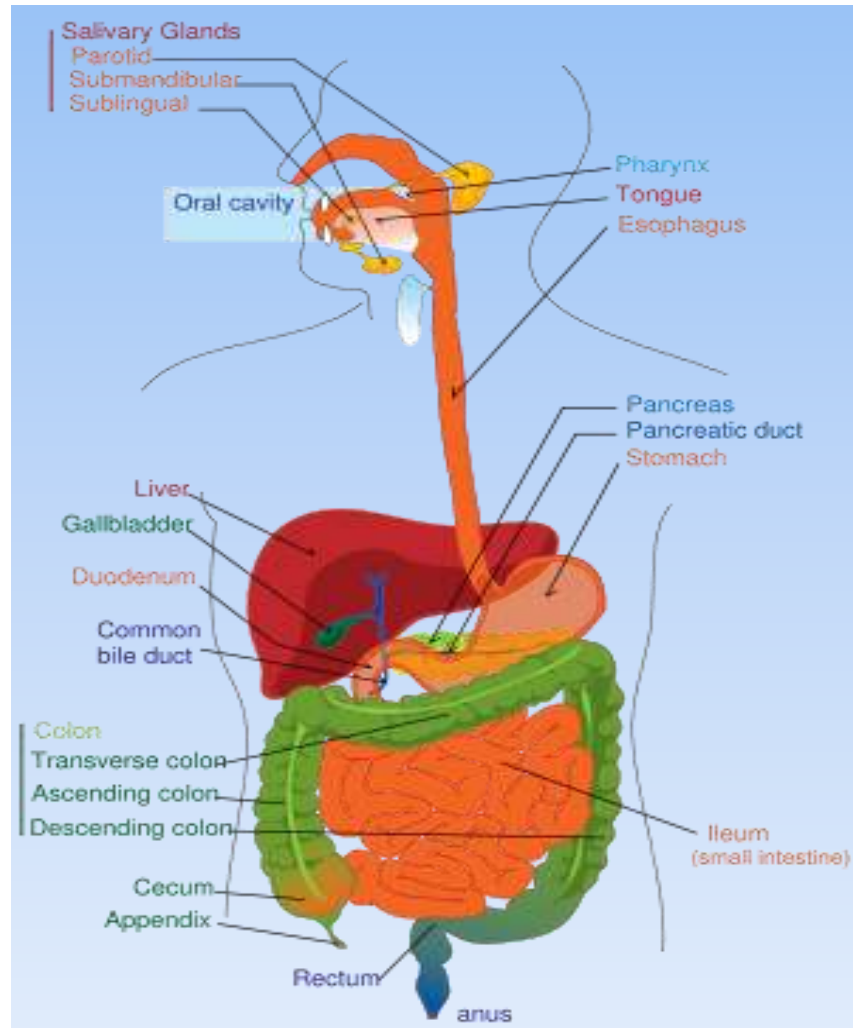


Gastrointestinal Tract disorders



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Functions of the Digestive system

1. **Break down food** particles into molecular form for digestion.
2. **Absorption**
3. **elimination**

Chewing and Swallowing : causes reflex **salivation** from three pairs of gland ; the **parotid, submaxillary, sublingual gland**.

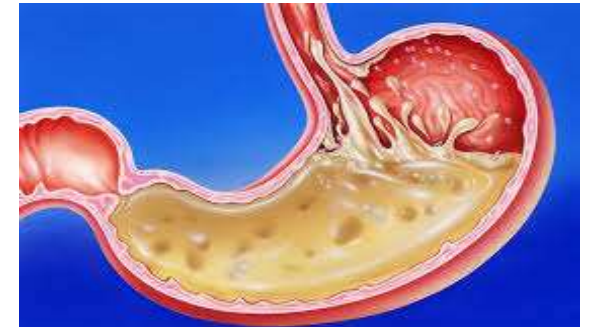
Gastric function :

1. stomach **store and mix the food with secretion**.
2. Its **secretes** a high acidic fluid (**HCL**) secreted by the glands of the stomach. In order to :

- **break down food**
- **destruction** of the most ingested **bacteria**

➤ stomach produce 2.4L of gastric secretions.

3- Its secretes **Intrinsic factor** which combines with **vitamin B12** (absorbed in ileum)





Small intestine function :

Digestion continue in small intestine (Duodenum).

Pancreatic Secretion : have an **alkaline** PH because a high concentration of bicarbonate . its **secrete ; Trypsin , Amylase, Lipase**

Bile (secreted by liver and stored in gallbladder) : **emulsifying ingested fats.**

Types of contraction occur regularly in small intestine:

1. **Segmentation** : mixing waves that move the intestinal contents back and forth.
2. intestinal **peristalsis** : propels the element of small intestine toward colon.

Colonic Function : **absorption of water and elimination of waste product**



Assessment of Digestive system

1. **Health history** (focusing on the **symptoms** common to GI dysfunction. including :

- ☐ **Pain** : character. Duration, frequency, location, pattern,
- ☐ **Indigestion**:
- ☐ **Intestinal Gas** : (belching : expulsion of gas from stomach through the mouth).or Flatulence (expulsion of gas from the rectum).
- ☐ **Nausea and vomiting**

Nature of Vomitus

Color/Taste/Consistency

Possible Source

Yellowish or **greenish**

May contain **bile**

Medication—senna

Bright red (arterial)

Hemorrhage, peptic **ulcer**

Dark red (venous)

Hemorrhage, **esophageal**
or **gastric varices**

"**Coffee grounds**"

Digested blood from slowly

bleeding gastric or duodenal ulcer

Undigested food

Gastric tumor

Ulcer, **obstruction**

"**Bitter**" taste

Bile

"**Sour**" or "acid"

Gastric contents

Fecal components

Intestinal **obstruction**

- ☐ **Change in Bowel habits and stool characteristics**



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2. Physical Examination :

3. Diagnostic evaluation : including :

Stool test : analysis. Culture

Breath Test :

- **hydrogen breath**: to evaluate **carbohydrate absorption** and to diagnosis of **bacterial overgrowth in the intestine** and short bowel syndrome.
- **Urea breath** : to detect presence of **helicobacter pylori** .

4. Abdominal Ultrasonography : its non invasive diagnosis technique, to detect size of **organ**

5. DNA testing : to detect who in risk for **cancer**

6. Imaging studies : x-ray, CT scan , MRI

Endoscopic examination

- ☐ **Upper** Gastrointestinal fibroscopy
- ☐ Lower GI scopy as Anoscopy, Protoscopy, and Sigmoidoscopy
- ☐ **Fiberoptic** colonoscopy
- ☐ Laparoscopy

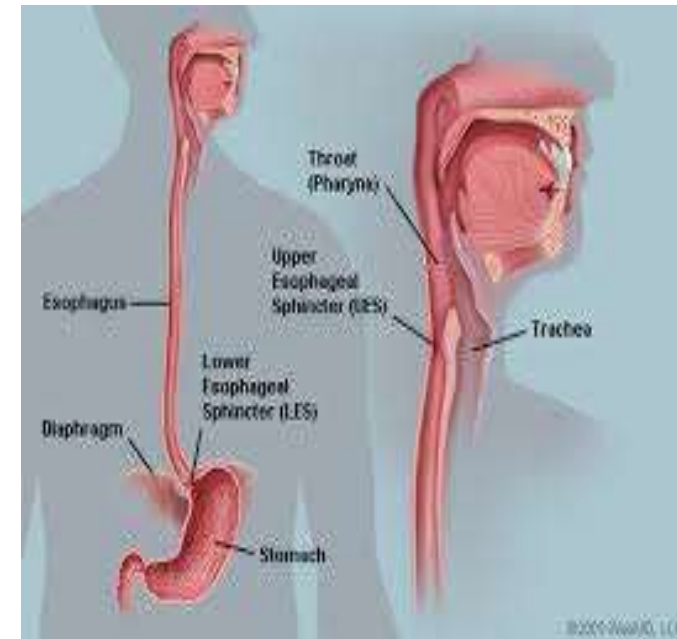
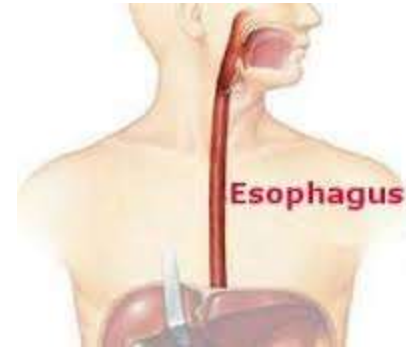


Esophagus

Definition :

Its mucous- lined **muscular** tube that carries food from the mouth to the stomach . its begin at the base of the diaphragm and ends about 4 cm below the diaphragm . it **has 2 sphincters** :

- ❑ upper : hypopharyngeal sphincter
- ❑ lower : Gastroesophageal sphincter



Disorders of Esophagus

1- **Dysphagia** : (difficulty swallowing)

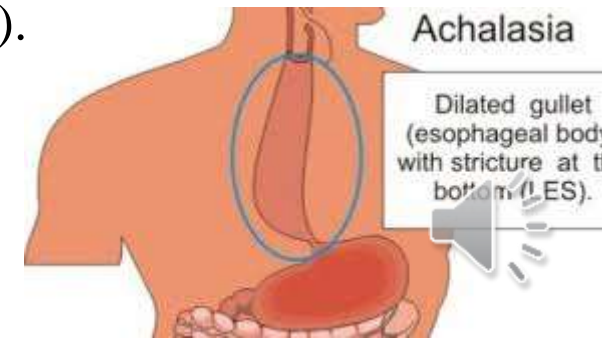
- ❑ Its vary from discomfort to acute pain (Odynophagia)
- ❑ **Causes** : motility disorders (Achalasia, diffuse **spasm**). Gastroesophageal reflux. Hiatal hernia , diverticulitis, perforation, chemical burns, **tumor**.

2- **Achalasia** :

- ❑ It is **absent or ineffective peristalsis of the distal esophagus**, accompanied by failure of the esophageal sphincter to relax.
- ❑ **Clinical manifestation** ; dysphagia, food sticking in lower portion of the esophagus. Food regurgitated, chest pain and heartburn (pyrosis)
- ❑ **Assessment and Diagnosis** ; X-ray (esophageal dilatation) **Barium swallow** , **CT scan, endoscopy** .

Management ;

- ❑ Eat slowly
- ❑ Calcium channel blocker and nitrates (decrease esophageal pressure)
- ❑ Botox injection into esophagus (inhibit esophageal contraction).
- ❑ Surgical : esophageal Dilation



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3. Diffuse Spasm ;

It is a **motor disorder** of the esophagus .

- **causes** unknown (may **Stress**) produce contraction of esophagus . its more common in **female** .

difficulty or pain on swallow . chest pain

Assessment and diagnosis :

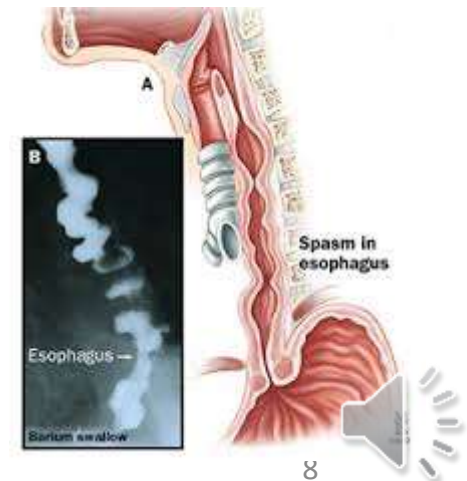
esophageal Monometry

X-ray : after **barium** show separate area of spasm

Managemment : **sedation** and long acting **nitrate** .

calcium channel blocker , **small frequently food**

Surgical : dilation



4. Hiatal Hernia :

Esophagus enters the abdomen through an opening in the diaphragm , and upper part of stomach tends to move up into lower portion of thorax.

Occurs most frequently in women .

Types of Hiatal hernia

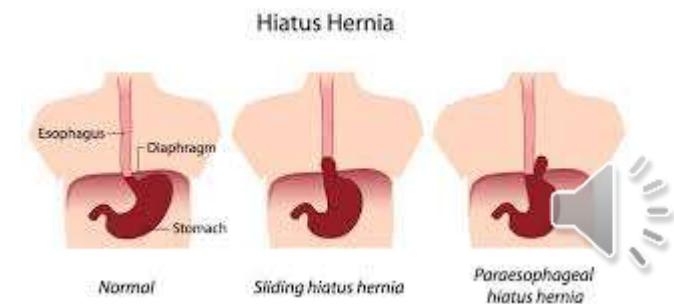
- ❑ **Sliding** : implicated in reflux (feel sense of fullness) or asymptomatic; occurs in upper stomach
- ❑ **Paraesophageal** hernia : occurs in all or part of stomach pushes through the diaphragm beside the esophagus

Complication of hernia : bleeding, obstruction, strangulation .

Assessment and Diagnosis : X-ray , barium , scopic examination

Management :

- ❑ **Small frequent meals**
- ❑ Elevate head 4-8 inches
- ❑ **Surgical** :



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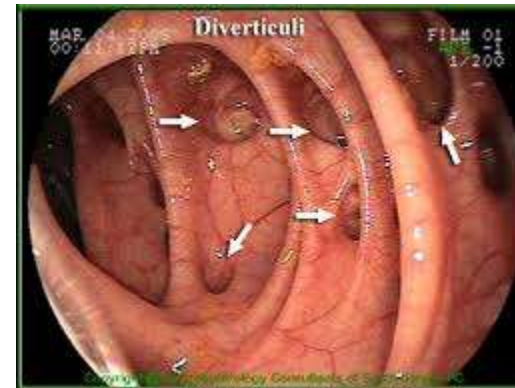
5. **Diverticulum** :

- ❑ Is an outpouching of mucosa and submucosa that protrudes through a weak portion of the musculature .
- ❑ Its may occurs in one of three areas of the esophagus
 1. The midesophageal area
 2. Lower area of the esophagus
 3. Border of the esophagus .

Clinical manifestation : dysphagia, fullness, belching, regurgitation, gurgling,

Assessment and diagnosis : **Barium swallow, scopic examination**

Management ; surgical removal



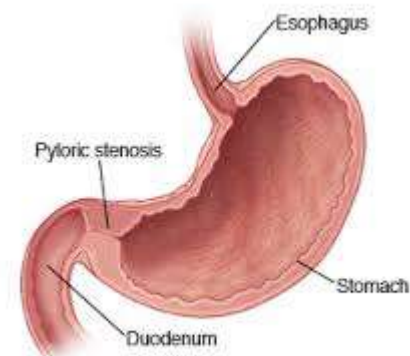
6. **Perforation** :

- ☐ May result from **stab or bullet wound of the chest or neck , chemical burns .**
- ☐ **Manifestation** ; pain followed dysphagia, infection, fever, leukocytosis, hypotension,
- ☐ Assessment ; **diagnostic X-ray , Scopic examination**
- ☐ **Management** ;
 1. broad Spectrum **antibiotics**(infection prevention)
 2. NGT decrease amount of gastric juice
 3. NPO (parenteral feeding)
 4. **Surgery** : close the wound



7- Gastro-esophageal reflux

- **Definition:**
 - Backflow of gastric contents into the esophagus
- **Causes:**
 - incompetent lower esophageal sphincter
 - pyloric stenosis
 - motility disorder
- **Predisposing factors:**
 - Hiatus hernia,
 - Incompetent lower esophageal sphincter
 - Decreased esophageal clearance
 - Decreased gastric emptying



Assessment

Signs and symptoms

- Heartburn (pyrosis)
- Dyspepsia سوء هضم
- Regurgitation ارتجاع
- Epigastric pain
- Dysphagia
- Ptyalism (drooling)
- nausea and vomiting

Diagnostic evaluation

- Endoscopy or barium swallow
- Gastric pH analysis



Nursing interventions

- Avoid stimulus that increases stomach pressure and decreases GES pressure
- Avoid spices, coffee, tobacco and carbonated drinks, and avoid eating 2 hours before bed
- Give low fat, high fiber, high protein diet
- Do not lay down for 2-3 hours after meal.
- Avoid tight clothes or bending over يثني
- Elevate the head of the bed 30 degree
- Medication
 - Antacid
 - H2-blockers (Zantac),
- Advise proper weight reduction



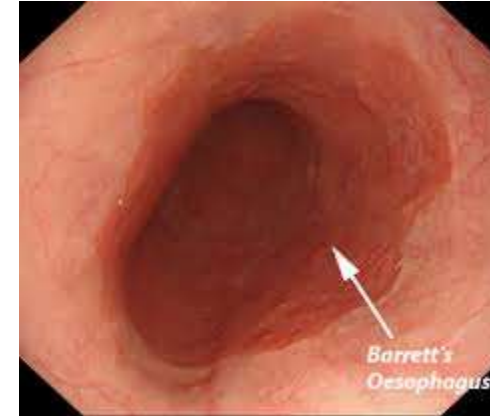
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8- Foreign bodies swallowing

9- chemical Burn

10- Barret's Oesophagus

- ☐ lining of the oesophagus mucosa
- ☐ Associated with GERD
- ☐ clinical Manifestations: symptoms of GERD and symptoms of Peptic ulcers
- ☐ Assessment : esophagogastroduodoscopy (EGD), Biopsy.
- ☐ Management: follow up endoscopy after 6 months, ablation, esophagctomy.



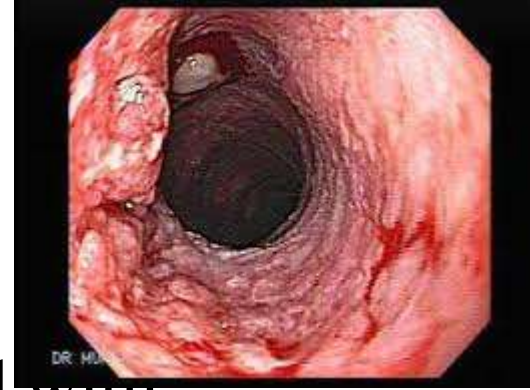
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11- CANCER OF THE ESOPHAGUS

Associated Factors

Cause is **unknown**, but has been associated with.

1. **Barrett's** esophagus
2. **Achalasia**
3. Chronic use of **alcohol** and **tobacco** (squamous cell carcinoma)
4. **Genetic** predisposition—black male population
5. Ingestion of **caustic substances** (such as lye غسيل), which cause esophageal strictures
6. Other head and neck cancers



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Clinical Manifestations

1. **Dysphagia** , a late sign
2. Mild, atypical **chest pain** associated **with eating** precedes dysphagia
3. Pain on swallowing (**odynophagia**)
4. Progressive **weight loss**
5. **Hoarseness** (if laryngeal involvement)
6. **Lymphadenopathy** (supraclavicular or cervical) or hepatomegaly with metastatic involvement
7. Later symptoms—**hiccups, respiratory difficulty, foul breath, regurgitation of food and saliva**

Diagnostic Evaluation

1. **Chest x-ray** may show adenopathy; mediastinal, widening, metastasis; or a tracheoesophageal fistula.
2. **Endoscopy** with cytology and biopsy.
3. **Barium** esophagram may show polypoid, infiltrative, or ulcerative lesion requiring biopsy.
4. **CT** : the extent of the tumor , invasion and metastases



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Management

1. cure or palliative depending on the staging of the tumor and the patient's overall condition in relation to nutritional, cardiovascular, pulmonary, and functional status.
2. Surgery
3. Radiation, chemotherapy, or their combination; combination therapy appears to have better results.
4. Palliative treatment of dysphagia through dilation done by endoscopy or laser therapy.

