

🌟 Esophageal Disorders – Full Breakdown

🔵 1. Anatomy Related Terms

Term	Meaning
Upper sphincter (anatomical sphincter)	Muscle between throat and esophagus (UES)
Lower sphincter (functional sphincter)	Muscle between esophagus and stomach (LES)
Gastric Cardia	Area of stomach near LES
Esophageal Body	Muscular part of esophagus
Diaphragm	Muscle separating chest and abdomen

🔵 3. Functional Symptoms Caused by Esophageal Disorders

Symptom
Dysphagia
Odynophagia
Non-cardiac chest pain
Heartburn
Regurgitation

✅ Important Note:

- Hard to differentiate sometimes between non cardiac and cardiac chest pain because **both upper and lower sphincters are innervated by the vagus nerve.**

🔵 4. Diagnostic Tests

Test	Purpose
Barium Swallow	
Endoscopy	
Esophageal manometry	
24h pH monitoring	Cath 5 cm above the GEJ , if exposure more than 5% in the 24h and pH less than 4 -> pathological
Impedance	Measures movement of bolus in esophagus and consistency

- ✅ Catheters are passed **through the nose**, placed **5 cm above GEJ**, and study **pH and bolus movement**.

🔵 5. Z-Line / Squamocolumnar Junction

- **Separates** gastric mucosa from esophageal mucosa.
- **Proximal side** has **stratified squamous epithelium**.

🌟 Diseases and Conditions

🌟 Gastroesophageal Reflux Disease (GERD)

Feature	Explanation
Flow Back	Gastric contents flow into esophagus abnormally.
Physiologic Reflux	Happens post-meal, short-lived, asymptomatic, no nighttime symptoms.
Failure of Defense	GEJ incompetence: hypotensive LES (due to fat, chocolate, caffeine, alcohol, smoking, medications)

	such as : anticholinergics, CCB , TAC, opioids , diazepam).
Hiatal Hernia	Weakening of diaphragm → more reflux.
Impaired Clearance	Poor esophageal motility or less saliva.
Impaired Defense	Epithelium easily injured.
Hypersensitivity	Esophagus sensitive even to mild acid.

● Cardinal Symptoms

- Regurgitation
- Heartburn

THESE ARE THE MAIN TWO

- Chest pain
- Dysphagia
- Nausea
- Hoarseness, cough, wheezes (due to tracheal spasm if acid reaches trachea)

● Complications

- Esophageal stricture
- Barrett's esophagus
- Esophageal adenocarcinoma
- Chronic laryngitis
- Worsening of asthma

● Diagnosis of GERD

Test	Purpose
Barium Swallow	See structural problems
Endoscopy	Direct view
24h pH Monitoring MAINLY	Confirm acid reflux
Laryngoscopy	Vocal cord exam
High-resolution Manometry & Impedance	Pressure/movement study

● Treatment of GERD

Treatment	Purpose
Lifestyle Changes	Weight loss (most importantly)
H2 Blockers	Decrease acid, (could produce tolerance)
PPIs	Strong acid suppression (chronic use most of the cases)
Fundoplication Surgery	

🌟 Barrett's Esophagus

Feature	Explanation
Cause	Chronic GERD
Change	Squamous epithelium replaced by metaplastic columnar epithelium
Risk	>30x higher risk of adenocarcinoma
Annual Risk	0.1–3%
Diagnosis	Endoscopy + Biopsy
Endoscopy Finding	Columnar metaplasia seen at GE junction

Treatment	Treat GERD by ppi , Surveillance, Endoscopic therapy (ablation and resection) , Surgery (esophagectomy)
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✅ Biopsy is needed to confirm diagnosis.

🌟 Eosinophilic Esophagitis (EoE)

Feature	Explanation
Cause	Chronic allergic/immune esophageal inflammation
Diagnosis	>15 eosinophils/HPF on biopsy
Symptoms	Dysphagia, food impaction (mc 2 symptoms) , refractory heartburn, feeding difficulty, abdominal pain
Associated	Strong link to allergic diseases
Treatment	PPI, Topical steroids, Elimination diet (since we think its related to allergy of food) , Endoscopic dilation (easily split or tear)

✅ Eliminate **6 major food groups**: milk, wheat, eggs, soy, peanuts/tree nuts, seafood.

🌟 Corrosive Esophagitis (preventable)

Feature	Explanation
Cause	Ingestion of strong acids or alkalis
Consequences	Ulceration → Fibrosis → Stricture (could last for many years or forever)
Risk	Squamous Cell Carcinoma after years
Treatment	Prevention, strict monitoring

🌟 Zenker's Diverticulum

Feature	Explanation
Location	Posterior hypopharyngeal wall
Type	False diverticulum
Symptoms	Dysphagia, Halitosis, Food regurgitation
Treatment	Cricopharyngeal myotomy by endoscope + Diverticulectomy by surgical intervention

✅ Done **endoscopically** by cutting the muscle barrier.

🌟 Esophageal Webs

Feature	Explanation
Cause	Congenital/inflammatory constriction in hypo pharynx
Location	Proximal esophagus
Symptoms	Dysphagia
Associated	IDA -> Plummer vinson syndrome
Treatment	Dilatation

🌟 Schatzki Rings

Feature	Explanation
Location	Squamocolumnar junction
Symptoms	Dysphagia, Food bolus obstruction , especially old age

Treatment	Dilatation
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✔ Commonly worsens with aging.

☀ Hiatal Hernia

Type	Explanation
Sliding Hernia	GE junction + stomach fundus slide into chest
Para-esophageal Hernia	Stomach herniates beside GE junction

✔ Para-esophageal hernia can **incarcerate**, **ulcerate**, or **cause dysphagia**. Vs sliding : GERD

☀ Mallory-Weiss Tear

Feature	Explanation
Cause	Vomiting and retching
Result	Tear at GE junction
Presentation	Upper GI bleeding
Course	Usually resolves spontaneously

✔ Diagnosed and discharged usually without intervention.

☀ Achalasia

Feature	Explanation
Cause	Degeneration of inhibitory ganglion cells in myenteric plexus
Problem	LES fails to relax + Aperistalsis
Symptoms	Dysphagia, Chest pain, Regurgitation, No belching
Diagnosis	CXR (widened mediastinum, absent gastric bubble), Barium swallow (bird-beak narrowing, absent peristalsis, dilated esophagus), Manometry (failure of LES relaxation during swallowing, normal or elevated resting LES , aperistalsis in the body of esophagus, simultaneous esophageal body contractions with amplitude > 40 mmhg). Endoscopy (dilated lumen containing food and fluids, narrow sphincter with resistance to the passage of endoscope)
Types	Type 1 (low pressure), Type 2 (high pressure), Type 3 (premature contraction)
Treatment	Endoscopic balloon dilation (circular fibers are teared up) , POEM(cutting off muscle fibers by endoscope), Heller's myotomy (surgically cutting it off) , pharmacological reduction of LES pressure (Botulinum toxin, Nitrates, Ca channel blockers)

✔ Manometry = gold standard.

☀ Distal Esophageal Spasm (DES)

Feature	Explanation
Cause	Impaired inhibitory innervation or exposure of acids
Symptoms	Dysphagia, Chest pain, Heartburn
Diagnosis	Barium swallow: "corkscrew" or "rosary bead" appearance

Manometry	Premature, simultaneous contractions in distal esophagus >20% of swallows on manometry
Treatment	PPI, Peppermint oil, Ca channel blockers

🌟 **Hypercontractile (Jackhammer) Esophagus**

Feature	Explanation
Cause	Excessive smooth muscle contraction
Symptoms	Dysphagia, Chest pain, Heartburn
Diagnosis	Manometry: very strong but coordinated contractions
Barium	Normal sequential peristalsis
Treatment	PPI, Peppermint oil, Ca channel blockers