



# GHAPP

Gastroenterology & Hepatology  
Advanced Practice Providers

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# Staying Healthy in GI Disease: A Look at Lifestyle Modifications to Improve GERD and Constipation

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# Disclosures

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**Mary Clarke, CNP**

No financial relationships to disclose.

# GERD

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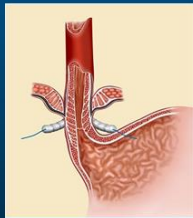
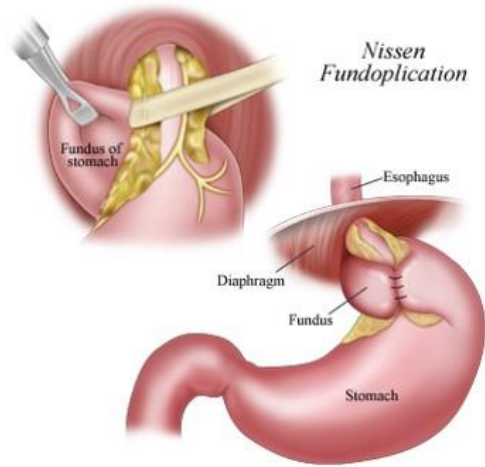
- Weak lower esophageal sphincter
- Stomach acid backflows into esophagus
  - Causes irritation of lining
  - Need for medication at least twice a week- indication to seek treatment
  - Prevalence: 10 % general population
  - pH testing: less than 4 normal, 4-6 borderline, 6 or greater pathologic GERD

# GERD: Treatment Options

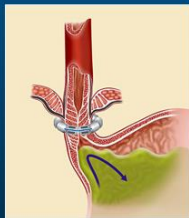
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- Medications
  - PPI
  - H2 Blockers
  - Antacids
- Surgery
  - Laparoscopic Fundoplication – Nissen vs Toupet
  - Laparoscopic LINX magnetic Device
  - Endoscopic – TIF

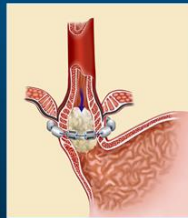
# Surgical Treatments: Fundoplication vs LINX



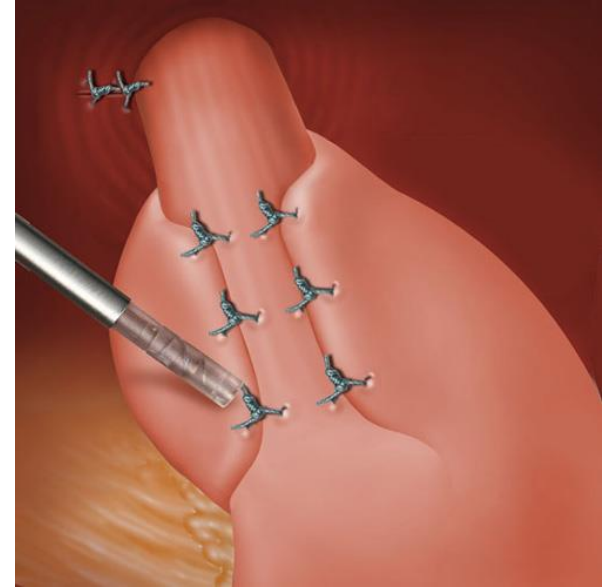
1: LINX is implanted around the weak native lower esophageal sphincter (LES).



2. The force of attraction of the magnetic beads helps keep the weak valve closed, preventing reflux.



3. The force of a swallow, belch or vomiting opens the beads.



# TIF: Transoral Incisionless Fundoplication

- Endoscopic Approach





# GERD

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- What are other available treatment options to control GERD?
  - Alginate therapy
  - Lifestyle modifications
  - Cognitive behavioral therapy

# Alginate Therapy

- Randomized Clinical Trial: alginate-antacid in patients with gastro-oesophageal reflux disease
- 1000 mg alginate; take up to 4 times a day
- Improvement of heartburn, regurgitation, dyspepsia (47.8 vs 33.2)
- Caution transplant, immunosuppressed patients; magnesium

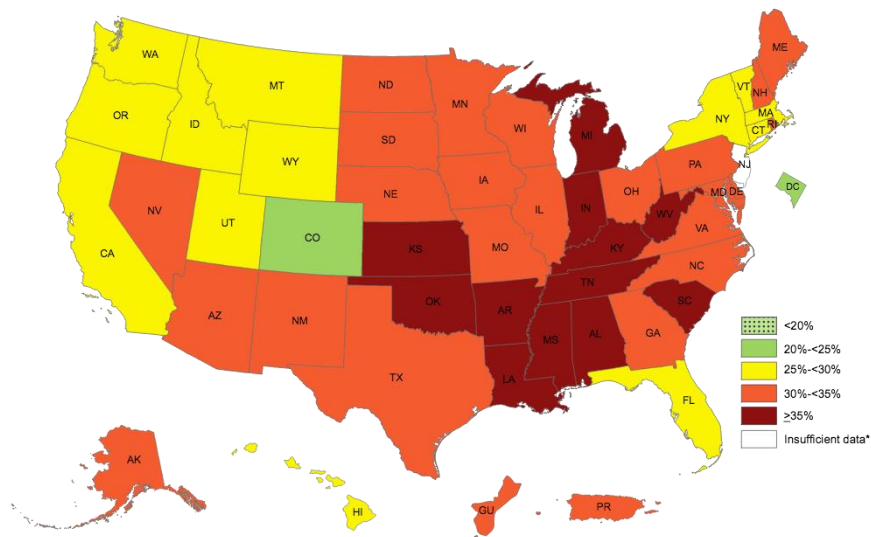


# Lifestyle Modifications Recommendations

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- Weight loss
- Elevate HOB
- Avoid supine position 3-4 hour after eating
- Identify and avoid trigger foods
- Avoid smoking
- American College of Gastroenterology-weight loss, avoid late eating
- American Gastroenterological Association – HOB and weight loss, but tailor other interventions; i.e., trigger foods
- Lifestyle Intervention in Gastroesophageal Reflux Disease: Perspectives in Clinical Gastroenterology and Hepatology (2016): cross sectional examination of research based interventions

# Effects of Weight on GERD: 2019



# GERD: Weight

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- 2/3 US population overweight
- 1/3 is obese:  $BMI > 30$  (calculation weight/height)
- Causes:
- Increased caloric consumption
- Sugar
- Ready access to high caloric, low nutrition foods
- Decreased mobility

# Effects of Weight on GERD

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- Waist Circumference
- Studies in obese subjects, Mathus-Vliegen et al
- 11.2 kg weight loss in 13 weeks reduced pH score from 5.6 (borderline pathologic GERD) to 3.7 (normal)
- 12.5 kg in 13 weeks; 8.0 to 5.5%

# Effects of Sugar on Weight

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- Sugar induces endocrine deregulation marked by hyperinsulinemia, leading to energy partitioning with increased storage of energy in adipose tissue resulting in adaptive increases in food intake and decreases in energy expenditure .leading to weight gain.
- At consumption, activate sweet receptors on tongue
  - Sends signals to cerebral cortex, responsible for processing taste; activates reward system, dopamine- similar to drugs, alcohol, leading to dopamine over drive, increase cravings
  - Health meal- dopamine response but same meal, less dopamine response; allow to detect variation in taste (spoiled food vs new food- improved balance of vitamins and nutrients)
- Sugar addiction
  - Neurobiological level, neural substrates of sugar and sweet reward more robust than cocaine, suggesting past selective evolutionary pressures for seeking and taking foods high in sugar and calories

# Weight Management

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- Patient Education
  - Limit processed foods such as chips, bread, cookies, candy, baked goods to no more than 1 serving a week, and when possible, avoid sugars.
  - Consume 3-4 cups of green vegetables per day, including but not limited to:
- Lettuce, spinach, cucumbers, broccoli, zucchini, kale, brussel sprouts and peppers. Use caution if you are prone to bloating as some of these foods may increase bloating.
  - Use Myfitnesspal or another app to record daily nutritional intake and exercise
  - Exercise goal: at least 30 minutes of cardio daily (if medically cleared) x 5 days a week. May include walking, jogging, cycling, swimming and aerobics classes
  - Set goal for weight loss: I.e., 5 lbs per month



# Smoking and GERD

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- Smoking
  - Prolongs acid clearance and decreases baseline LES
  - Resolves within minutes of completion of cigarette
  - Abrupt increases in intra-abdominal pressure (cough, deep inspiration) associated with reflux smokers
  - Cessation: Decreased severe reflux symptoms in normal weight subjects
  - Higher prevalence in 20 smoking history vs 1 yr
  - Cessation reduces symptoms and number of reflux events but does not alone result in normal pH scores

# Eating Habits Associated With GERD Pathogenesis

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- Fast eating
- Eating beyond fullness
- Eating very hot foods
- Alcohol consumption-increases acid secretion through gastrin stimulation reducing LES pressure

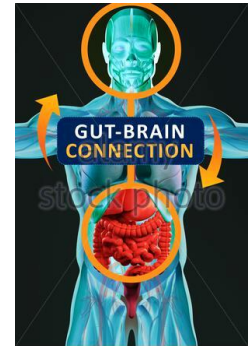
# HOB Elevation and Late Eating

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- Late evening Meal: lower intragastric pH in later meal
  - Data incomplete
  - Correlation with size of meal?
- HOB
  - Fewer reflux episodes; shorter exposure time
  - Faster clearing
  - Fewer nocturnal symptoms

# GERD Patients With Reflux Hypersensitivity

- Rome IV
  - Typical heartburn symptoms despite normal upper endoscopy and esophageal biopsies, normal esophageal pH test
  - Evidence of a close correlation between patients' heartburn and reflux events.
  - Reflux hypersensitivity with functional heartburn accounts for more than 90% of the heartburn patients who failed treatment with proton pump inhibitor twice daily.
  - Associated with some type of psychological comorbidity.
  - Primarily treated with esophageal neuromodulators, such as tricyclic anti-depressants and selective serotonin reuptake inhibitors
  - Cognitive behavioral therapy/hypnotherapy
  - Relaxation techniques



# Constipation: Rome IV Criteria

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- Prevalence: either self-reported or using Rome criteria, can affect from 2% to 27% of the population
- At least two of the following symptoms over the preceding three months:
  - Fewer than three spontaneous bowel movements per week
  - Straining for more than 25% of defecation attempts
  - Lumpy or hard stools for at least 25% of defecation attempts
  - Sensation of anorectal obstruction or blockage for at least 25% of defecation attempts
  - Sensation of incomplete defecation for at least 25% of defecation attempts
  - Manual maneuvering required to defecate for at least 25% of defecation attempts
- Patient should not meet the suggested criteria for irritable bowel syndrome (IBS) and that loose stools are rarely present without the use of laxatives.

# Medications to Treat Constipation

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- Fiber
- Laxatives
- Suppositories
- Magnesium
- Enemas
- Secretagogues
- Prokinetics

# Foods That Contribute to Constipation

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## Binding foods/slow digestion

- Red meat – high in fat, protein difficult to break down, rich in iron which can be constipating
  - Dairy, including cheese
  - High fat foods (i.e., fried foods, chips, chocolate)delay digestion
  - Processed foods- cookies, pastries, donuts, cakes, crackers; these are low in fiber, low in fluid and high in fat
  - Unripe bananas – high in starch
  - White rice or bread – husk and bran have been removed so this is low in fiber
  - Persimmons – high in tannins
  - Alcohol – causes dehydration

# Fiber: Goal 20-35 Grams/Day

FOOD	SERVING	FIBER GRAMS
Artichoke	1 medium	6.2-10.3
Beans, baked, plain	1/2 cup	5.2
Beans	1/2 cup	6.6 (lima lowest)-9.5 (navy highest)
Blackberries	1/2 cup	3.8
Bulgur wheat	1/2 cup	4.1
Bran cereal, high fiber	1/2 cup	10-14
Chickpeas, canned	1/2 cup	5.3
Lentils	1/2 cup	7.8
Mixed, frozen vegetables	1/2 cup	4
Pear	each	5.1
Peas, green/frozen	1/2 cup	4.4
Peas, split	1/2 cup	8.2
Potato, baked with skin	1 medium	4.4
Potato, sweet, baked with skin	1 medium	4.8
Prunes	10	6.0
Quinoa	1/2 cup	5
Raspberries	1/2 cup	4
Soybeans	1/2 cup	5.1
Spinach, raw versus cooked	1/2 cup	0.8 versus 2



# Fiber Supplements

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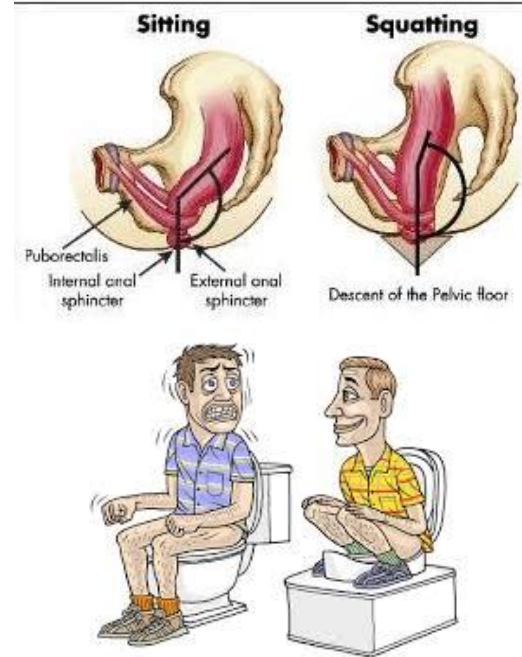
- Work by absorbing water and increase bulk
- Increase in fecal matter stimulates muscles of bowel
- Soften stools
- Psyllium based (i.e Metamucil)
  - Husks of plantago ovata plant- “blond psyllium”
  - When added to water, absorb/trap water, gelatin forms
  - Forms a gel when mixed with water/liquids
  - Digested/fermented by bacteria in bowel- can cause gas/bloating/cramping/flatulence
- Methylcellulose based (i.e., Citrucel)
  - Natural plant cellulose, chemically treated
  - Chains join chains, form gel matrix, absorbs/holds water
  - Water soluble
  - 1996 study Annals of Internal Medicine- psyllium caused no more gas and abdominal stress than methylcellulose

# Soluble Versus Insoluble Fiber

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- As soluble fiber dissolves, creating a gel.
- Insoluble fiber attracts water into your stool, making it softer and easier to pass with less strain on your bowel. Insoluble fiber can help promote bowel health and regularity. It also supports insulin sensitivity, and, like soluble fiber, may help reduce your risk for diabetes.
- Add fiber slowly to reduce side effects.

# Correct Toilet Position



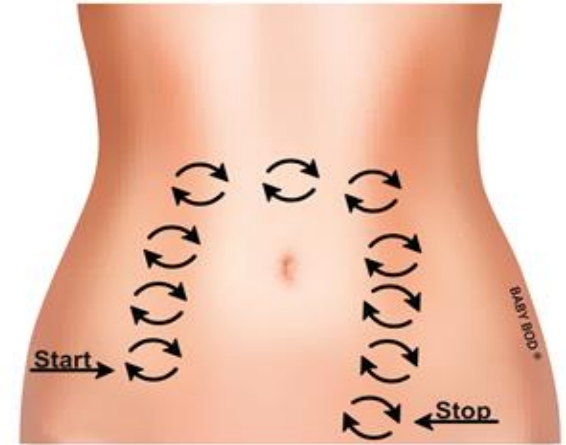
# Bathroom Tools

- Squatty Potty
- Bidet/washlet – Stimulates anus, colon
  - Spinal cord injury patients
  - BM successfully induced in 15 -20 patients, regardless of
  - Injury level or ability to voluntarily squeeze, vs 30 minutes w/straining



# Abdominal Massage

- Stimulate peristalsis
- Decrease colonic transit time
- Increase frequency of bowel movements
- Decrease associated pain
- Circular, clockwise movements vs “I Love U”



# Walking

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- “Walking is man’s best friend.” Hippocrates
- 150-250 minutes per week
- Helpful for both GERD patients for weight loss and constipation patients
- Glycemic control walking; normalized blood sugars vs elevated glucose postprandial- walking versus sedentary patients
- Colonic motor activity – more active after waking and after a meal. Optimal time for bowel movement is usually within the first two hours after waking and after breakfast
- Taking a daily walk for at least 15 minutes can help promote motility in your bowels

# Patient Education:

## Lifestyle Modifications to Improve Bowel Function

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- 20 to 35 g fiber/day.
- Fiber increases bloating and distention. This can be controlled by starting with small amounts and slowly increasing fiber intake according to tolerance and efficacy.
- Establish a regular pattern of bowel movement every day.
- Consume at least 64-100 oz per day. This can improve efficacy of bowel medication.
- Toileting schedule: attempting a bowel movement at least twice a day, usually 30 minutes after meals, and to strain for no more than five minutes.
- Consume warm nonalcoholic, non caffeinated liquids in the evening, such as herbal tea or warm water with lemon, to relax you GI tract and make it easier to have a bowel movement.

# Conclusion

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- GERD
  - Maintaining health through diet, healthy weight, smoking cessation
  - Alternate forms of therapy include CBT and alginate therapy
- Constipation
  - Maintain healthy bowel function through exercise, hydration, diet
  - Alternate forms of treatment include abdominal massage, correct positioning, toileting program



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