المحاضرة الثالثة ـ المرحلة الثانية ـ الفصل الدراسي الاول

جامعة المعارف ـ كلية التمريض

تمريض البالغين Adult Nursing

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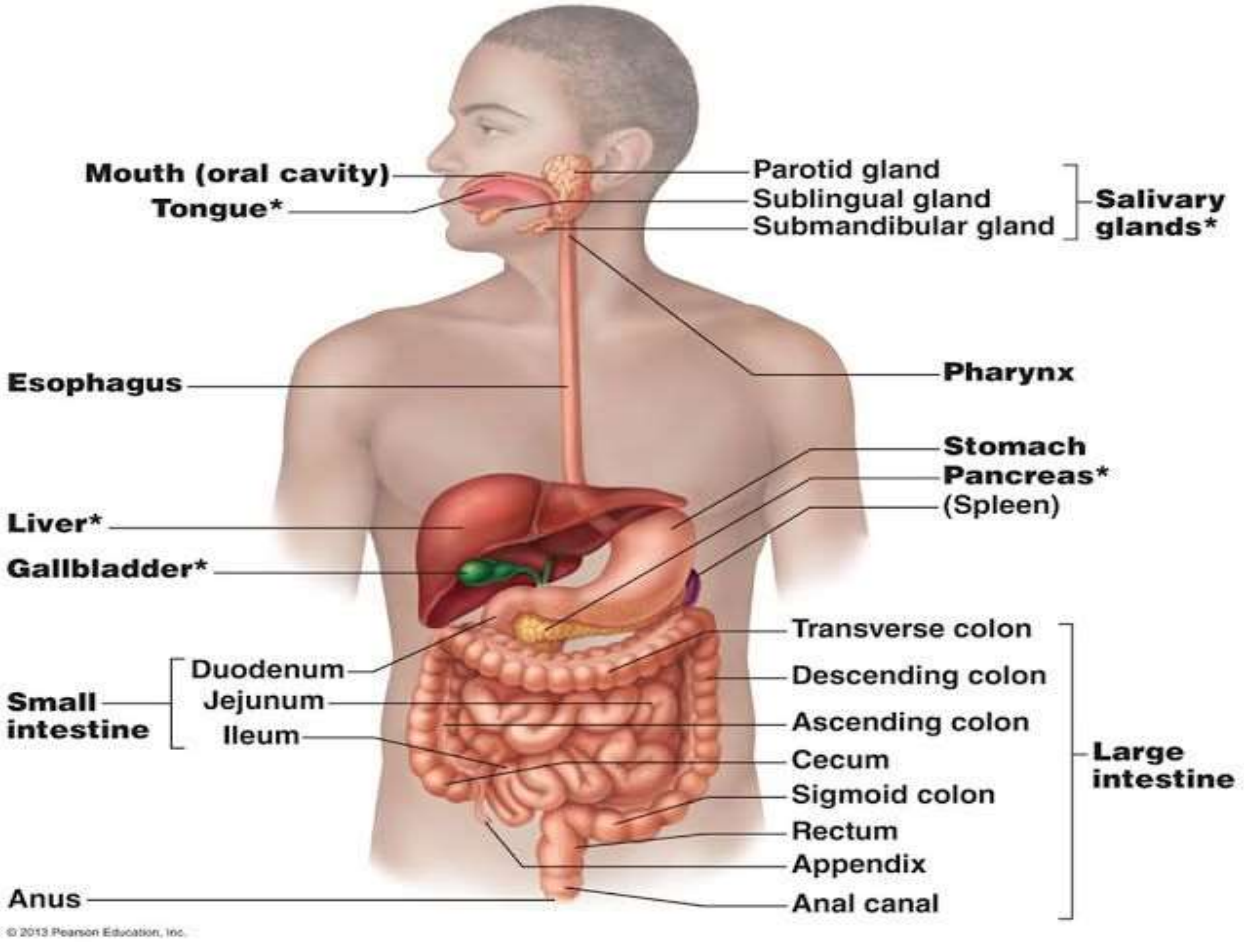
Digestive System

Organization of The Digestive System

♣ Organs of the digestive system are divided into 2 main group : the **gastrointestinal tract** (GI tract) and **accessory structures** .

♣ GI tract is a continuous tube extending through the ventral cavity from the **mouth to the anus** – it consists of the mouth , oral cavity , oropharynx , esophagus , stomach , small intestine , large intestine , rectum , and anus .

♣ **Accessory structures** include the teeth, tongue (in oral cavity) , salivary glands , liver , gallbladder , and pancreas .



Functions of the Digestive System

♣ **Ingestion** – the oral cavity allows food to enter the digestive tract and have mastication (chewing) occurs , and the resulting food bolus is swallowed .

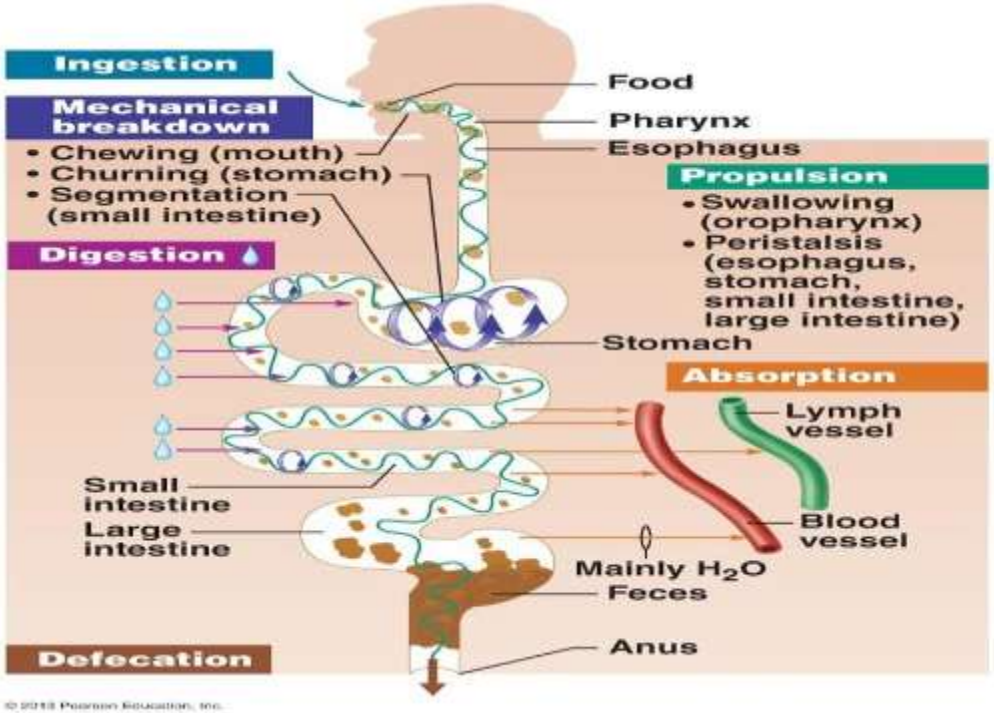
♣ **Digestion:**

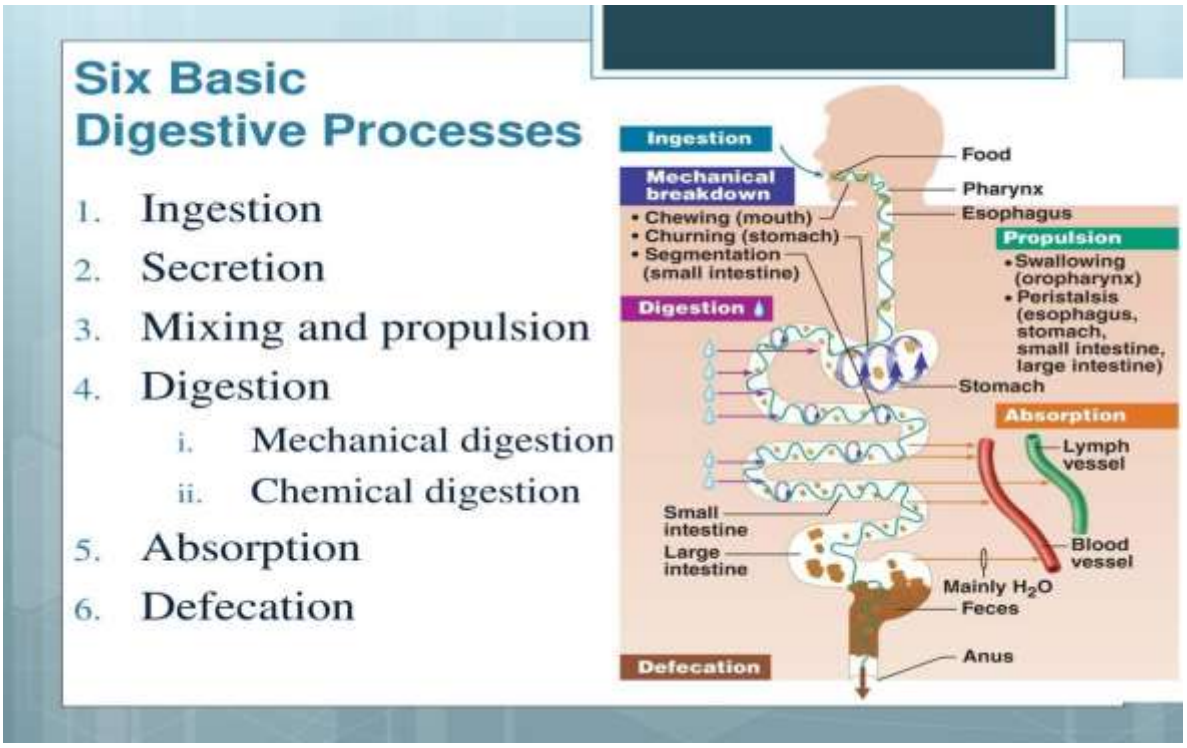
- **Mechanical digestion** – muscular movement of the digestive tract (mainly in the oral cavity and stomach) physically break down food into smaller particles .
- **Chemical digestion** – hydrolysis reactions aided by enzymes (mainly in the stomach and small intestine) chemically break down food particles into nutrient molecules , small enough to be absorbed .

♣ **Secretion** – enzymes and digestive fluids secreted by the digestive tract and its accessory organs facilitate chemical digestion .

♣ **Absorption** – passage of the end – products (nutrients) of chemical digestion from the digestive tract into blood or lymph for distribution to tissue cells .

♣ **Elimination** – undigested material will be released through the rectum and anus by defecation .





Signs and symptoms associated with gastrointestinal (GI) disorders

* **Subjective data** associated with gastrointestinal (GI) disorders

1. Inadequate diet

2. Change in bowel habits

   a. Constipation

   b. Diarrhea

   c. flatus

3. complaints of indigestion

4. change in weight

5. nausea and vomiting

6. abdominal pain

7. difficulty in swallowing

8. loss of appetite

Objective data associated with (GI) disorders

1. dysphagia

2. Abnormal color and consistency of stool

   a. Melena

   b. clay

   c. frothy

   d. steatorrhea

   e. occult blood in stool

3. abnormal bowel sounds

4. abdominal distention

5. Rectal bleeding

6. Jaundice

7. Edema

8. Hematemesis

9. anorexia

Diagnostic Measures for gastrointestinal tract GIT

1. upper GI series (barium meal)

Examination of esophagus, stomach, duodenum, and other portions of all small bowel after swallowing barium.

2. Lower series (barium enema)

Examination of the large intestine after administration of barium via an enema.

3. Endoscopy

Direct visualization of the esophagus and stomach, using an endoscope.

4. Fecal occult blood test

Analysis of stool for blood.

5. Fecal fat

Analysis of stool for fat

6. Proctosigmoidoscopy

Direct visualization of the sigmoid colon, rectum, and anal canal, using alighted scope.

7. Barium swallow

Fluoroscopic examination of the pharynx and esophagus after administration of barium.

8. Cholangiography

Radiographic examination of the biliary duct system. Using an injection of aradiopaque dye through a catheter.

9. Liver scan

Visual imaging of the distribution of blood flow in the liver, using an I.V injection of a radioisotope.

10.Gastric analysis

Fasting analysis to measure the acidity of gastric secretions by aspirates the contents of the stomach through a nasogastric (NG) tube.

11. Ultrasonography

Visualization of body organs, noninvasive procedure examination that uses echoes from sound waves.

12. Blood chemistry

Laboratory test of a blood sample.

13. Hematologic studies

Laboratory test of a blood sample(RBC, WBC, PTT, PT, Hgb, Hct).

14. Liver biopsy

Histologic evaluation of the liver tissue, by using a needle for the percutaneous removal of a small amount of liver tissue.

Abdominal Hernias

Definition

A hernia is a protrusion of an organ, tissue, or structure through the wall of the cavity in which it is normally contained. It is often called a "rupture."

Classification of the hernia by Site

1. *Inguinal*—hernia(الفتق الاربي الواقع عند اصل الفخذ) into the inguinal canal (more common in males).

a. *Indirect inguinal*—due to a weakness of the abdominal wall at the point through which the spermatic cord emerges in the male and the round ligament in the female. Through this opening, the hernia extends down the inguinal canal and often into scrotum or labia.

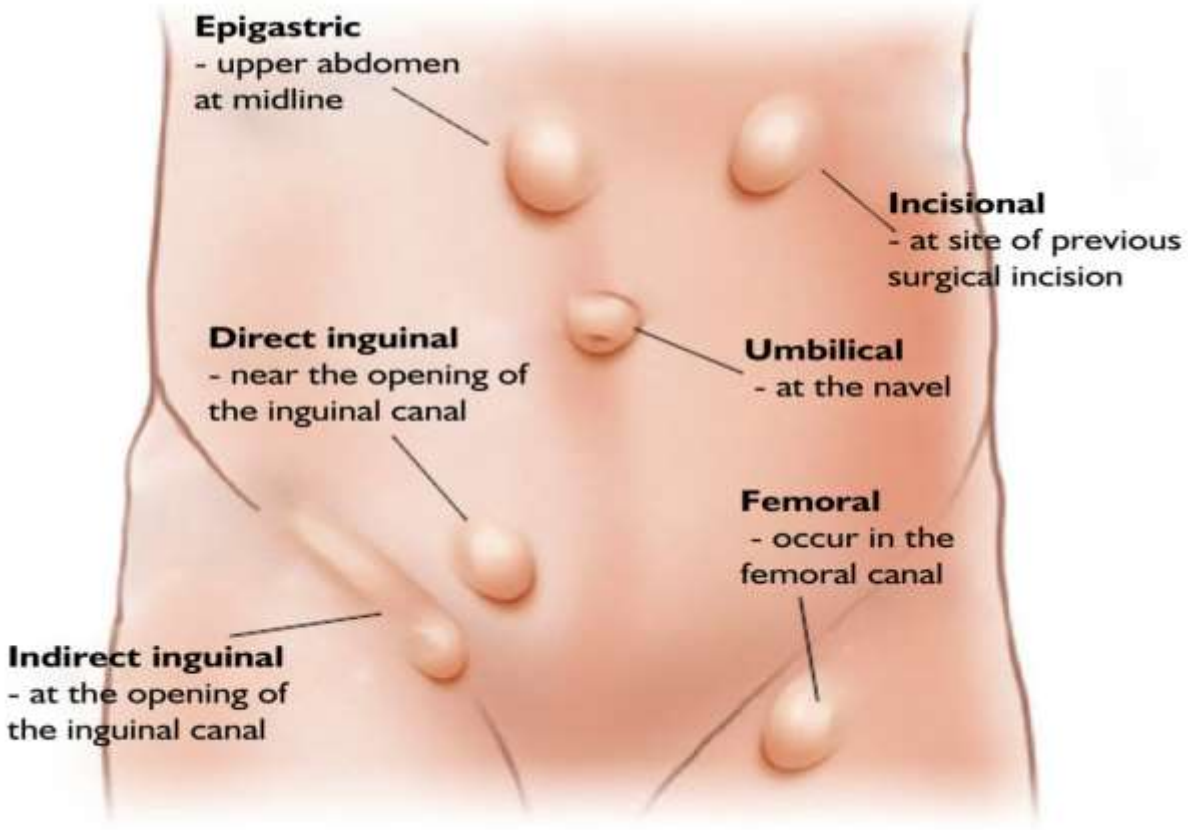
b. *Direct inguinal*—passes through the posterior inguinal wall; more difficult to repair than indirect inguinal hernia.

2. *Femoral*—hernia into the femoral canal, appearing below the inguinal ligament (Poupart's ligament; ie, below the groin).

3. ***Umbilical***—intestinal protrusion at the umbilicus due to failure of umbilical orifice to close. Occurs most often in obese women, children, and in patients with increased intra-abdominal pressure from cirrhosis and ascites.

4. ***Ventral*** **or** ***incisional***—intestinal protrusion due to weakness at the abdominal wall; may occur after impaired incisional healing due to infection or drainage.

5. ***Peristomal***—hernia through the fascial defect around a stoma and into the subcutaneous tissue.



Classification of the hernia by Severity

1. **Reducible**—the protruding mass can be placed back into abdominal cavity.

2. **Irreducible**—the protruding mass cannot be moved back into the abdomen.

3. **Incarcerated**—an irreducible hernia in which the intestinal flow is completely obstructed.

4. **Strangulated**—an irreducible hernia in which the blood and intestinal flow are completely obstructed; develops when the loop of intestine in the sac becomes twisted or swollen and a constriction are produced at the neck of the sac.

Causes of the hernia

1. Results from **congenital or acquired weakness** (traumatic injury, aging) of the abdominal wall.

2. May result from **increased intra-abdominal pressure** due to heavy lifting, obesity, pregnancy, straining, coughing, or proximity(قريب) to tumor.

Clinical Manifestations

1. Bulging over herniated area appears when the patient stands or strains(جهد), and disappears when supine.

2. Hernia tends to increase in size and recurs with intra-abdominal pressure.

3. Strangulated hernia presents with **pain**, **vomiting**, **swelling** of hernial sac, lower abdominal signs of **peritoneal irritation**, **fever.**

Diagnosis of Hernia

Based on clinical manifestations:

1. **Abdominal X-rays**—reveal abnormally high levels of gas in the bowel.

2. **Laboratory studies** (complete blood count, electrolytes) — may show hemoconcentration (increased hematocrit), dehydration (increased or decreased sodium), and elevated white blood cell (WBC) count, if incarcerated.

Management

1. Mechanical (reducible hernia only).

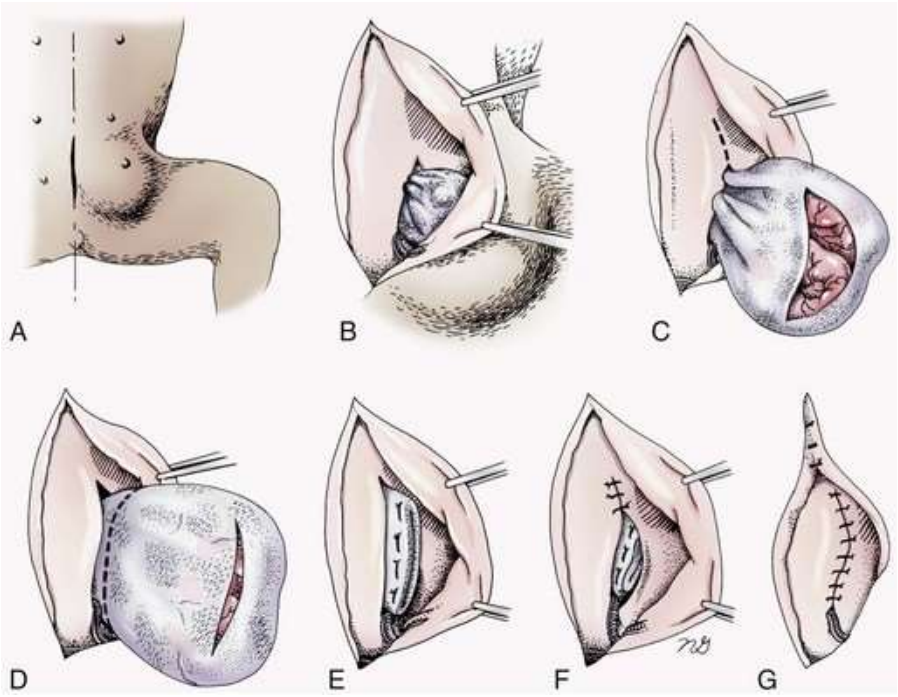
a. A truss is an appliance with a pad and belt that is held snugly over a hernia to prevent abdominal contents from entering the hernial sac. A truss provides external compression over the defect and should be removed at night and reapplied in the morning before patient arises. This nonsurgical approach may be used only when a patient is not a surgical candidate.

b. Peristomal hernia is often managed with a hernia support belt with Velcro, which is placed around an ostomy pouching system (similar to a truss).

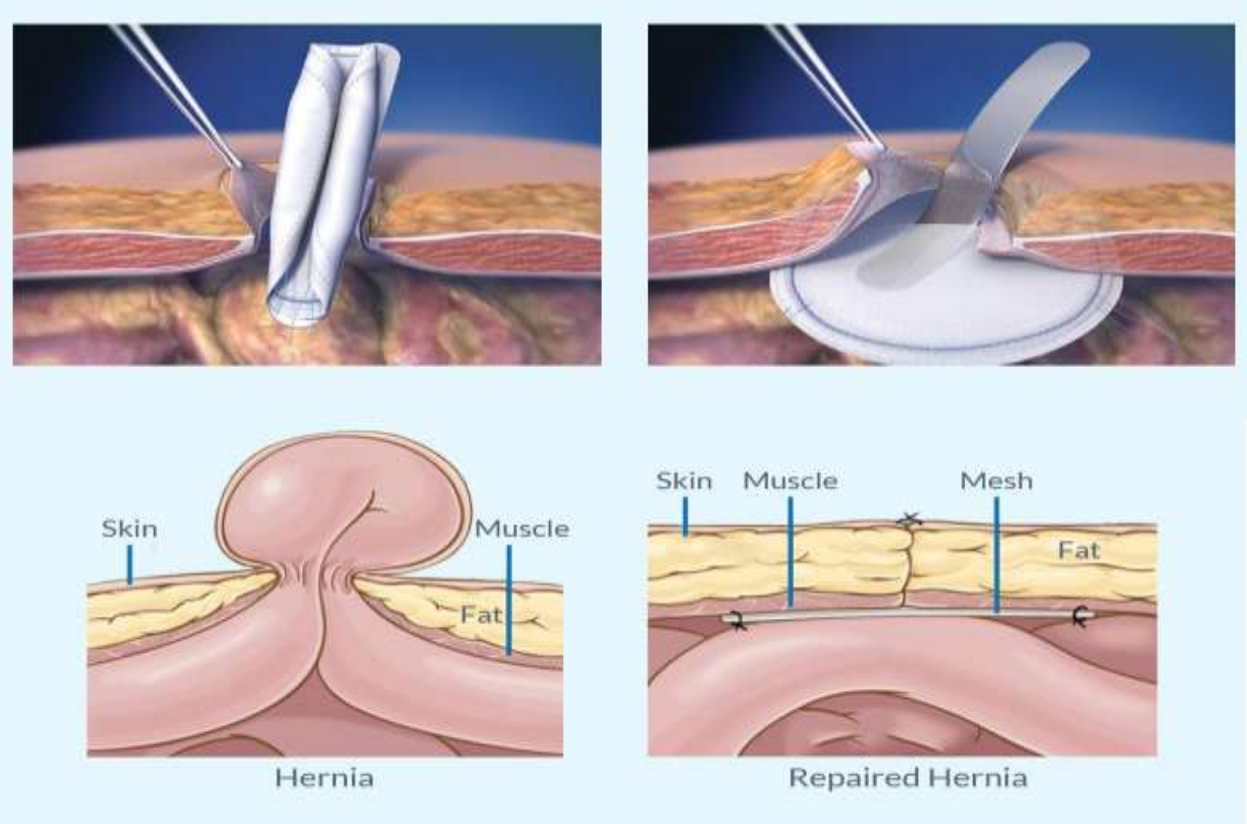
c. Conservative measures—no heavy lifting, straining at stool, or other measures that would increase intra-abdominal pressure.

2. Surgical—recommended to correct hernia before strangulation occurs, this then becomes an emergency situation.

a. Herniorrhaphy—removal of hernial sac; contents replaced into the abdomen; layers of muscle and fascia sutured. Laparoscopic herniorrhaphy is a possibility and often performed as outpatient procedure.



b. Hernioplasty involves reinforcement(تعزيز) of suturing (often with mesh) for extensive hernia repair.



c. Strangulated hernia requires resection of ischemic bowel in addition to repair of hernia.

Complications of Hernia

1. Bowel obstruction

2. Recurrence of hernia

Nursing Interventions

Achieving Comfort

1. Fit the patient with truss or belt when hernia is reduced, if ordered.

2. Trendelenburg's position may reduce pressure on hernia, when appropriate.

3. Emphasize to the patient to wear truss under clothing and to apply before getting out of bed when hernia is reduced.

4. Give stool softeners as directed.

5. Evaluate for signs and symptoms of hernial incarceration or strangulation.

6. Insert NG tube for incarcerated hernia, if ordered, to relieve intra-abdominal pressure on herniated sac.

Relieving Pain Postoperatively

1. Have the patient splint the incision site with hand or pillow when coughing to lessen pain and protect site from increased intra-abdominal pressure.

2. Administer analgesics, as ordered.

3. Teach about bed rest, intermittent ice packs, and scrotal elevation as measures used to reduce scrotal edema or swelling after repair of an inguinal hernia.

4. Encourage ambulation as soon as permitted.

5. Advise the patient that difficulty in urinating is common after surgery; promote elimination to avoid discomfort, and catheterize if necessary.

Preventing Infection

1. Check dressing for drainage and incision for redness and swelling.

2. Monitor for other signs and symptoms of infection: **fever**, **chills**, **malaise, diaphoresis**.

3. Administer antibiotics, if appropriate.

Ulcerative Colitis

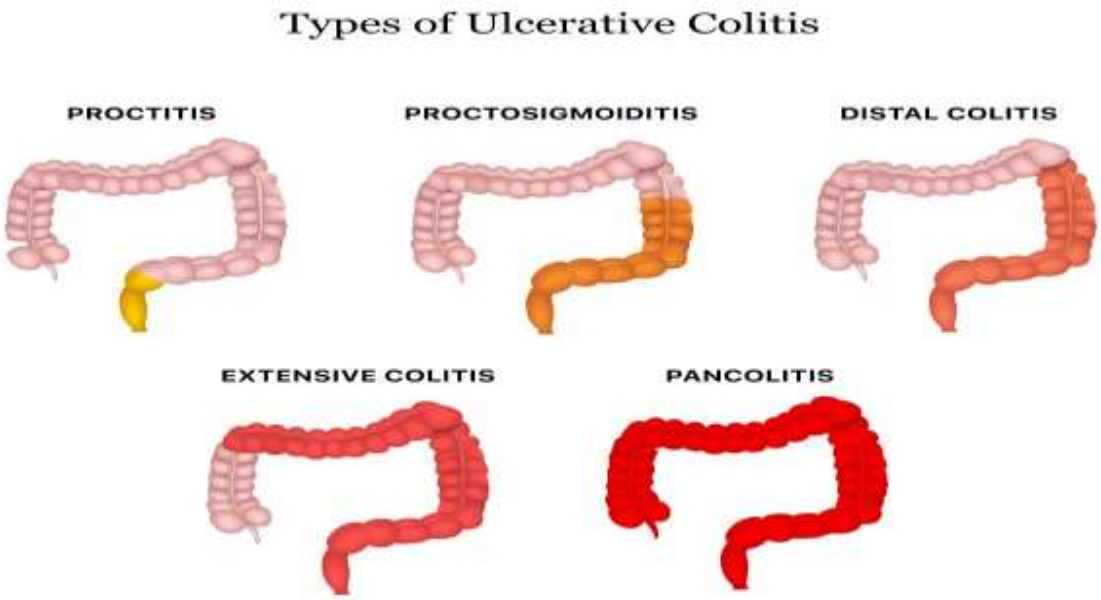
Definition

Ulcerative colitis is a chronic inflammatory disease of the large intestine, commonly in the sigmoid.

Incidence

More common in **women** than **men,** primarily those between ages **20 and 40**; more common in **Jews** and **non-Whites.**

Types of Ulcerative Colitis



Causes of Ulcerative Colitis

Primary cause

- Unknown

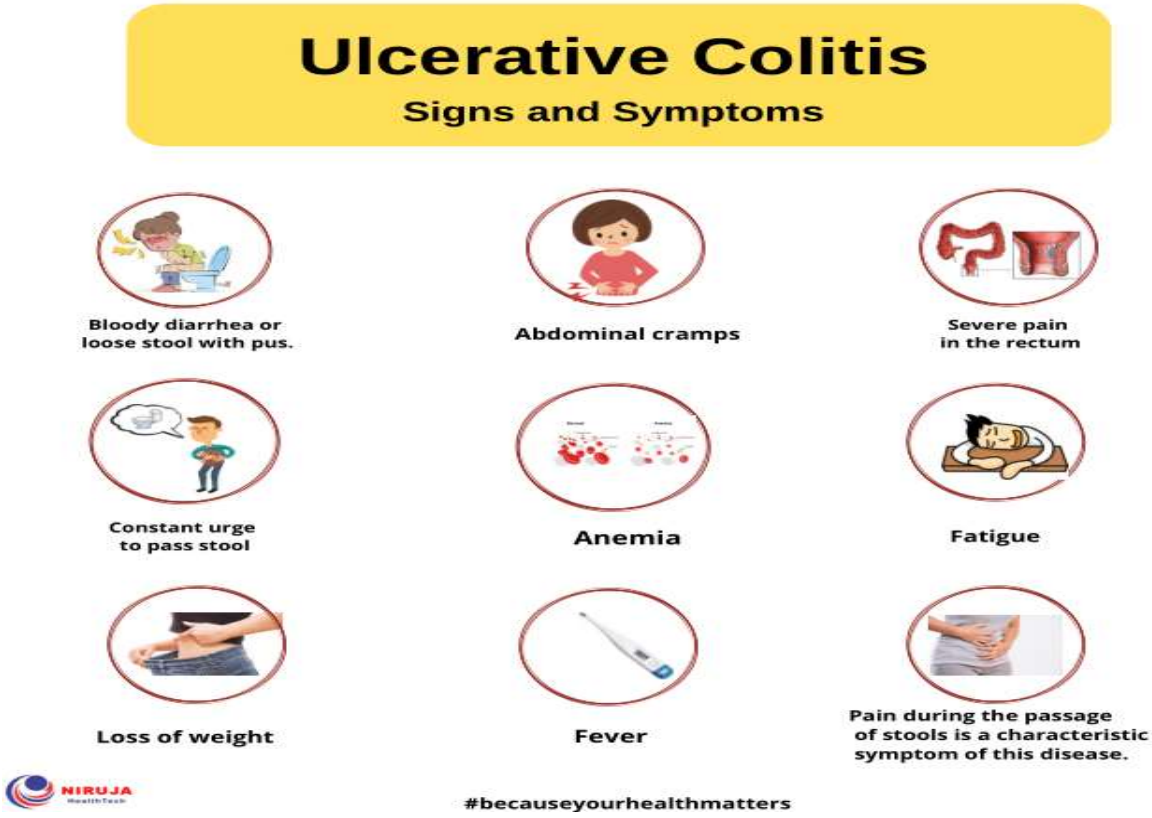
Secondary causes

- Genetic

- Immunologic
- Infectious

Signs and Symptoms of Ulcerative Colitis

- Abdominal distention
- Abdominal rigidity at times
- Anemia
- Bowel distention
- Cramping abdominal pain, typically in lower left quadrant
- Dehydration and fluid and electrolyte imbalances
- Diarrhea (pronounced, 5 to 25 stools daily) with blood, mucus, and pus but no fat
- Fever
- Nausea and vomiting
- Rectal bleeding
- Weight loss

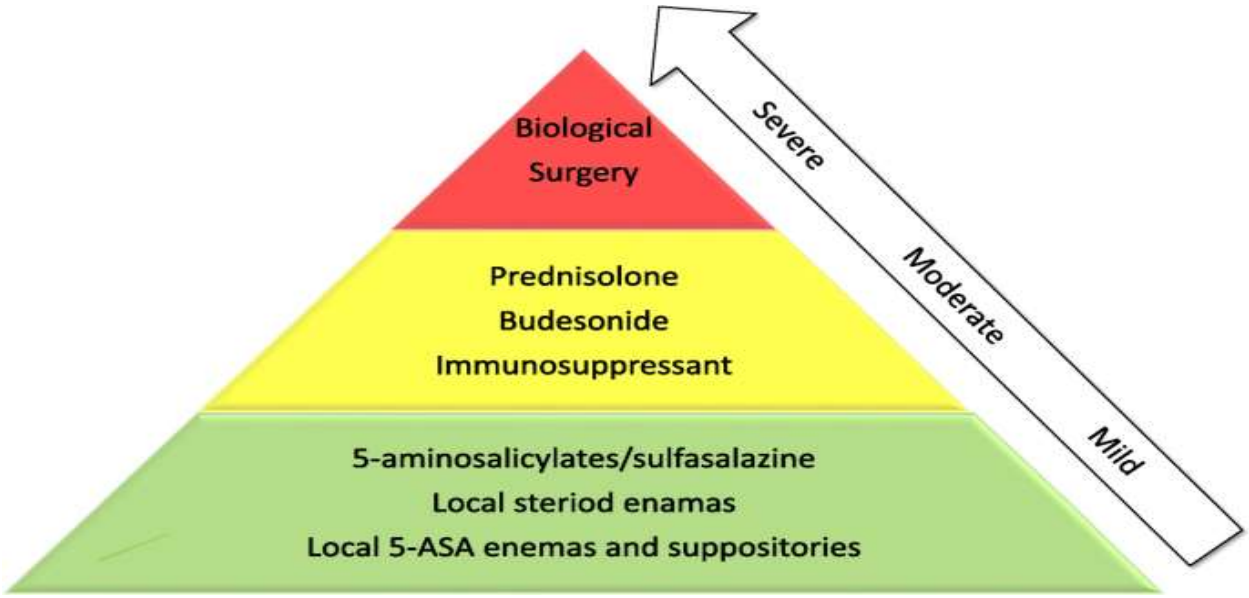


Diagnosis of Ulcerative Colitis

- Barium enema
- Biopsy of rectal cells
- Fiberoptic colonoscopy
- Sigmoidoscopy
- Stool analysis

Treatment of Ulcerative Colitis

- Medications: anti-inflammatories, antidiarrheal, antibiotics, immunosuppressants, corticosteroids
- Surgery if necessary
- Avoidance of offending foods
- Elemental formula or total parenteral nutrition (TPN) if required



Nursing intervention and responsibilities:

1. Maintain the patient`s diet; withhold food and fluids as necessary.

2. Administer IV. Fluids and medications as prescribed.

3. Monitor and record VS, UO, laboratory studies, and daily weight.

4. Maintain bed rest for the patient. 5. Minimize environmental stress.

Complication of Ulcerative Colitis

- Toxic megacolon
- Perforation
- Hemorrhage
- Malignant neoplasms
- Pyelonephritis
- Nephrolithiasis
- Cholangiocarcinoma
- Arthritis
- Retinitis, iritis
- Erythema nodosum