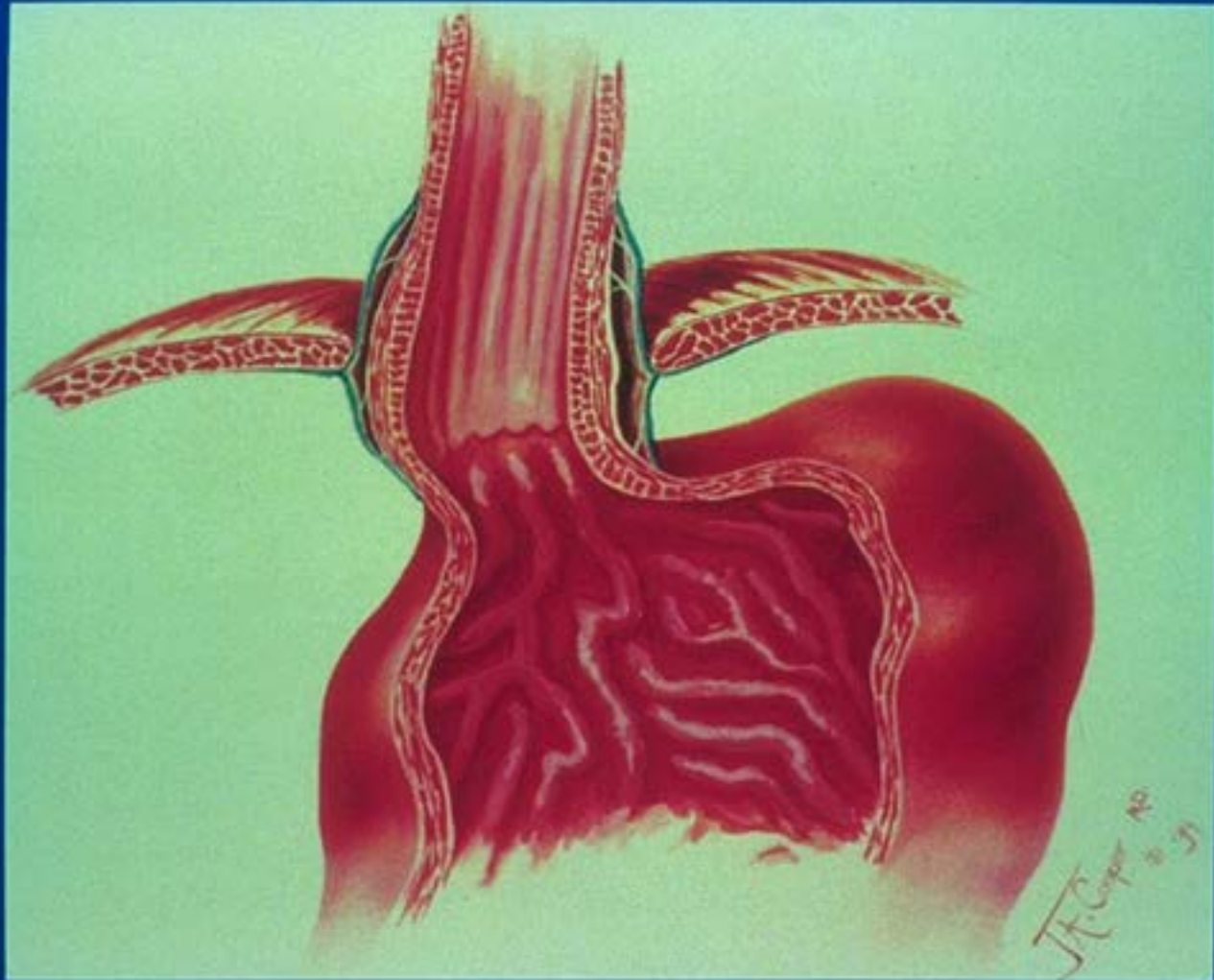
## 4) Biopsy may show typical changes

## 5) pH testing may demonstrate abnormal ph recordings

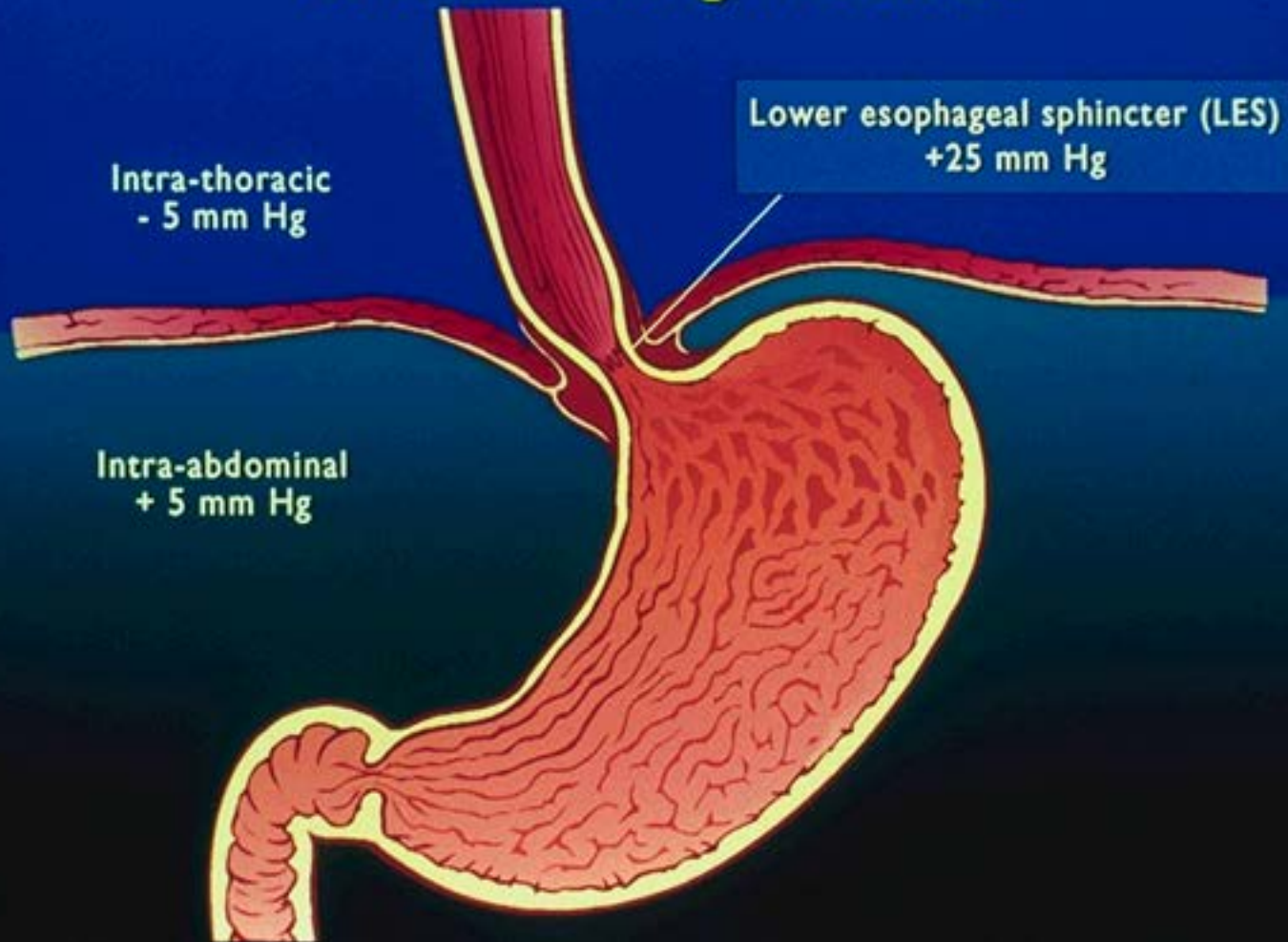
GERD

# Acid Clearance Mechanisms





## Normal Resting Pressures



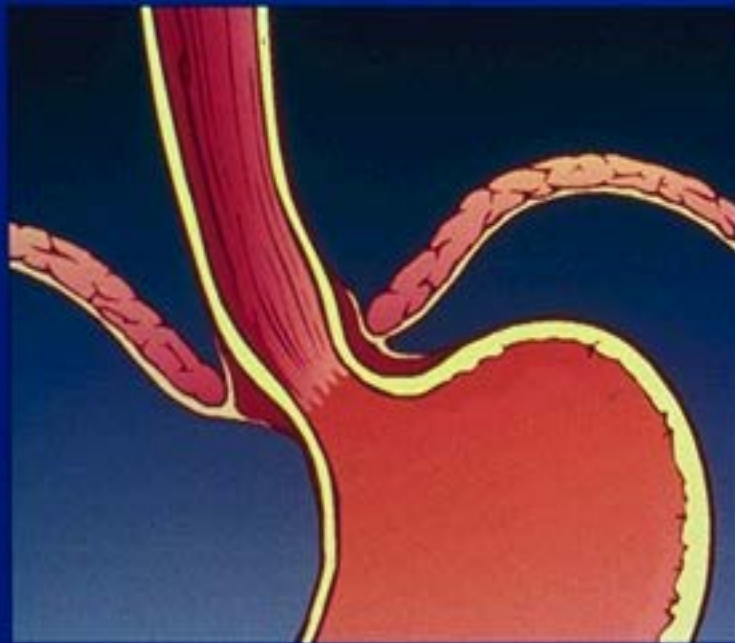


GERD

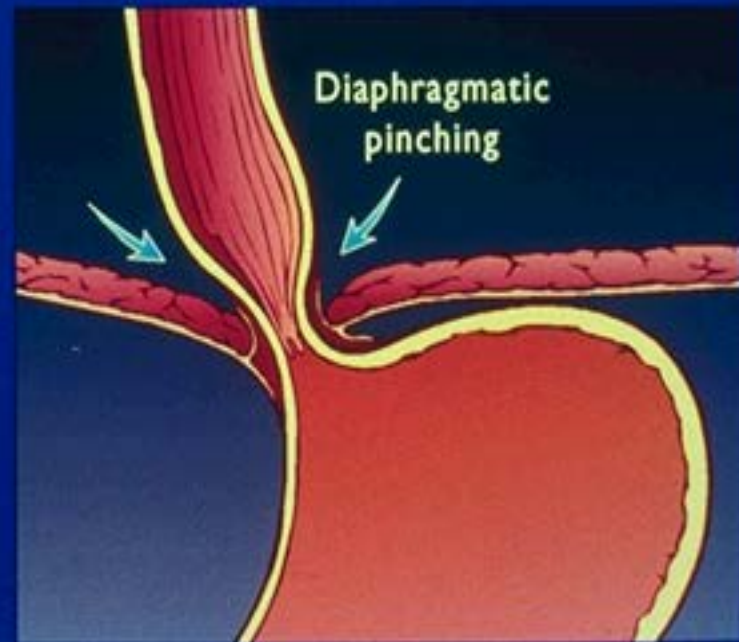
# Non-LES Anti-Reflux Mechanisms



Expiration



Inspiration



GERD

## Hiatal Hernia and Reflux



LES - pressure often low

Gastric pouch - intra-thoracic reservoir

Diaphragm - no esophageal pinch

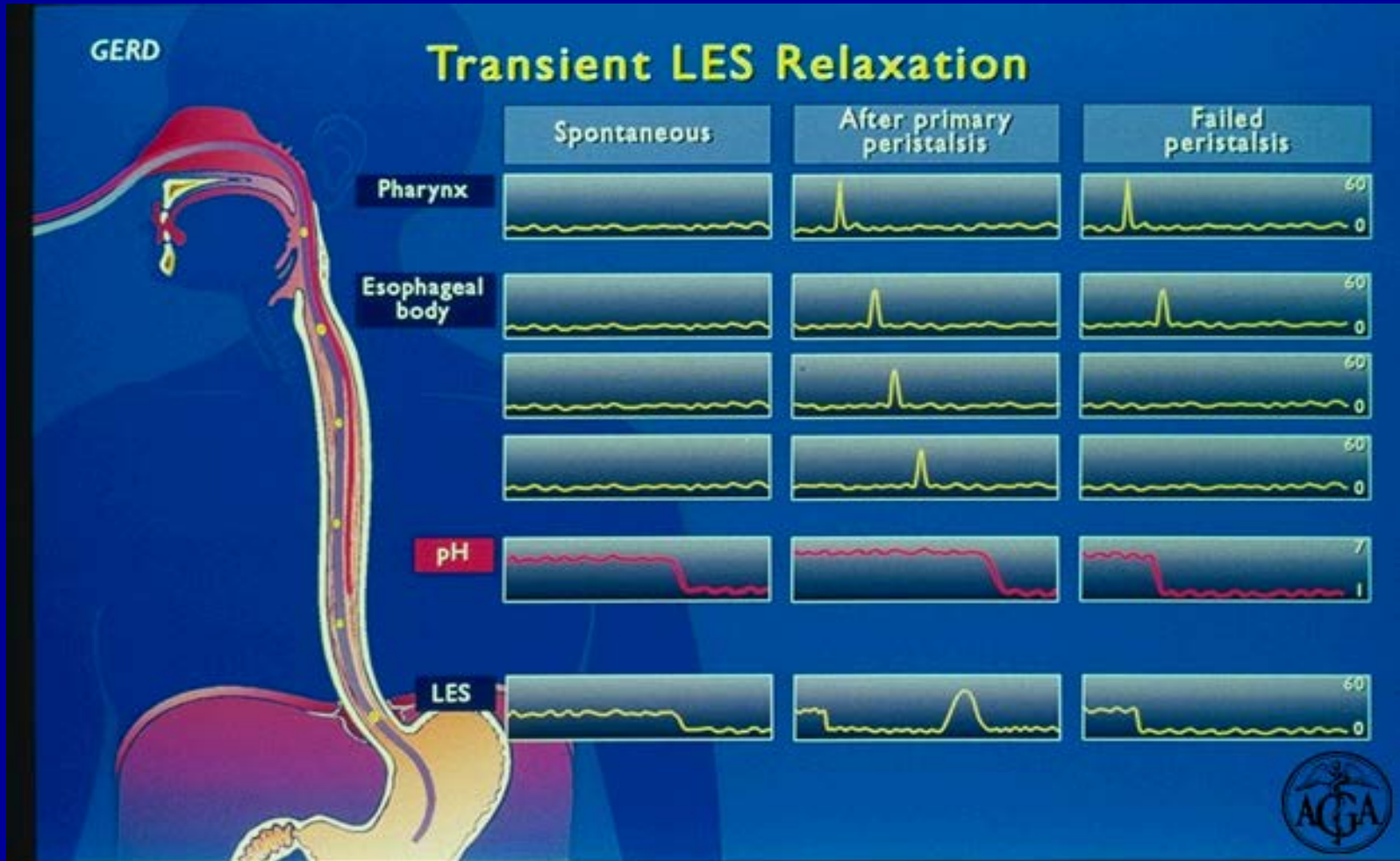




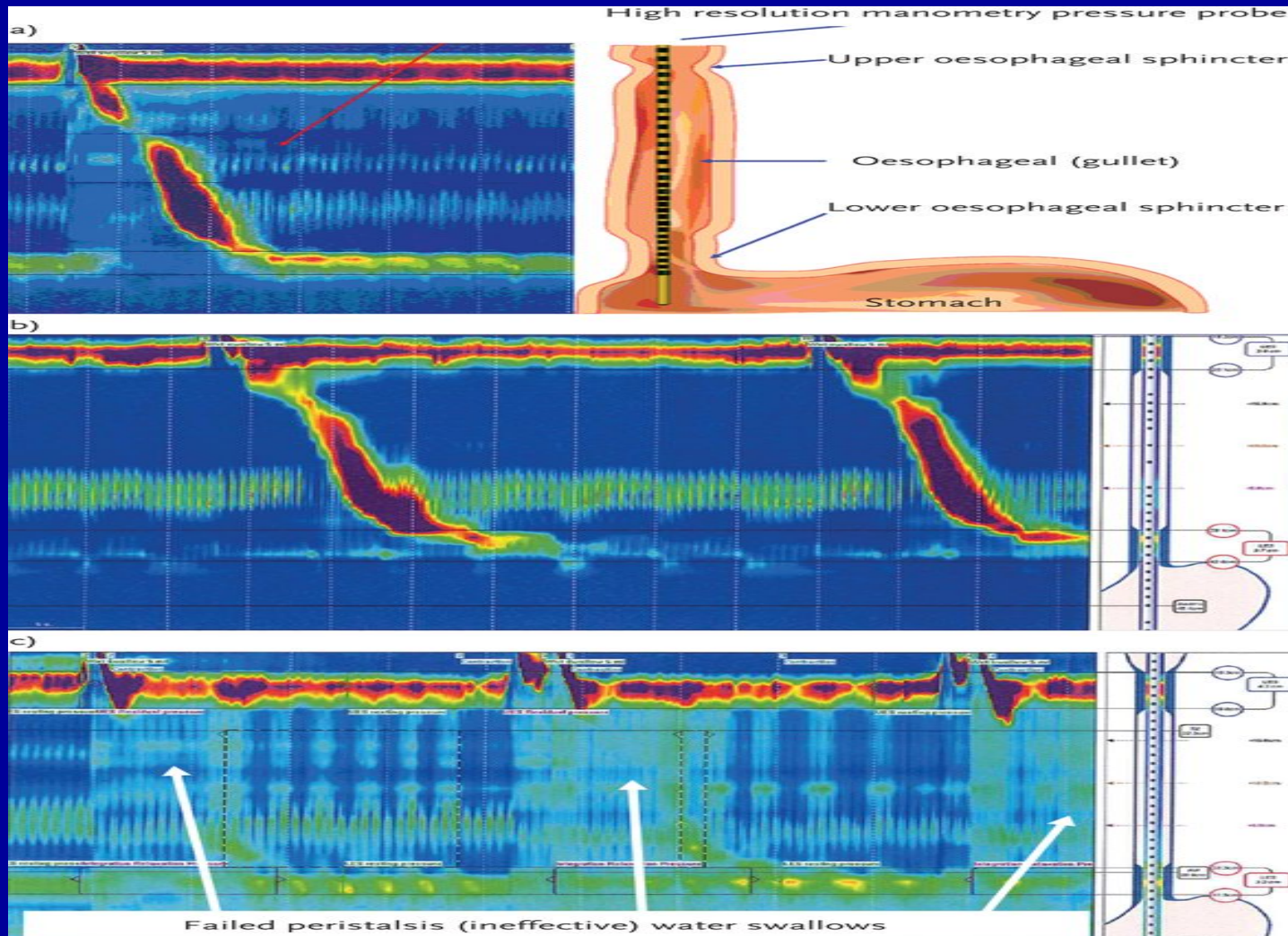
# Gastroesophageal Reflux Disease (GERD)

- Constellation of heartburn, regurgitation and/or epigastric discomfort attributable to gastric acid injury of the esophageal epithelium
- May be associated
  - sour taste, dental erosions, hoarseness
  - odynophagia, dysphagia
  - nausea, aspiration, wheezing after eating

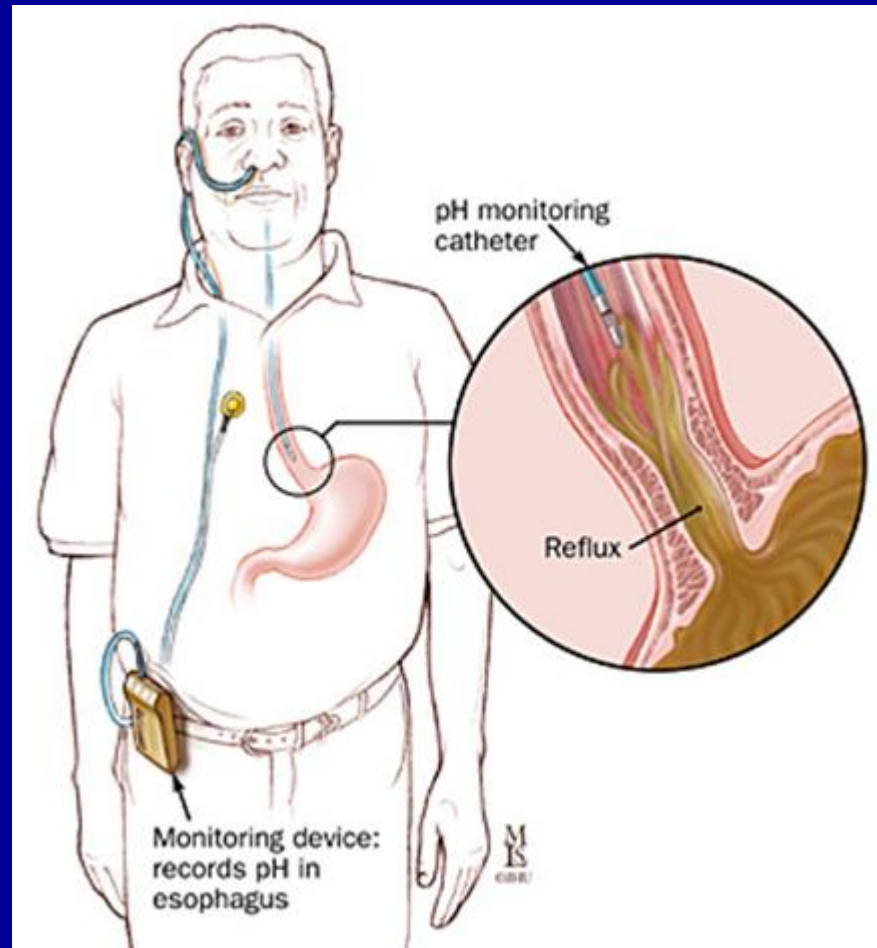
# Major mechanism of GERD



# High Resolution Esophageal Manometry



# Esophageal pH testing



# Mechanisms of Reflux-Related Cough

- 1) Endobronchial Reflex: shared vagal innervation of distal esophagus and airway
- Refluxate stimulates distal esophageal sensory nerves activating a reflex arc resulting in cough. Not necessary for reflux liquid to be acidic.
- 2) Microaspiration: gaseous reflux reaches airway directly via proximal esophagus; worsened by impaired swallowing & esophageal dysmotility. LLM on BAL.



# Reflux Questionnaire

## HULL AIRWAY REFLUX QUESTIONNAIRE

Name: \_\_\_\_\_

D.O.B: \_\_\_\_\_ UN: \_\_\_\_\_

DATE OF TEST: \_\_\_\_\_

Please circle the most appropriate response for each question

<b>Within the last MONTH, how did the following problems affect you?</b>						
<b>0 = no problem and 5 = severe/frequent problem</b>						
Hoarseness or a problem with your voice	0	1	2	3	4	5
Clearing your throat	0	1	2	3	4	5
The feeling of something dripping down the back of your nose or throat	0	1	2	3	4	5
Retching or vomiting when you cough	0	1	2	3	4	5
Cough on first lying down or bending over	0	1	2	3	4	5
Chest tightness or wheeze when coughing	0	1	2	3	4	5
Heartburn, indigestion, stomach acid coming up (or do you take medications for this, if yes score 5)	0	1	2	3	4	5
A tickle in your throat, or a lump in your throat	0	1	2	3	4	5
Cough with eating (during or soon after meals)	0	1	2	3	4	5
Cough with certain foods	0	1	2	3	4	5
Cough when you get out of bed in the morning	0	1	2	3	4	5
Cough brought on by singing or speaking (for example, on the telephone)	0	1	2	3	4	5
Coughing more when awake rather than asleep	0	1	2	3	4	5
A strange taste in your mouth	0	1	2	3	4	5

TOTAL SCORE \_\_\_\_\_ /70

# More on Clinical Features of Reflux and Cough

- GI symptoms may be absent in 75% of cases
- Reclining posture/sleep- poor correlation with ph study defined reflux. Sleep inhibits LES relaxation, cough reflex is inhibited.
- Cough worsens if flat if LES is hypotonic
- Foods and large meals worsen reflux
- Smoking, NSAIDS, lower LES resting tone

# Review

## *Chronic Cough Due to Gastroesophageal Reflux in Adults*

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# Questions

- Can therapy for GERD improve or eliminate chronic, troublesome cough?

Are there minimal clinical criteria to guide practice in determining that chronic cough is likely to respond to therapy for reflux?

## Chronic Cough Was Likely Due to GER Even Without Concomitant GI Symptoms if:

Chronic cough greater than 8 wk duration

Not exposed to environmental irritants nor a present smoker

Not taking an ACE inhibitor

Chest radiograph is normal or shows nothing more than stable inconsequential scarring

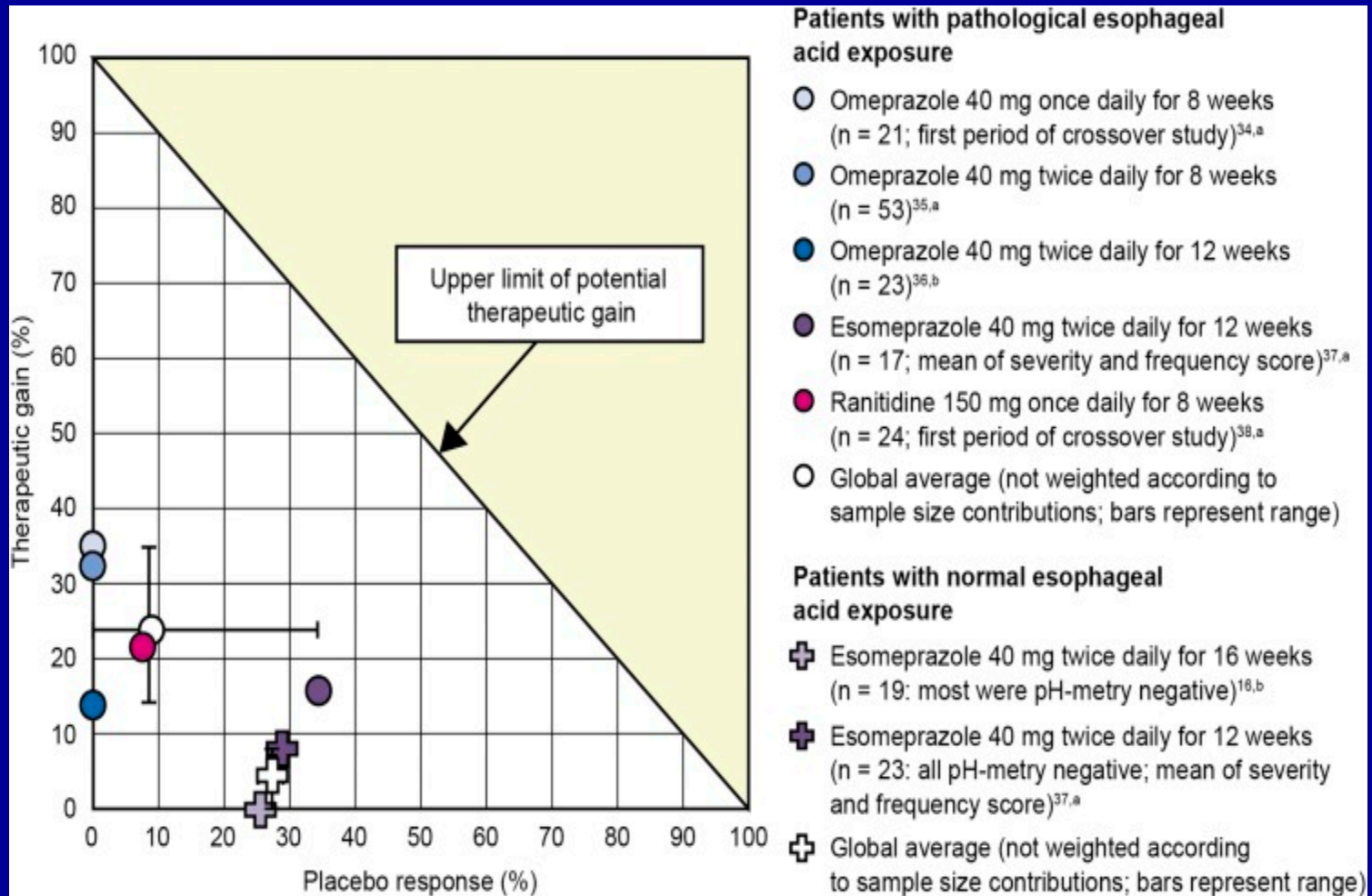
Symptomatic asthma has been ruled out: cough has not improved with asthma therapy or methacholine,

UACS (post-nasal drip) due to rhino-sinus diseases has been ruled out: first-generation H1-antagonist has been used and cough failed to improve, and “silent” sinusitis has been ruled out.

Non-asthmatic eosinophilic bronchitis has been ruled out: properly performed induced sputum analysis studies are negative, or cough has not improved with inhaled/systemic corticosteroids



# Calculated Therapeutic Gain of Treating Cough with PPI's



# Conclusions

- There was a strong placebo effect for cough improvement (13%)
- Studies that included diet modification and weight loss suggested beneficial outcomes
- PPI's demonstrated very limited benefit if used in isolation (12-35%) (2 of 6 RCT's)
- Reserve physiologic testing for refractory patients who may benefit from anti-reflux surgery (2/3 improve if prior sx of regurg, HB)
- Use algorithmic approach, rule out UACS (post nasal drip syndrome)

# OLD mainstay of therapy

GERD

## Lifestyle Modifications

- Elevate head of bed

- Lose excess weight

- Eliminate:

- Tobacco

- Alcohol

- Bedtime snacks

- Certain drugs

- Fatty foods

- Chocolate

- Peppermint

- Others



GERD

## Principles of Anti-Reflux Surgery

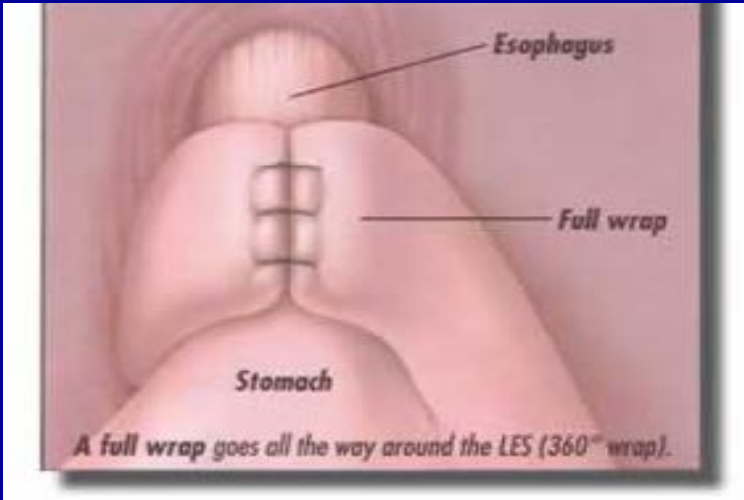
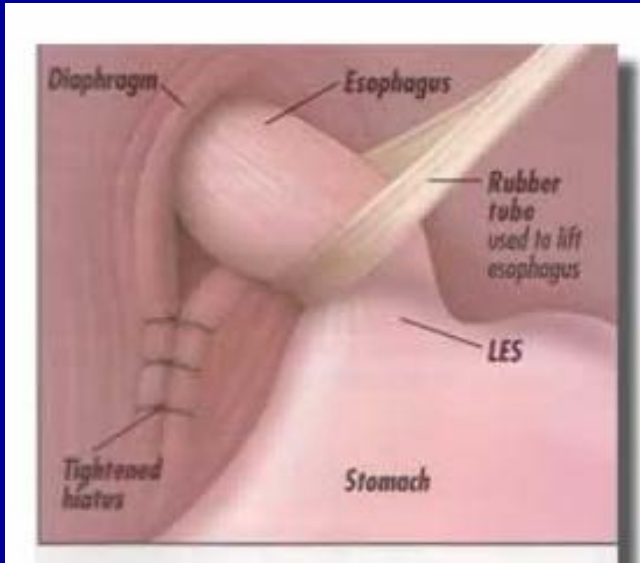
Restore  
Intra-abdominal  
esophagus

Approximate  
Diaphragmatic  
crurae

Reduce  
Hiatal hernia

Perform  
Fundoplication



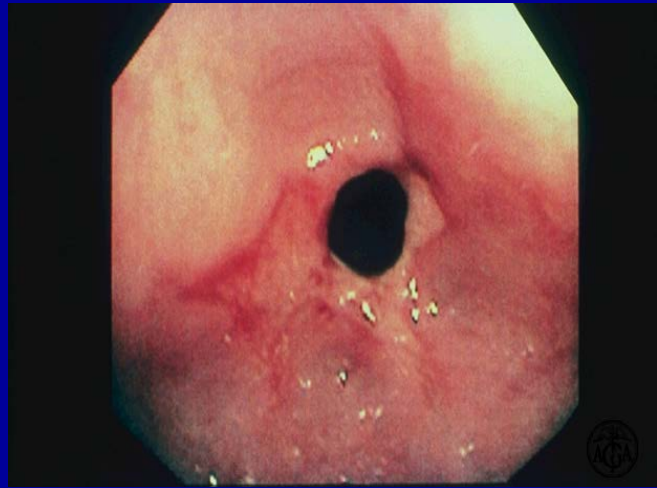
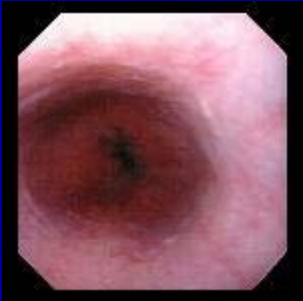


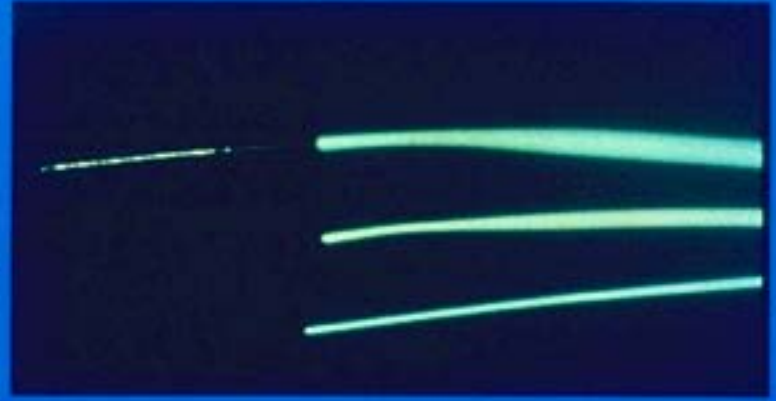
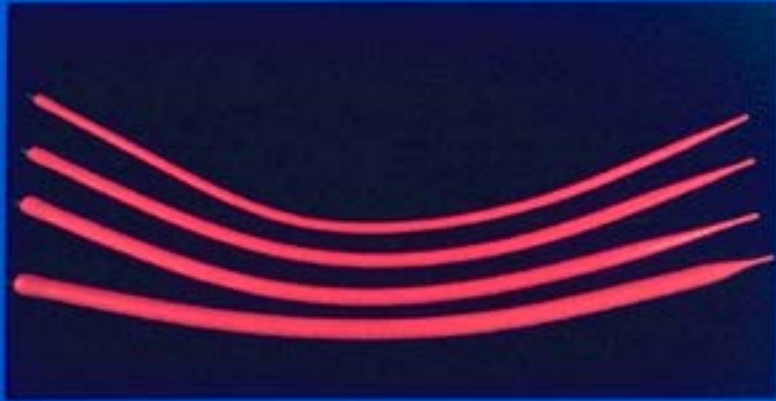


# Complications of GERD









# Proton pump inhibitors

- Bind to parietal cell's proton pumps blocking hydrogen ion secretion
  
- Omeprazole                      @*Losec*
- Pantoprazole                    @*Pantoloc*
- Lansoprazole                   @*Prevacid*
- Rabeprazole                    @*Pariet*
- Esomeprazole                  @*Nexium*



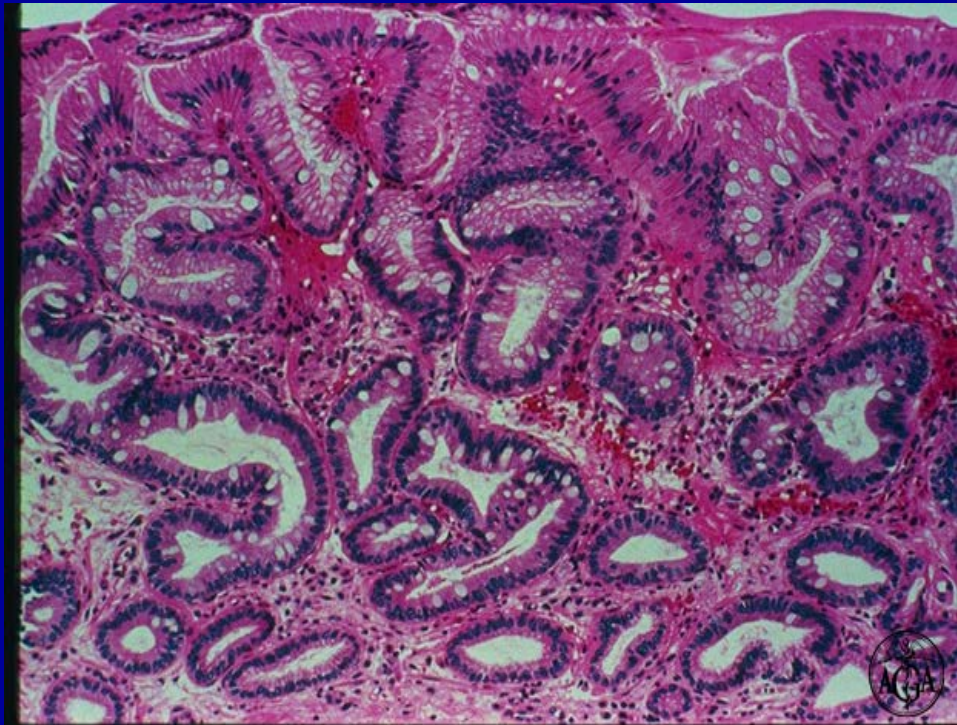
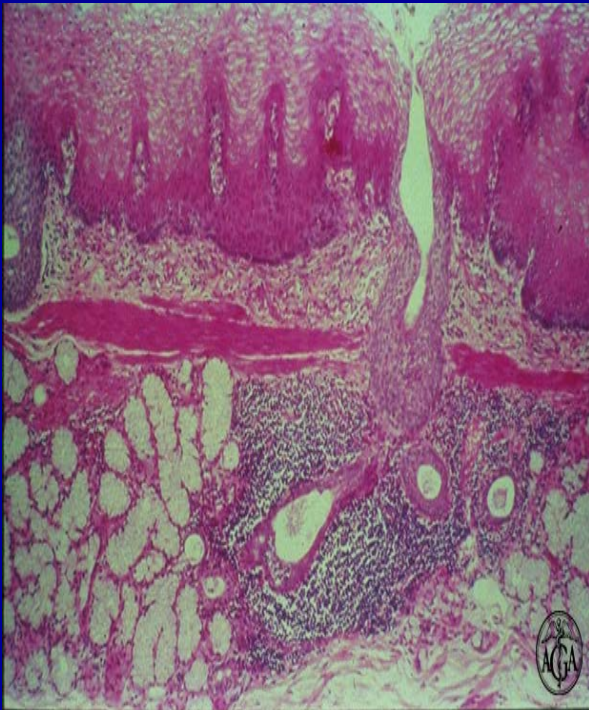
# Barrett's esophagus

- Described 60 years ago by Australian, Dr. Norman Barrett



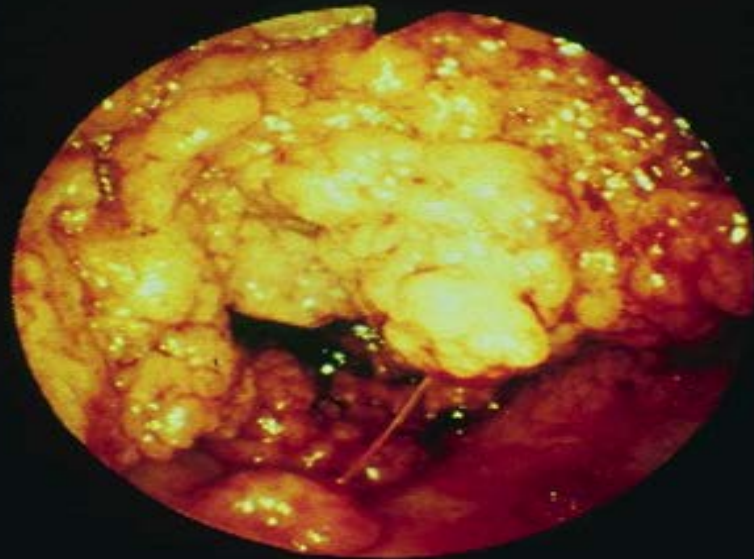
# Barrett's esophagus

- Replacement of squamous mucosa with intestinal type mucosa (intestinal metaplasia)

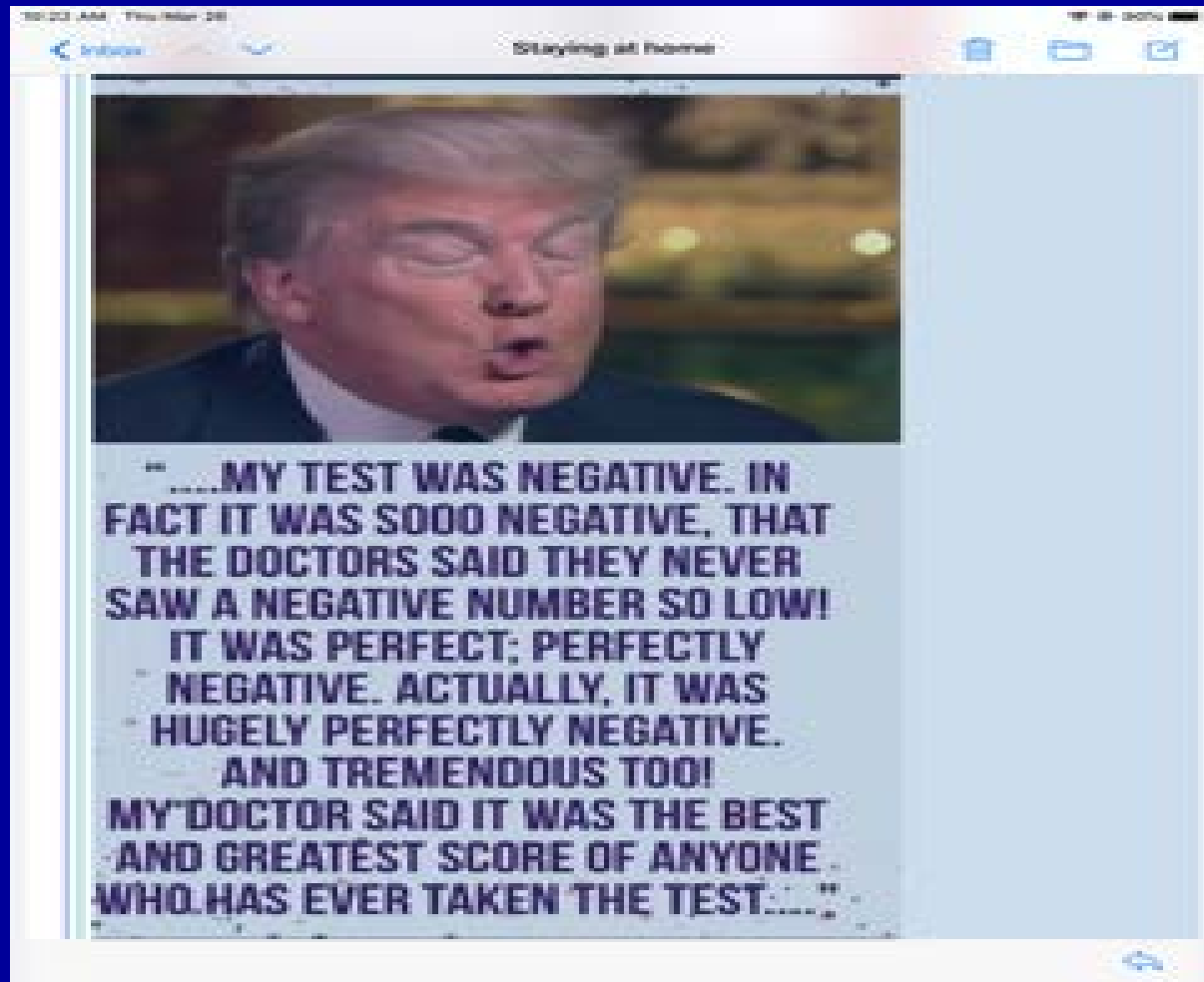


# Esophageal adenocarcinoma

- BE only known precursor lesion to EAC



# Thank-you; Stay Positive and Safe !





# Happy Easter

CH 26, 2020

EDITOR: HOWARD ELLIOTT, helliott@thespec.com



Here are nine COVID-19 changes  
that will linger after the virus is gone

Gwynne

placing what res

# Barrett's and Cancer

- **HOWEVER**
  - Overwhelming majority of patients with EAC do not have BE
  - Only 40% of patients with EAC report GERD
  - Risk of BE transforming to malignancy estimated at 0.12% per annum



# Guidelines on screening BE

- **Maintain perspective**
  - more likely to die of complications of common diseases (IHD, DM)
- **Risks for BE**
  - Male gender
  - Age >50
  - Central obesity, smoker
  - Family history of EAC

# Screening for BE

- Person with longstanding GERD, with risks can be considered for a screening
- Emphasize, that we treat GERD to control symptoms for wellbeing rather than to prevent cancer

# Functional disorder

- Patient present with complaints referable to the esophagus ( eg heartburn, regurgitation, epigastric discomfort, dysphagia)
- Incomplete or no response to acid suppression
- Normal gastroscopy
- Normal biopsy
- Normal ph testing

# Functional esophageal disorders

## Rome classification

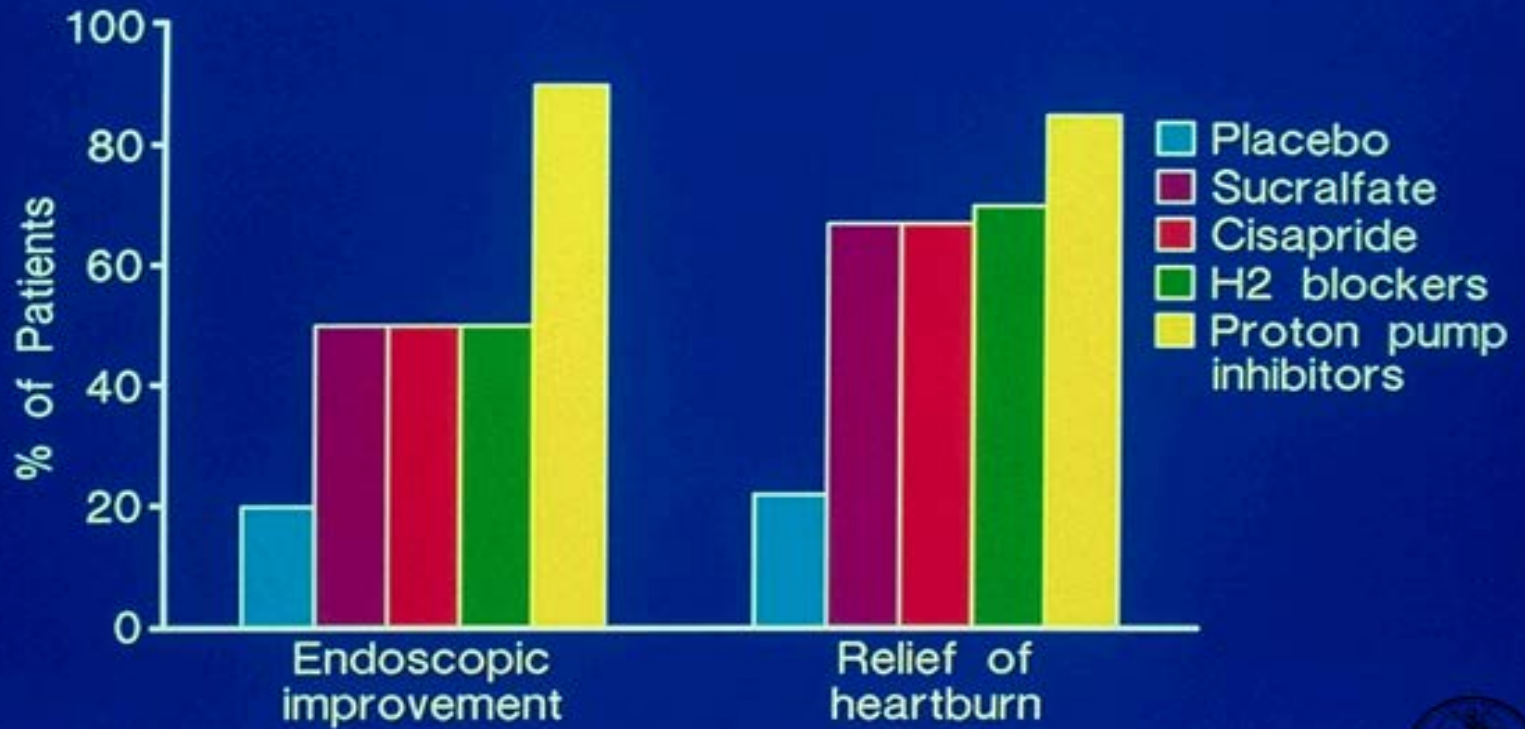
- Globus
- Rumination syndrome
- Functional chest pain
- Functional heartburn
- Functional dysphagia
- Unspecified functional esophageal disorder

# Explaining it to your patient

- Something is not “functioning” correctly
- Some disturbance of physiology which cannot as yet be explained by medical testing
- Not progressive but frustrating
- Not serious, but can be severe/debilitating

# Treatment options

GERD





# Functional esophageal disorders

- Very common
- Emergency, Cardiology, ENT, Family
- Need to recognize it
- Don't persist with ineffective PPI therapy
- Don't switch PPI therapy
- Educate and reassure
- Limited role for other drug classes

# Aims

- 1) Anatomy and function
- 2) Approach to dysphagia
- 3) Structural and motor disorders
- 4) GERD
- 5) Functional esophageal disorders