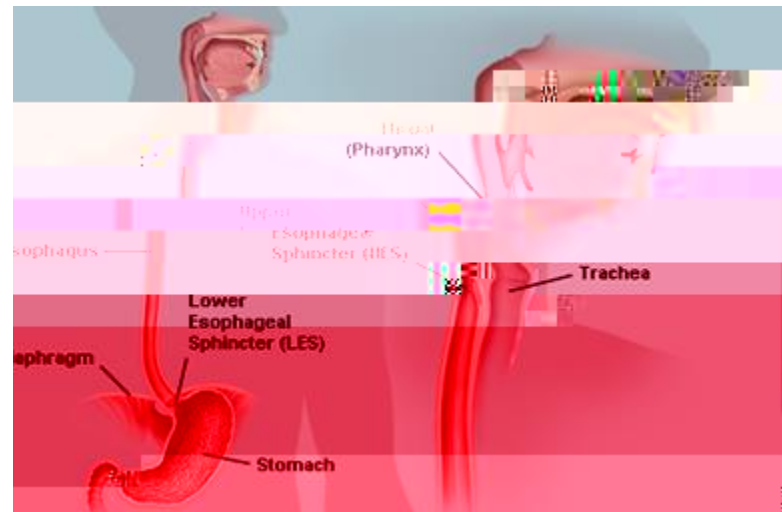




• The Esophagus

- Tubular structure
 - Major purpose: transport swallowed food from throat to stomach
- Extends from the upper esophageal sphincter (UES) to the lower esophageal sphincter (LES)

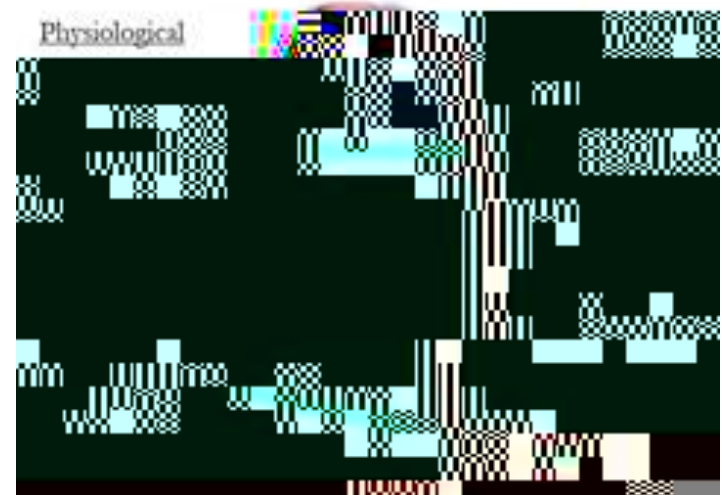




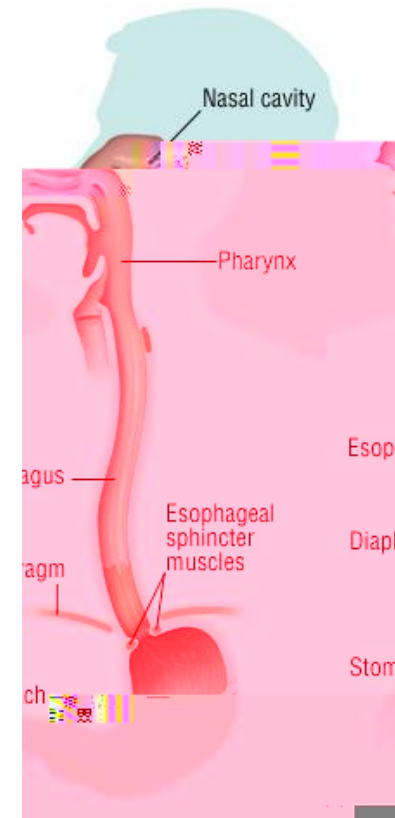
- Many specialists and practitioners may be involved along with pulmonologists and primary care

- Including but not limited to:
 - Oral specialists/dentistry
 - Otolaryngologists (ENT)
 - Swallow center specialists
 - Gastroenterologists
 - Esophageal/motility specialists

Structure Of The Esophagus



- An oropharyngeal disorder
 - Could be due to a problem in throat or larynx, may need ENT practitioner involved
 - Could be due to a neuromuscular problem in this area, may need swallow therapist involved and particular swallow xrays
- An esophageal motility (neuromuscular) disorder: problem with pushing food and/or liquid through esophagus into stomach
 - Examples
 - Esophageal spasm, achalasia
 - Can result in contents ascending up into airway
- These problems may be mild and patient may not know there is a swallowing “problem”



- **Gastroesophageal Reflux Disease (GERD)**

- Definition: a condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications



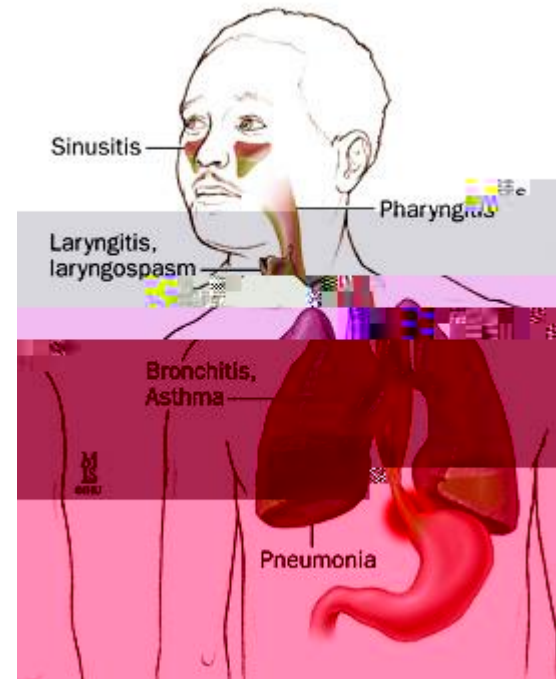
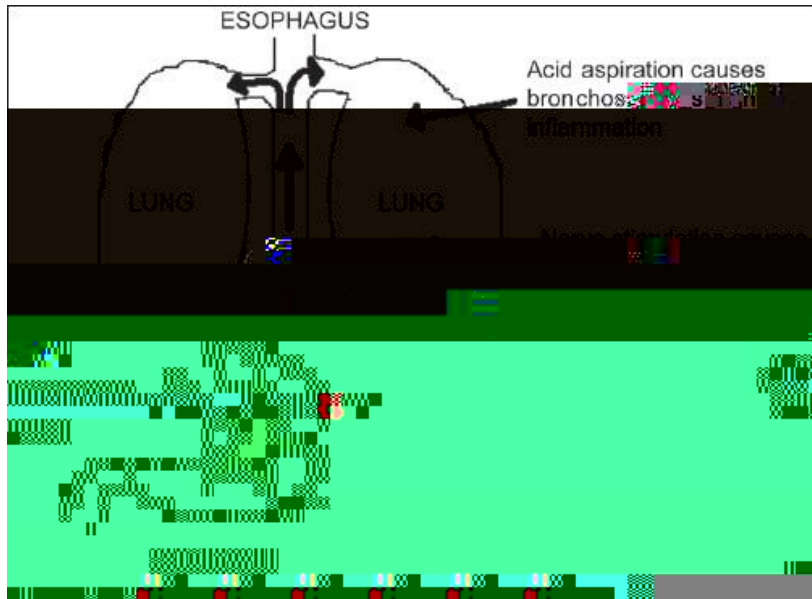
Gastroesophageal reflux



Symptoms



Damage



- Prevalence of GERD in bronchiectasis ranges from 26-75% in a review of several studies
 - This does not mean the GERD *causes* bronchiectasis each time
- There is a relative lack of clinical studies looking at treatment options for GERD in patients with bronchiectasis in terms of the pulmonary outcomes
 - One 2014 study of only 7 patients getting surgery for GERD showed that pulmonary function tended to improve
 - One 2016 study of over 250 patients treated with or without a proton pump inhibitor (PPI) for GERD did not show a clear improvement overall of lung function after PPI therapy 6 months later
 - Only 27 patients got PPIs, and a portion of them did do significantly better

- Diet and lifestyle good habits
- Often a PPI is chosen
- Potential side effects of PPIs
 - Iron deficiency, vitamin B12 deficiency, *C difficile*-associated diarrhea, bacterial infections and SIBO are mechanistically plausible but risk estimates are low and they are treatable conditions
 - Evidence for the development of chronic kidney disease, myocardial infarction, bone fracture, and dementia is low quality and currently not compelling to alter management
- However
 -



- Does GERD predispose a patient to develop bronchiectasis?
- Can GERD make bronchiectasis worse?
- If GERD is involved, is the problem from acid, bile, or any type of reflux?
- How should we treat GERD in patients with bronchiectasis?
- Could an esophageal motility or swallowing problem complicate the picture?
- ***The answers to these questions remain very individualized***





- pH study #1:
wireless pH capsule
 - Small capsule placed on endoscopy
 - Transmits acid data to recorder on outside of body for 48-96 hours
 - Capsule falls off on own and does not need another procedure to retrieve
 - Recorder returned by patient when recording has stopped
 - Can determine in *great detail* the association between diet, lifestyle and the quantity of acid reflux over several days of a patient's routine
 - Can determine if the symptoms are likely due to acid reflux



- pH study #2:
pH-impedance testing
 - Catheter through nose and into stomach, attached to a recorder worn by patient
 - Records acid, bile and all liquid reflux for 20-24 hours
 - Recorder returned the next day by patient and data is then downloaded
 - Can detect how high up the reflux goes in the esophagus and also correlate that reflux to a patient's symptoms



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