AL-Warith University
Nursing Faculty
Adult Nursing 1

# Digestive diseases

## Esophageal disorders

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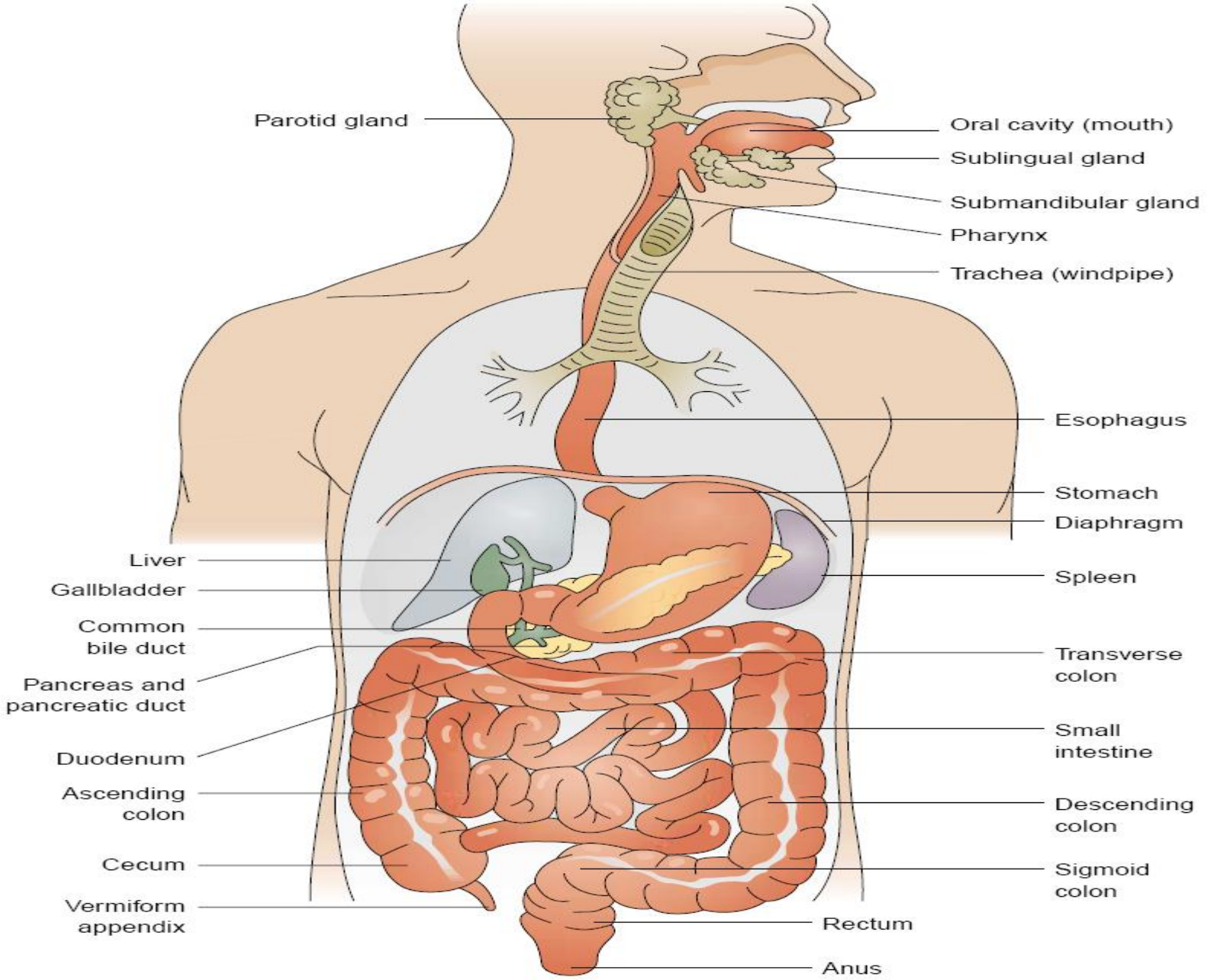
2018

# Learning Objectives

- Describe the various conditions of the esophagus
- Describe clinical manifestations and management of esophageal disorders .
- Use the nursing process as a framework for care of patients with conditions of the esophagus


Parotid gland
Oral cavity (mouth)
Sublingual gland
Submandibular gland
Pharynx
Trachea (windpipe)
Esophagus
Stomach
Diaphragm
Liver
Gallbladder
Spleen
Common bile duct
Transverse colon
Pancreas and pancreatic duct
Small intestine
Duodenum
Ascending colon
Descending colon
Cecum
Sigmoid colon
Vermiform appendix
Rectum
Anus

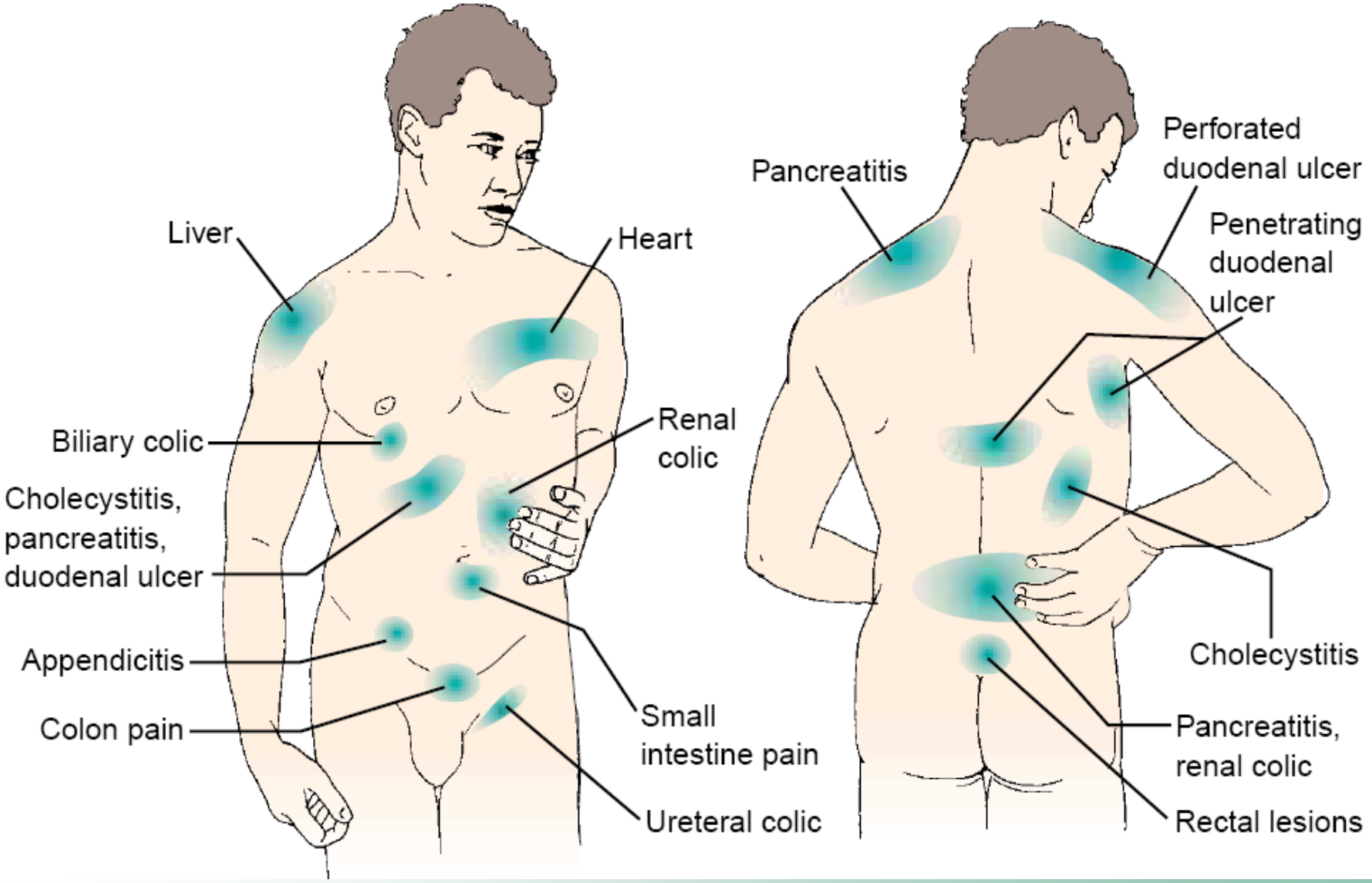
## *Table 34-1* • The Major Digestive Enzymes and Secretions

| ENZYME/SECRETION | ENZYME SOURCE | DIGESTIVE ACTION |
|---|---|---|
| ***Action of Enzymes That Digest Carbohydrates*** | | |
| Ptyalin (salivary amylase) | Salivary glands | Starch→dextrin, maltose, glucose |
| Amylase | Pancreas and intestinal mucosa | Starch→dextrin, maltose, glucose |
| | | Dextrin→maltose, glucose |
| Maltase | Intestinal mucosa | Maltose→glucose |
| Sucrase | Intestinal mucosa | Sucrose→glucose, fructose |
| Lactase | Intestinal mucosa | Lactose→glucose, galactose |
| ***Action of Enzymes/Secretions That Digest Protein*** | | |
| Pepsin | Gastric mucosa | Protein→polypeptides |
| Trypsin | Pancreas | Proteins and polypeptides→polypeptides, dipeptides, amino acids |
| Aminopeptidase | Intestinal mucosa | Polypeptides→dipeptides, amino acids |
| Dipeptidase | Intestinal mucosa | Dipeptides→amino acids |
| Hydrochloric acid | Gastric mucosa | Protein→polypeptides, amino acids |
| ***Action of Enzymes That Digest Fat (Triglyceride)*** | | |
| Pharyngeal lipase | Pharynx mucosa | Triglycerides→fatty acids, diglycerides, monoglycerides |
| Steapsin | Gastric mucosa | Triglycerides→fatty acids, diglycerides, monoglycerides |
| Pancreatic lipase | Pancreas | Triglycerides→fatty acids, diglycerides, monoglycerides |
| Bile | Liver and gallbladder | Fat emulsification |

# Sympathetic and Parasympathetic effects

| SUBSTANCE | EFFECT ON SECRETIONS | EFFECT ON MOTILITY |
|---|---|---|
| *Neuroregulators* | | |
| Acetylcholine | Increased gastric acid | Generally increased; decreased sphincter tone |
| Norepinephrine | Generally inhibitory | Generally decreased; increased sphincter tone |

# Sites of abdominal pain

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# Esophagus Diseases: Dysphagia

- **Dysphagia** (difficulty swallowing). This symptom may vary from an uncomfortable feeling that a bolus of food is caught in the upper esophagus
- Obstruction of food (solid and soft) and even liquids may occur anywhere along the esophagus.
- **Causes**:

✓ Motility disorders (achalasia, diffuse spasm),

✓ Gastroesophageal reflux, hiatal hernias, diverticula,

✓ Perforation, foreign bodies, chemical burns, tumors,

# Achalasia

- **Achalasia** is absent or ineffective peristalsis of the distal esophagus, accompanied by failure of the esophageal sphincter to relax in response to swallowing. Narrowing of the esophagus just above the stomach results in a gradually increasing dilation of the esophagus in the upper chest.
- **Clinical Manifestations**

✓ Difficulty in swallowing both liquids and solids.

✓ The patient has a sensation of food sticking

✓ Chest pain and heartburn (**pyrosis**).

# Management of Achalasia

- The patient should be instructed to eat slowly and to drink fluids with meals. As a temporary measure, calcium channel blockers and nitrates have been used to decrease esophageal pressure and improve swallowing.
- Injection of botulinum toxin (Botox) to quadrants of the esophagus via endoscopy has been helpful because it inhibits the contraction of smooth muscle.
- Achalasia may be treated conservatively by pneumatic dilation to stretch the narrowed area of the esophagus.

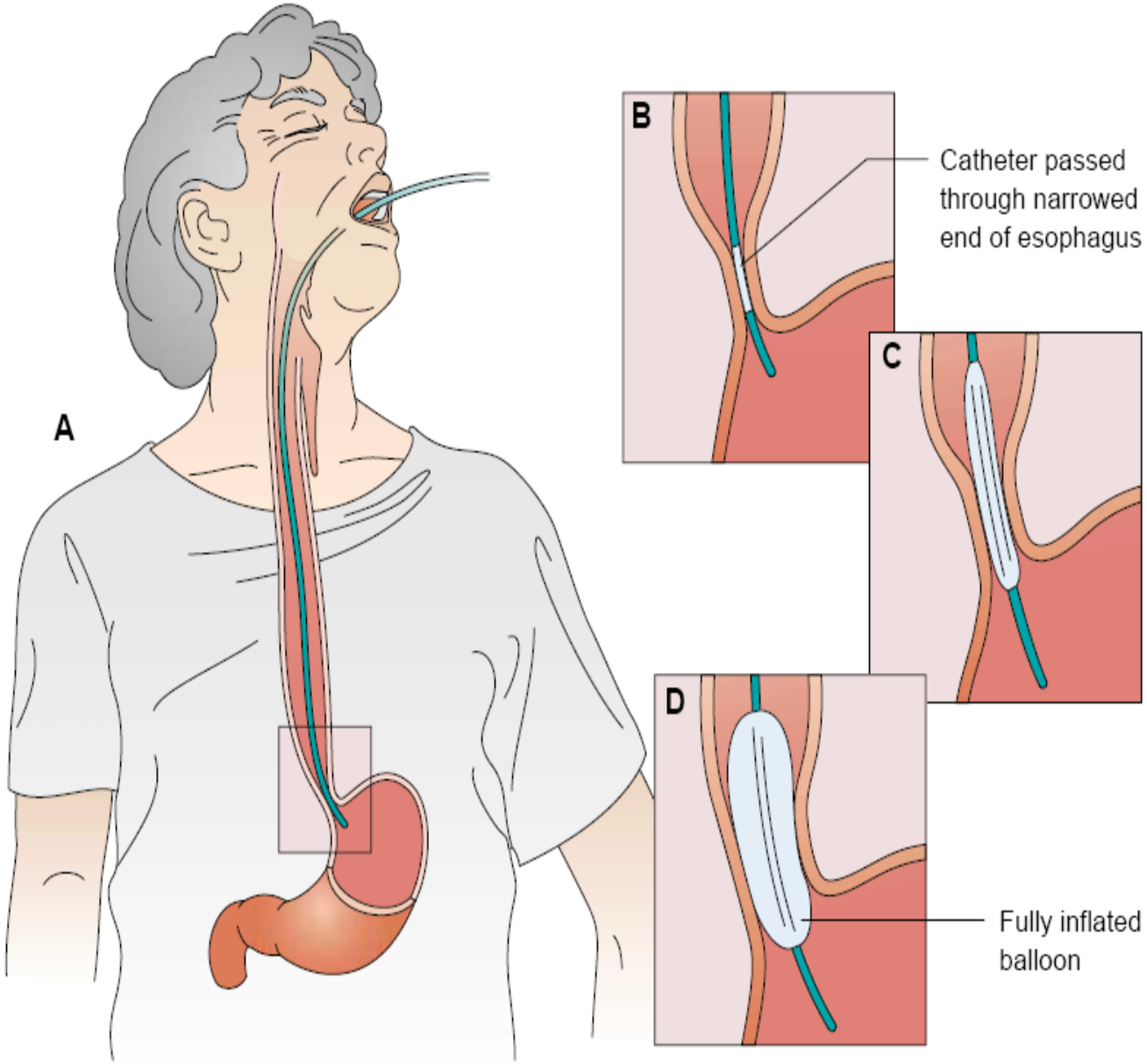
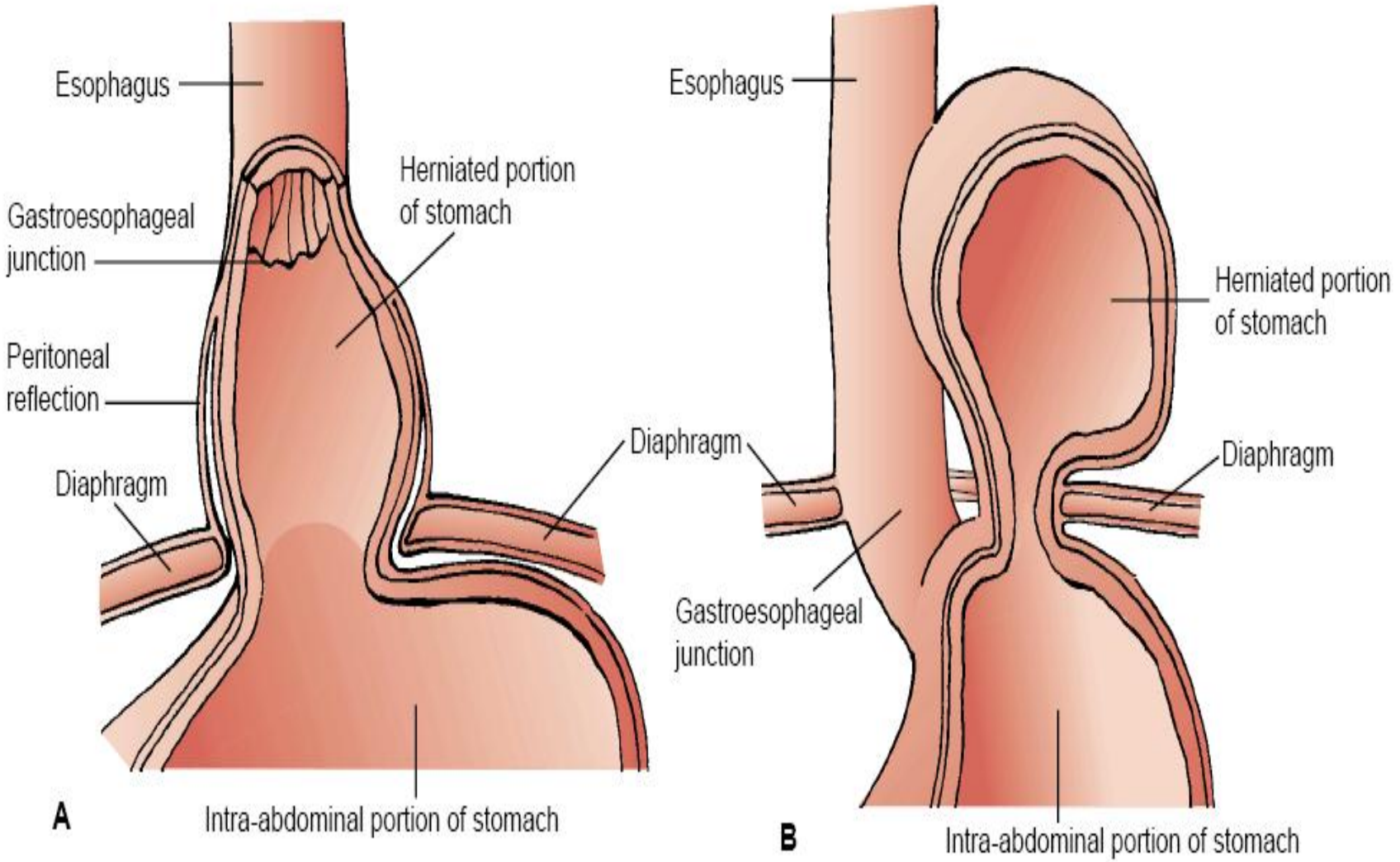



*FIGURE 35-6* Treatment of achalasia by the conservative approach. (**A–C**) The dilator is passed, guided by a previously inserted guidewire. (**D**) When the balloon is in proper position, it is distended by pressure sufficient to dilate the narrowed area of the esophagus.

# Hiatal Hernia

- Normally, the opening in the diaphragm encircles the esophagus tightly, and the stomach lies completely within the abdomen.
- In a condition known as hiatus (or hiatal) **hernia**, the opening in the diaphragm through which the esophagus passes becomes enlarged, and part of the upper stomach tends to move up into the lower portion of the thorax.
- **Manifestations**: heartburn, regurgitation, and dysphagia,
- **Complications**: hemorrhage, obstruction, and strangulation

# Hiatal Hernia



# Management

- Management for an axial hernia includes frequent, small feedings that can pass easily through the esophagus.
- The patient is advised not to recline for 1 hour after eating, to prevent reflux or movement of the hernia, and to elevate the head of the bed on 4- to 8-inch (10- to 20-cm) blocks to prevent the hernia from sliding upward.
- Surgery is indicated in about 15% of patients.

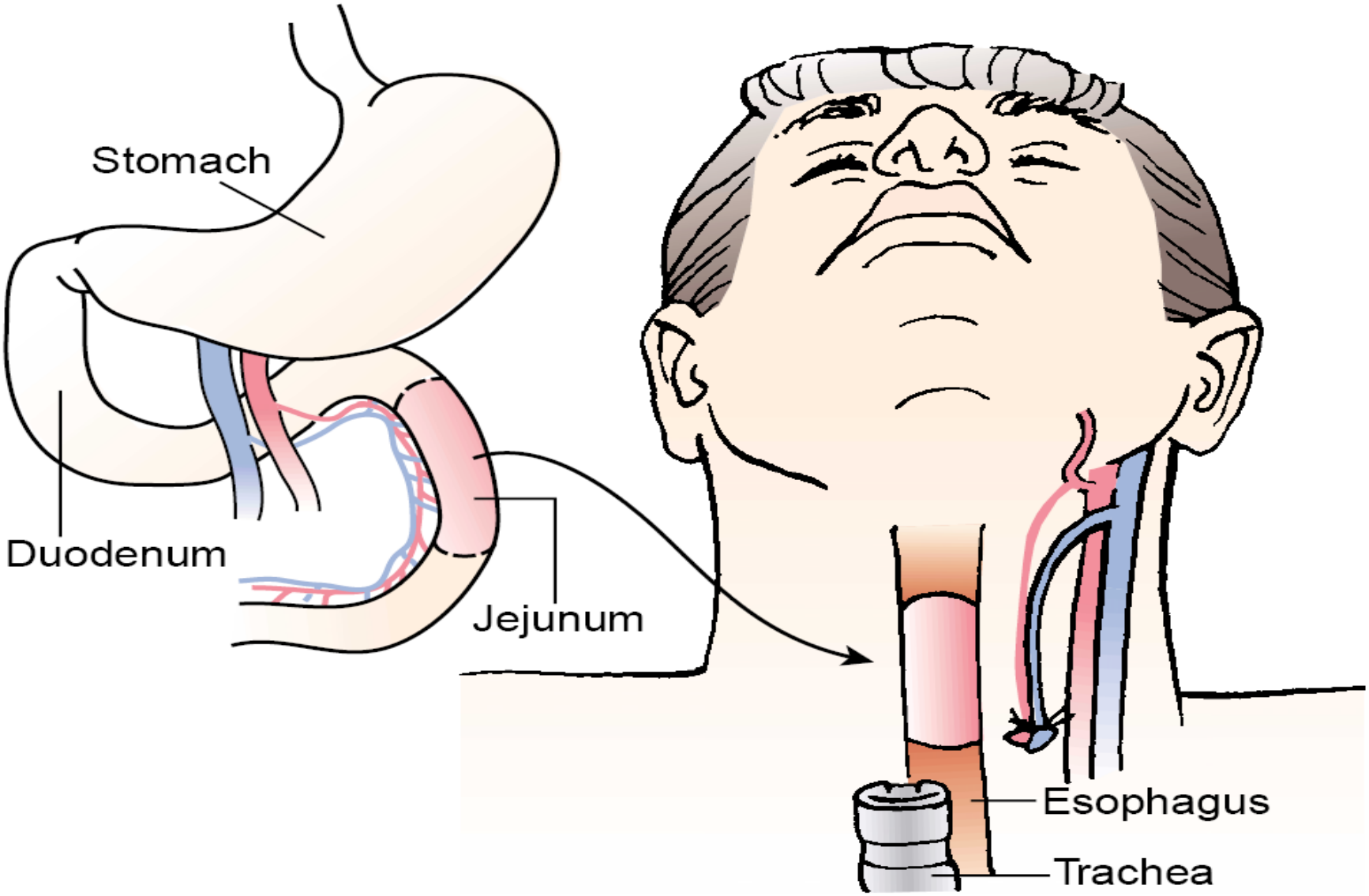


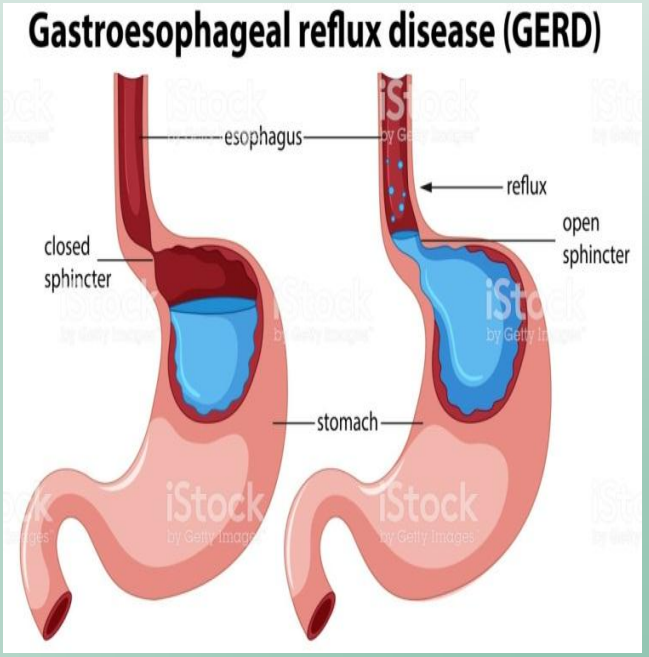

***FIGURE 35-9*** Esophageal reconstruction with free jejunal transfer. A portion of the jejunum is grafted between the esophagus and pharynx to replace the abnormal portion of the esophagus

# Gastroesophageal reflux disease

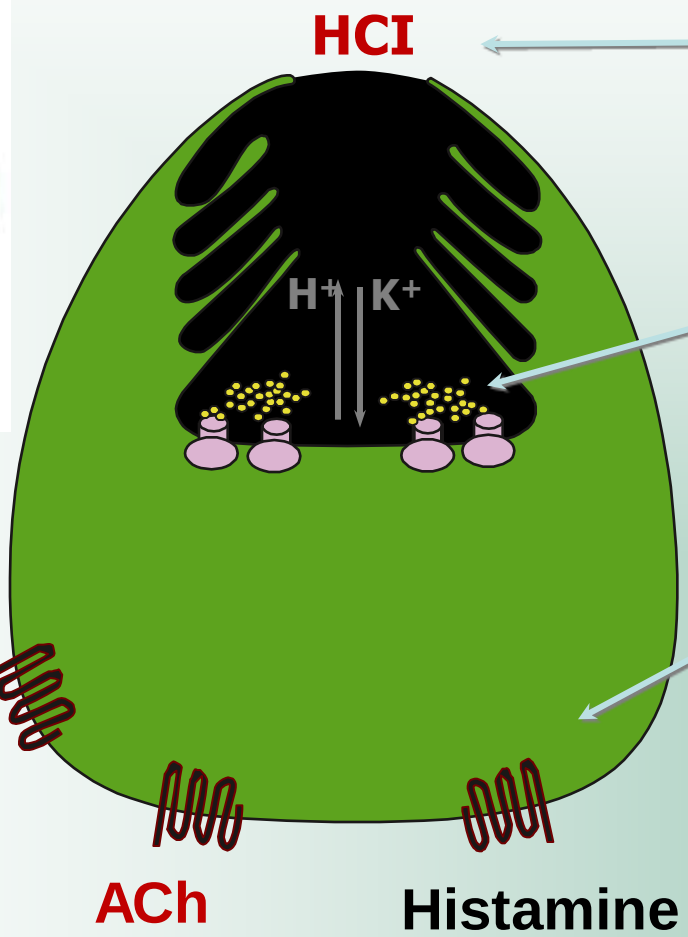
- Some degree of **gastroesophageal reflux** (back-flow of gastric or duodenal contents into the esophagus) is normal in both adults and children.

- **<u>Causes</u>**:

1. Incompetent esophageal sphincter,
2. Pyloric stenosis, or a
3. Motility disorder.



# Management of GERD Pharmacotherapy


Antacids neutralize secreted HCl

PPIs block acid at its source in the proton pump

$H_2$RAs block the histamine receptor, interfering with the stimulation pathways

ACh=acetylcholine

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## Stomach disorders

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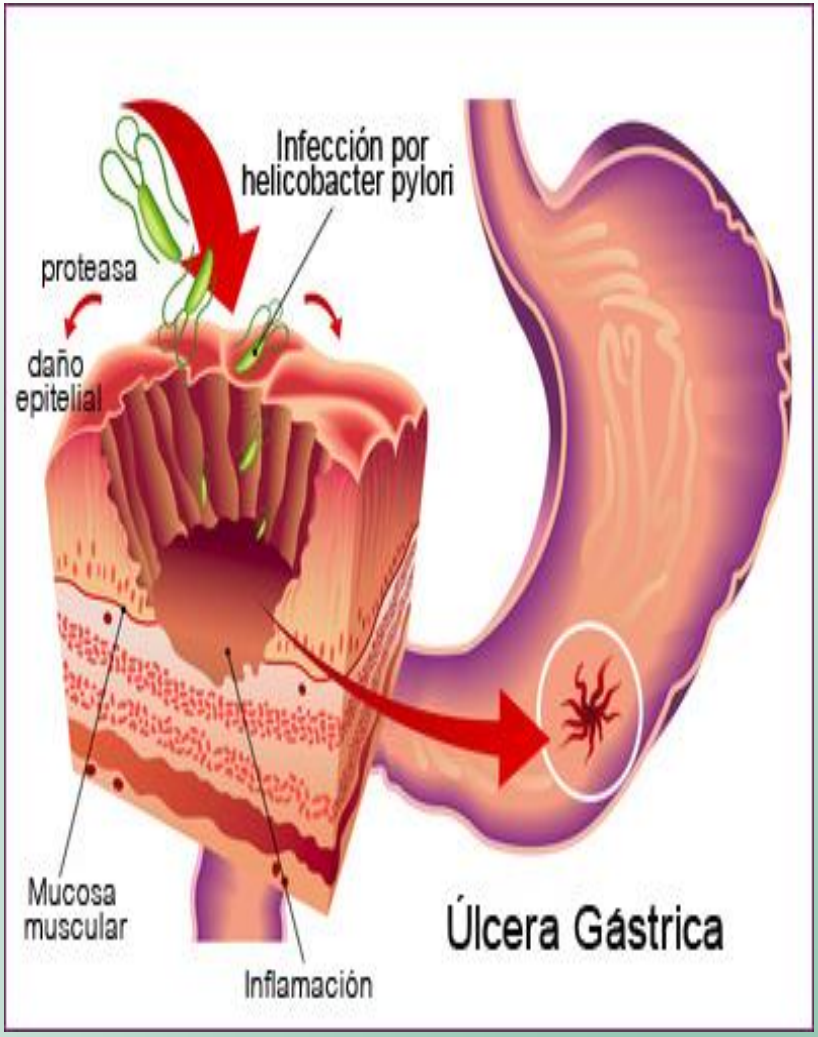
2018

# Learning Objectives

- Compare the etiology, clinical manifestations, and management of acute gastritis, chronic gastritis, and peptic ulcer.
- Use the nursing process as a framework for care of patients with gastritis, peptic ulcer.
- Describe the dietary, pharmacologic, and surgical treatment of peptic ulcer.
- Use the nursing process as a framework for care of patients undergoing gastric surgery.
- Describe the home health care needs of the patient who has ha gastric problems.

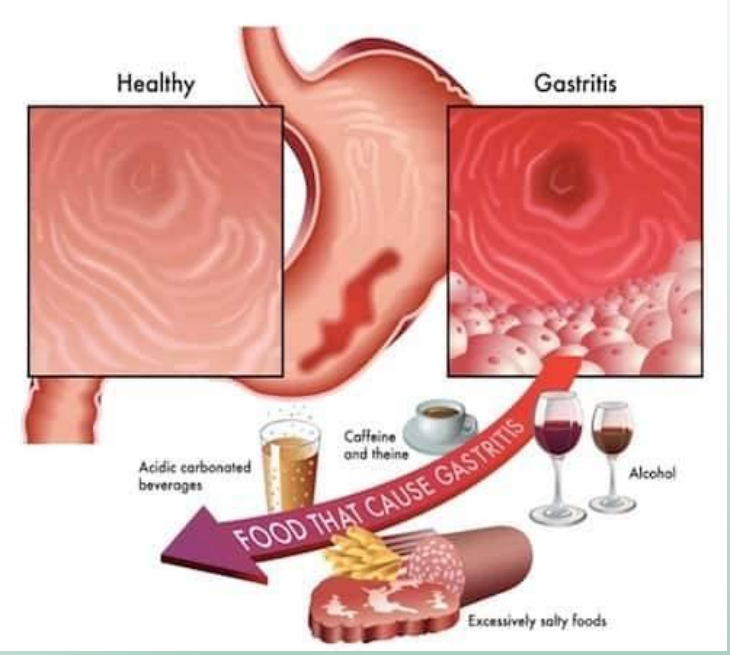
# Gastritis

- **Gastritis** (inflammation of the **gastric** or stomach mucosa) is a common GI problem.
- Gastritis may be acute, lasting several hours to a few days, or chronic, resulting from repeated exposure to irritating agents or recurring episodes of acute gastritis.



# Causes of acute gastritis

- ✓ Dietary indiscretion the person eats food that is contaminated with disease-causing microorganisms
- ✓ Overuse of aspirin and (NSAIDs)
- ✓ Excessive alcohol intake, bile reflux,



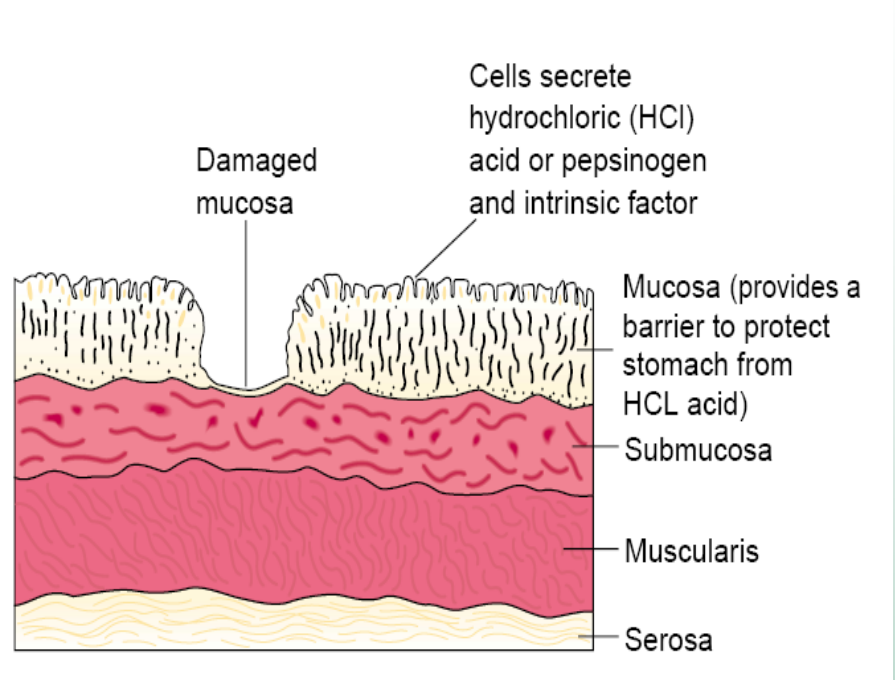

- ✓ Radiation therapy.
- ✓ Strong acid or alkali, which may cause the mucosa to become gangrenous or to perforate. Scarring can occur, resulting in **pyloric obstruction.**

# Chronic gastritis

- Prolonged inflammation of the stomach may be caused by either benign or malignant ulcers of the stomach or by the bacteria *Helicobacter pylori.*
- Chronic gastritis is sometimes associated with autoimmune diseases such as pernicious anemia;
- Dietary factors such as caffeine; the use of medications, especially NSAIDs; alcohol; smoking; or reflux of intestinal contents into the stomach.

- **Pathophysiology**

In gastritis, the gastric mucous membrane becomes edematous undergoes superficial erosion. Ulceration may occur and can lead to hemorrhage.




- **Clinical Manifestations**

✓ Abdominal discomfort, lassitude, nausea, and hiccupping .

✓ Anorexia, heartburn after eating,

✓ Chronic gastritis lead to vitamin deficiency ;mal-absorption of vitamin B12

# Medical management

- If gastritis is caused by ingestion of strong acids or alkalis, treatment consists of diluting and neutralizing the offending agent.
- To neutralize acids, common antacids (eg, aluminum hydroxide); to neutralize an alkali, diluted lemon juice or diluted vinegar is used.
- Therapy is supportive and may include nasogastric (NG) intubation, and gastric lavage.
- Chronic gastritis is managed by modifying the patient's diet, promoting rest, reducing stress . ***H. pylori*** may be treated with antibiotics (eg, tetracycline or amoxicillin) and a proton pump inhibitor (eg, lansoprazole

# Nursing role:

- Promoting fluid balance: Daily fluid intake and output are monitored to detect early signs of dehydration (minimal intake of 1.5 L/day).

- Measures to help relieve pain include instructing the patient to avoid foods and beverages that may be irritating to the gastric mucosa and instructing the patient about using medications to relieve chronic gastritis.

- Providing information about prescribed antibiotics, medications to decrease gastric secretion,

- Patients with pernicious anemia need information about long-term vitamin B12 injections.

- The nurse and patient review foods and other substances to be avoided (eg, spicy, irritating, or highly seasoned foods; caffeine; nicotine; alcohol).

# /// Peptic Ulcer ///

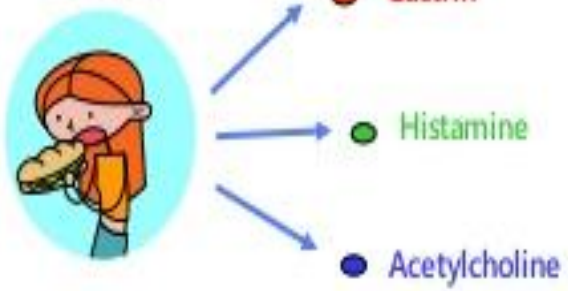
- A peptic ulcer is an excavation (hollowed-out area) that forms in the mucosal wall of the stomach or duodenum
- **Sites**:

1. In the **pylorus** (opening between stomach and duodenum),
2. In the **duodenum** (first part of small intestine),
3. In the **esophagus**.

- Erosion of a circumscribed area of mucous membrane is the cause ;This erosion may extend as deeply as the muscle layers or through the muscle to the peritoneum.

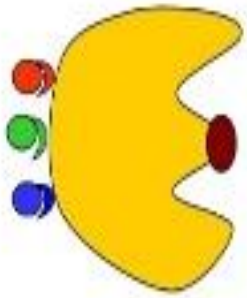
# How is Gastric Acid produced?

Step 1

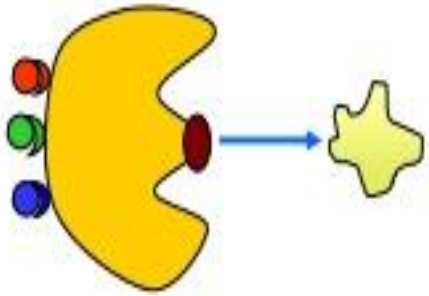



Sight, smell, taste and eating of food leads to release of biochemical substances

Step 2



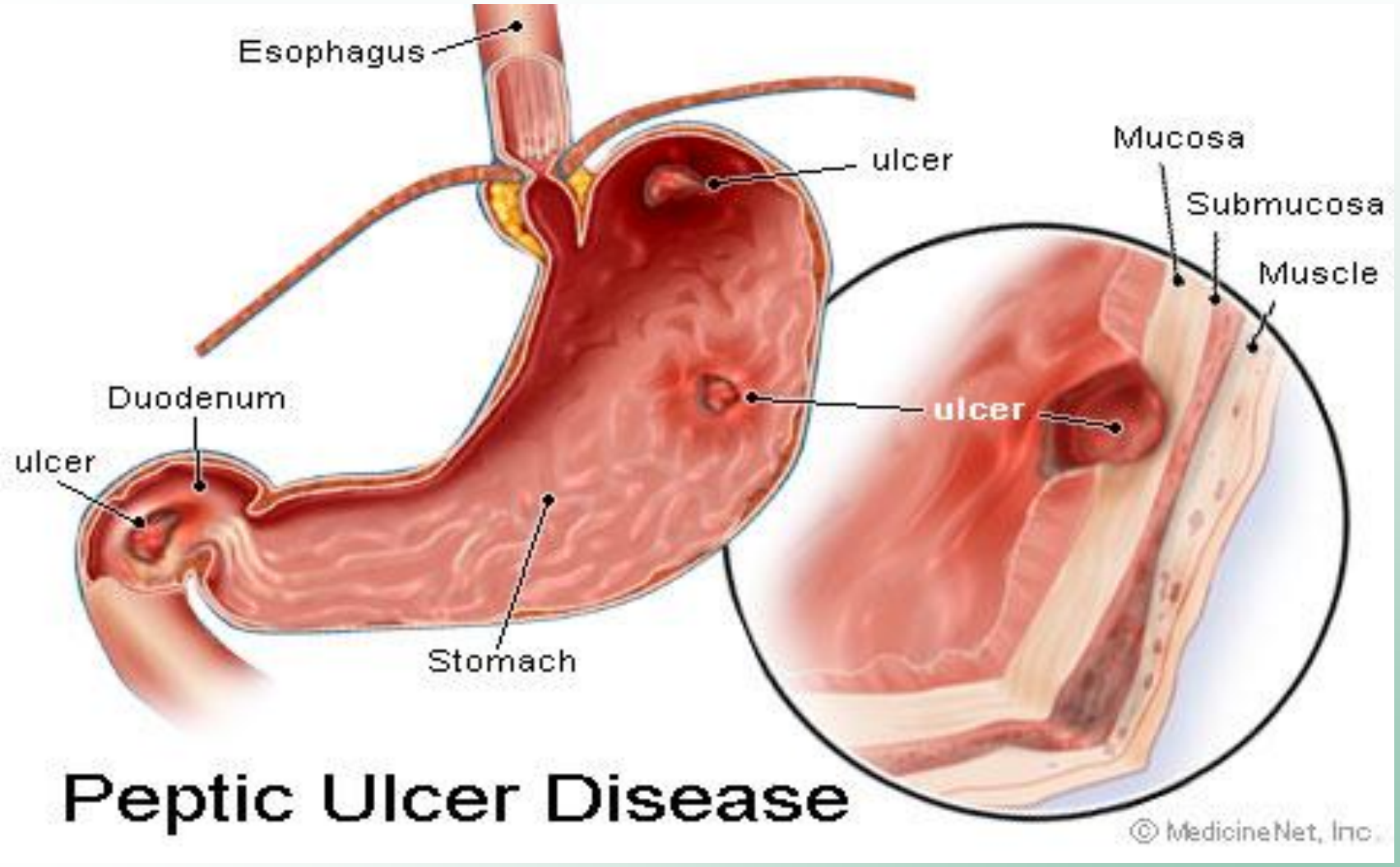
Biochemicals get attached to respective receptors on parietal cell



Step 3

Activation of proton pump and release of HCl

# Duodenal &Gastric Ulcers



- **Predisposing factors:**

1. Research has identified that peptic ulcers result from infection with the gram-negative bacteria *H. pylori*
2. Excessive secretion of HCl in the stomach may contribute to the formation of gastric ulcers,( some food, severe stress)
3. Familial tendency. A further genetic link is noted in the finding that people with blood type O
4. Chronic use of NSAIDs, alcohol ingestion
5. Zollinger-Ellison syndrome (ZES) consists of severe peptic ulcers, extreme gastric hyperacidity,

| DUODENAL ULCER | GASTRIC ULCER |
| --- | --- |
| ***Incidence*** | |
| Age 30–60 | Usually 50 and over |
| Male: female = 2–3:1 | Male: female = 1:1 |
| 80% of peptic ulcers are duodenal | 15% of peptic ulcers are gastric |
| ***Signs, Symptoms, and Clinical Findings*** | |
| Hypersecretion of stomach acid (HCl) | Normal—hyposecretion of stomach acid (HCl) |
| May have weight gain | Weight loss may occur |
| Pain occurs 2–3 hours after a meal; often awakened between 1–2 AM; ingestion of food relieves pain | Pain occurs ½ to 1 hour after a meal; rarely occurs at night; may be relieved by vomiting; ingestion of food does not help, sometimes increases pain |
| Vomiting uncommon | Vomiting common |
| Hemorrhage less likely than with gastric ulcer, but if present melena more common than hematemesis | Hemorrhage more likely to occur than with duodenal ulcer; hematemesis more common than melena |
| More likely to perforate than gastric ulcers | |
| ***Malignancy Possibility*** | |
| Rare | Occasionally |
| ***Risk Factors*** | |
| *H. pylori*, alcohol, smoking, cirrhosis, stress | *H. pylori*, gastritis, alcohol, smoking, use of NSAIDs, stress |

# Complications of peptic ulcer

1. Perforation & Penetration into pancreas, liver
2. Bowel obstruction, Pyloric stenosis
3. Bleeding--occurs in 25% to 33% of cases
4. Peritonitis
5. Gastric Cancer

# Pharmacologic therapy

- Currently, the most commonly used therapy in the treatment of ulcers is a combination of

1. Antibiotics, for *H. pylori* ulcers.
2. Proton pump inhibitors,
3. Histamine 2 receptor antagonists

- The patient is advised to adhere to the medication regimen to ensure complete healing of the ulcer. Because most patients become symptom-free within a week.

# Stress reduction and rest

- Reducing environmental stress requires physical and psychological modifications on the patient's part as well as the aid and cooperation of family members and significant others.

- The patient may need help in identifying situations that are stressful or exhausting.

- A rushed lifestyle and an irregular schedule may aggravate symptoms and interfere with regular meals

# Dietary modification

- The intent of dietary modification for patients with peptic ulcers is to avoid oversecretion of acid and hypermotility in the GI tract.
- These can be minimized by avoiding extremes of temperature and overstimulation from consumption of meat extracts, alcohol, and other caffeinated beverages, and diets rich in milk and cream (which stimulate acid secretion).
- In addition, an effort is made to neutralize acid by eating three regular meals a day.

# Nursing diagnoses

1. Acute pain related to the effect of gastric acid secretion on damaged tissue
2. Anxiety related to coping with an acute disease
3. Imbalanced nutrition related to changes in diet
4. Deficient knowledge about prevention of symptoms and

# Perforation and Penetration

- Perforation is the erosion of the ulcer through the gastric serosa into the peritoneal cavity without warning. It is an abdominal catastrophe and requires immediate surgery.
- Signs and symptoms of perforation include sudden, severe upper abdominal pain may be referred to the shoulder.

- Penetration is erosion of the ulcer through the gastric serosa into adjacent structures such as the pancreas, biliary tract, or gastrohepatic omentum. Symptoms of penetration include back and epigastric pain not relieved by medications,

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# Digestive diseases

## Intestinal disorders

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2018

# Constipation

**Causes**:

1. Irritable bowel syndrome (IBS) and diverticular disease.
2. Rectal or anal disorders (eg, hemorrhoids, fissures);
3. Obstruction (eg, cancer of the bowel);
4. Certain medications (tranquilizers, anticholinergics, antidepressants, antihypertensives, opioids, chronic laxative
5. Metabolic, neurologic, and neuromuscular conditions (eg, diabetes mellitus, Parkinson, multiple sclerosis);
6. Endocrine disorders (eg, hypothyroidism,

# Diarrhea

- Diarrhea can be acute or chronic. Acute diarrhea is most often associated with infection and is usually self-limiting; chronic diarrhea rhea persists for a longer period and may return.
- **Causes:**

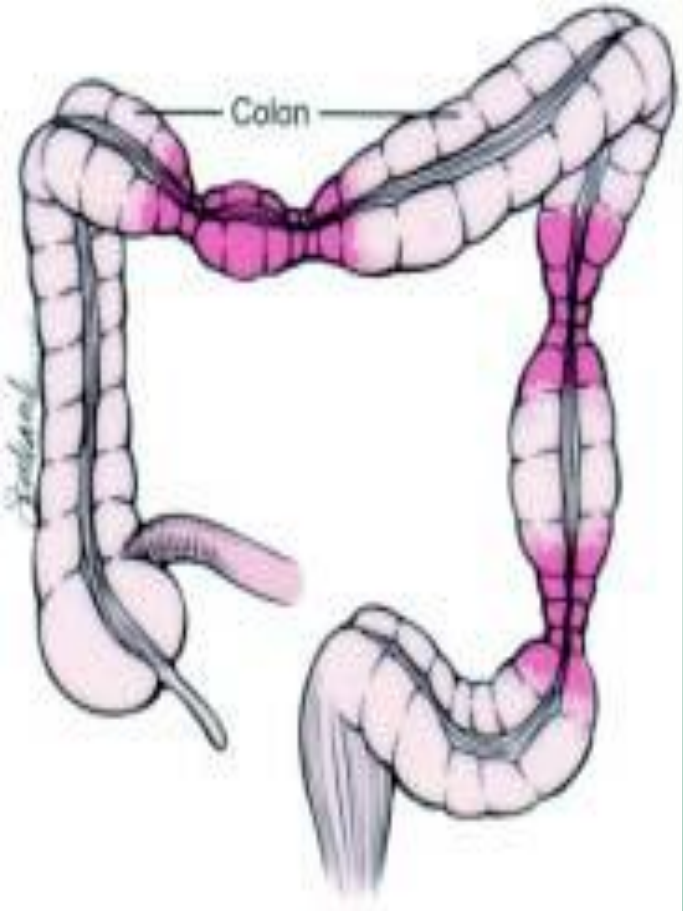
1. Viral or bacterial , and parasites infectious processes
2. Certain medications (antibiotics, thyroid hormone replacement, laxatives, chemotherapy, antacids),
3. Certain tube feeding formulas, metabolic and endocrine
4. Disorders (eg, diabetes, Addison's disease, thyrotoxicosis),
5. Malabsorption , AIDS

# IBS: Irritable bowel syndrome

- IBS is one of the most common GI problems. It occurs more commonly in women than in men, and the cause is still unknown. Although no anatomic or biochemical abnormalities have been found that explain the common symptoms, various
- **Factors associated with the syndrome:**
- heredity, psychological stress or conditions such as depression and anxiety,
- Diet high in fat and stimulating or irritating foods, alcohol consumption, and smoking.

- **Pathophysiology**
- IBS results from a functional disorder of intestinal motility. The change in motility may be related to the neurologic regulatory system, infection or irritation, or a vascular or metabolic disturbance.
- The peristaltic waves are affected at specific segments of the intestine and in the intensity with which they propel the fecal matter forward. There is no evidence of inflammation or tissue changes in the intestinal mucosa.

- **Clinical Manifestations**
- The primary symptom is an alteration in bowel patterns constipation, diarrhea, or a combination of both.
- Pain, bloating, and abdominal distention often accompany



# Medical Management

- The goals of treatment are aimed at relieving abdominal pain, controlling the diarrhea or constipation, and reducing stress.
- Restriction irritating foods (eg, beans, caffeinated products, fried foods, spicy foods).
- A high-fiber diet to control the diarrhea and constipation.
- Exercise can assist in reducing anxiety and increasing intestinal motility.
- Antidiarrheal agents (eg, loperamide) may be given to control the diarrhea and fecal urgency. Antidepressants can assist in treating underlying anxiety

# Conditions of malabsorption

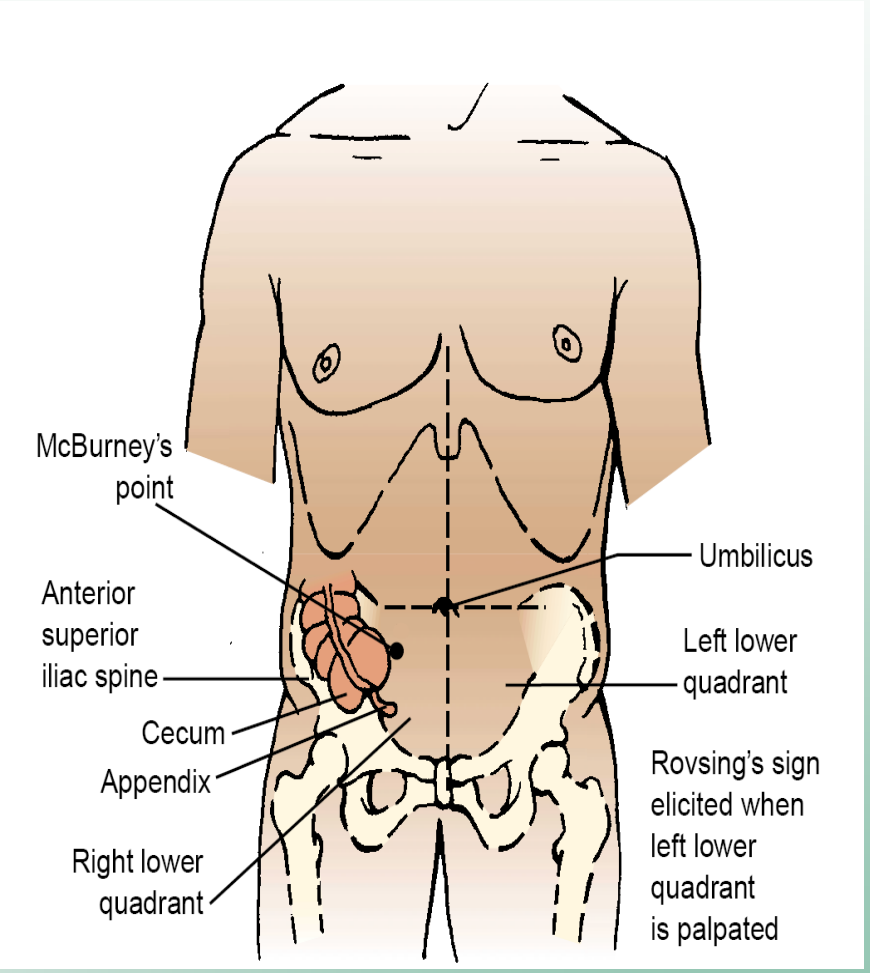
- **Malabsorption** is the inability of the digestive system to absorb one or more of the major vitamins (especially vitamin B12), minerals (ie, iron and calcium), and nutrients (ie, carbohydrates, fats, and proteins).
- Interruptions in the complex digestive process may occur anywhere in the digestive system and cause decreased absorption.
- Diseases of the small intestine are the most common cause of malabsorption.

# Clinical manifestations

1. Abdominal distention, pain, increased flatus,
2. Weakness, weight loss,
3. Decreased sense of well-being.
4. Signs of vitamin and mineral deficiency (eg, easy bruising, osteoporosis, anemia).

# Appendicitis

- **Appendicitis**, the most common cause of acute abdomen, is the most common reason for emergency abdominal surgery. Although it can occur at any age,



# Clinical Manifestations

1. Vague epigastric or periumbilical pain progresses to right lower quadrant pain and is usually, Loss of appetite
2. low-grade fever and nausea and sometimes by vomiting.
3. Local tenderness is elicited at McBurney's point when pressure is applied, Rebound tenderness

- The major complication of appendicitis is perforation of the appendix, which can lead to peritonitis or an abscess.
- Surgery is indicated if appendicitis is diagnosed.

## *Table 38-3* • Potential Complications and Nursing Interventions After Appendectomy

| COMPLICATION | NURSING INTERVENTIONS |
|---|---|
| Peritonitis | Observe for abdominal tenderness, fever, vomiting, abdominal rigidity, and tachycardia.<br>Employ constant nasogastric suction.<br>Correct dehydration as prescribed.<br>Administer antibiotic agents as prescribed. |
| Pelvic abscess | Evaluate for anorexia, chills, fever, and diaphoresis.<br>Observe for diarrhea, which may indicate pelvic abscess.<br>Prepare patient for rectal examination.<br>Prepare patient for surgical drainage procedure. |
| Subphrenic abscess (abscess under the diaphragm) | Assess patient for chills, fever, and diaphoresis.<br>Prepare for x-ray examination.<br>Prepare for surgical drainage of abscess. |
| Ileus (paralytic and mechanical) | Assess for bowel sounds.<br>Employ nasogastric intubation and suction.<br>Replace fluids and electrolytes by intravenous route as prescribed.<br>Prepare for surgery, if diagnosis of mechanical ileus is established. |

# Diverticular disease

- A **diverticulum** is a saclike outpouching of the lining of the bowel that extends through a defect in the muscle layer. **Diverticulosis** exists when multiple diverticula are present without inflammation or symptoms.
- Chronic constipation often precedes the development of diverticulosis by many years. Frequently, no problematic symptoms occur with diverticulosis.
- **Diverticulitis** results when food and bacteria retained in a diverticulum produce infection and inflammation that can impede drainage and lead to perforation or abscess

# Regional enteritis (Crohn's disease)

- Regional enteritis commonly occurs in adolescents or young adults but can appear at any time of life.
- It is more common in women, and it occurs frequently in the older population (between the ages of 50 and 80).
- It can occur anywhere along the GI tract, but the most common areas are the distal ileum and colon.
- Crohn's disease is seen two times more often in patients who smoke than in nonsmokers

# Pathophysiology

- Regional enteritis is a sub-acute and chronic inflammation that extends through all layers of the bowel wall from the intestinal mucosa.
- It is characterized by periods of remissions and exacerbations.
- The disease process begins with edema and thickening of the mucosa. Ulcers begin to appear on the inflamed mucosa.
- These lesions are not in continuous contact with one another and are separated by normal tissue. Fistulas, fissures, and abscesses form as the inflammation extends into the peritoneum.

# Clinical Manifestations

- Abdominal tenderness and spasm.
- **Crampy pains** occur after meals.
- To avoid crampy pain, the patient tends to limit food intake, The result is **weight loss**, **malnutrition**, and **anemia**.
- **Ulcers in the membranous lining**, swollen intestine.
- Disrupted absorption causes **chronic diarrhea**
- Abscesses, fistulas, and fissures are common.
- Joint involvement (eg, arthritis), skin lesions (erythema )
- Ocular disorders (eg,conjunctivitis), and oral ulcers.

# Crohn's disease

Stomatitis

**Eye**
inflammation

**Mount**
Ulcer

**Skin**
Ulcers
and sores

**Liver and bile duct**
Inflammation

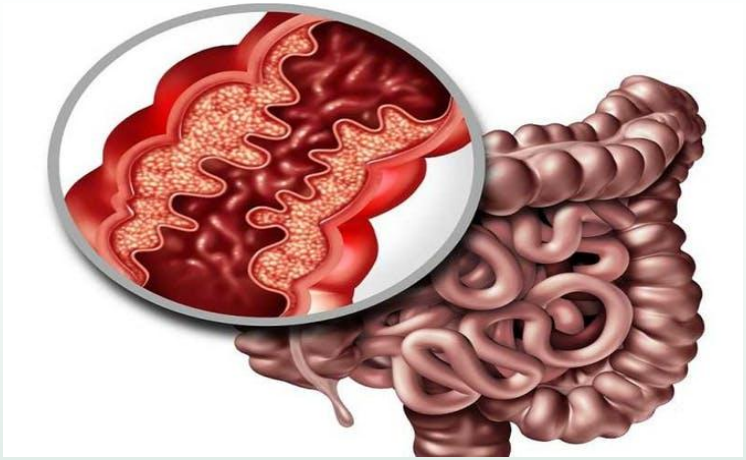
**Stomach**
Vomiting

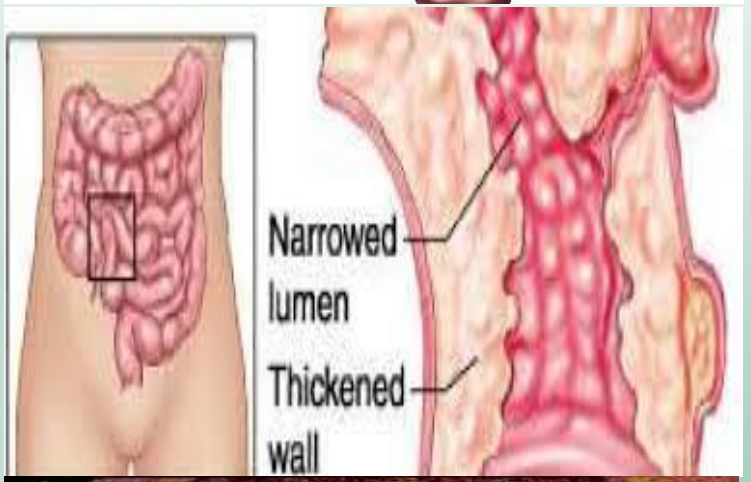
**Intestinal**
Diarrhea
Abdominal pain
Cramping
Ulcers in digestive tract

Fever
Weight loss
Decreased appetite

Rectal bleeding

**Joint**
Pain and swelling

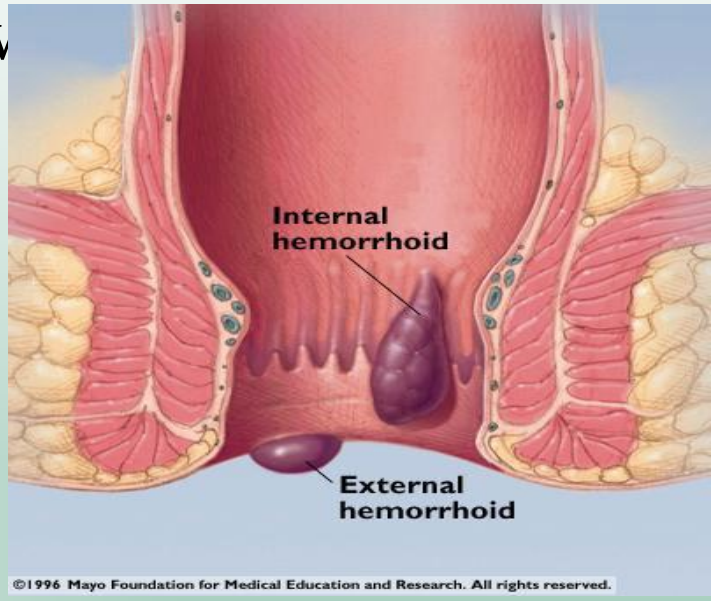





# Rectal diseases /Hemorrhoids

- **Definition**:

  Dilated or enlarged veins in the lov
  rectum or anus.




- **Two Types:**
  - Internal- Under the skin
  - External- Around the anus
- **Grades**:

  I- Hemorrhoids only bleed

  II- Prolapse and reduce spontaneously

  III- Require replacement

  IV- Permanently Prolapsed

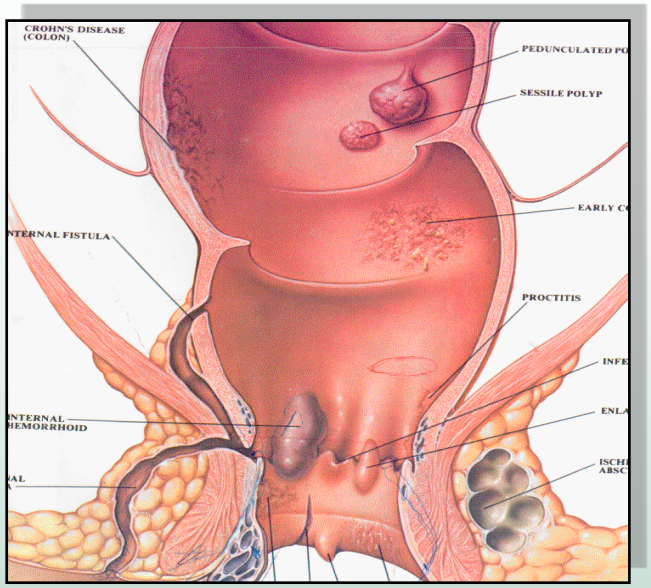
# Symptoms of hemorrhoids

- **Rectal Bleeding**
- **Bright red blood in stool**
- **Pain during bowel movements**
- **Anal Itching**
- **Rectal Prolapse**
- **Thrombus**
- **Severe bleeding can occur causing iron deficiency anemia**

# Etiology


- Most common cause - constipation
- Prolonged straining
- Pregnancy
- Heredity
- Increased intra-abdominal pressure
- Aging (due to thinning of supportive tissue)

# Treatment Non-surgical




- Preventing constipation
- Drinking Fluids
- High-fiber diet
- Stool softeners
- Apply cream or suppository containing hydrocortisone
- Keep anal area clean
- Soak in a warm bath
- Apply ice packs or compresses x 10min

# Treatments

- ✓ For painful or persistant hemorrhoids:
  - ✓Tying off a hemorrhoid
  - ✓Sclerotherapy , Freezing
  - ✓Infered Light
  - ✓Laser Therapy, Electrical Current
  - ✓Surgery

# Persistent hemorrhoids treatment