

# **Gastrointestinal Tract System For Elderly**

**By**

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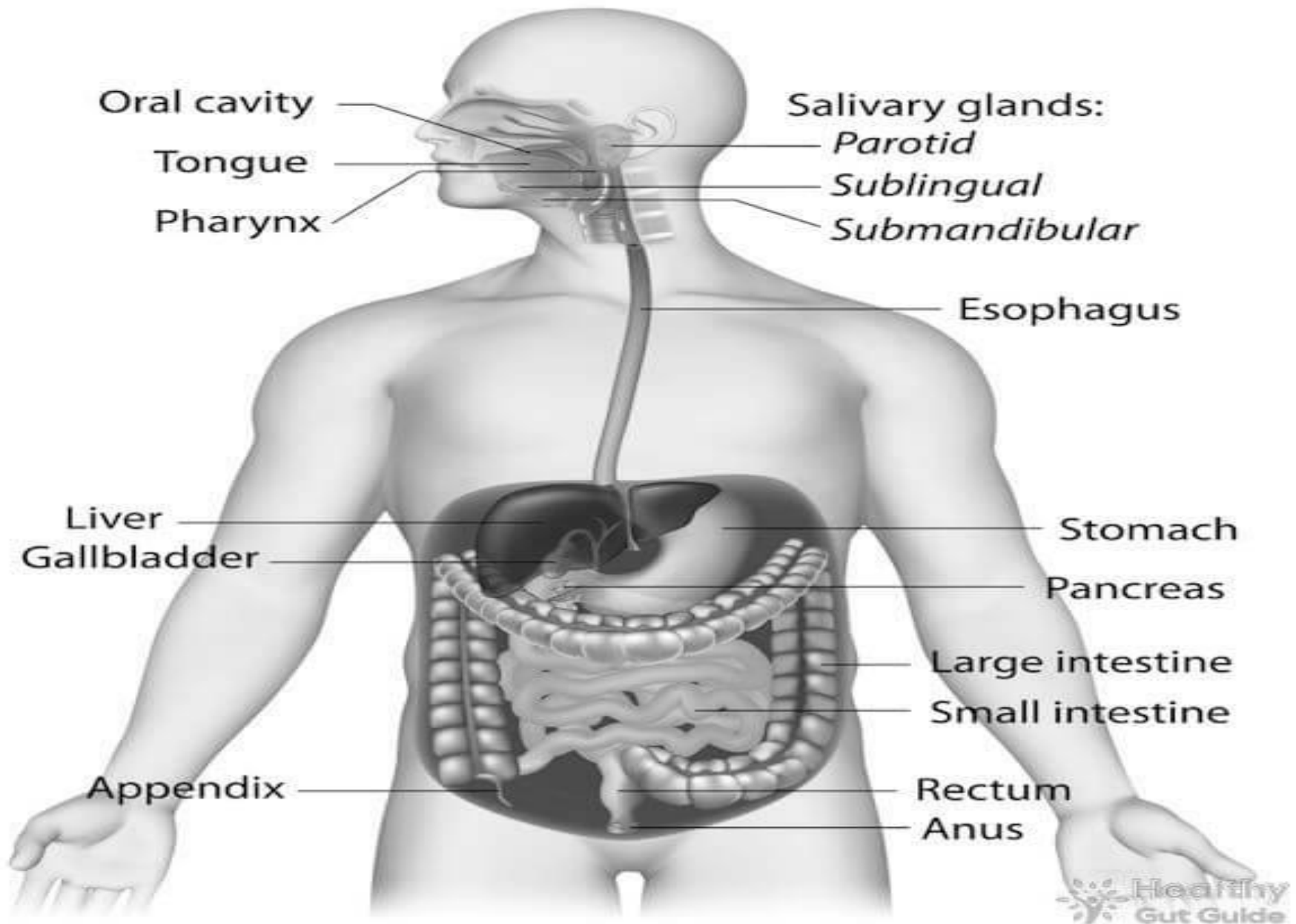
# *Outlines*

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# Introduction

**The digestive system consists of connected organs that help the body break down and absorb nutrients from food. Digestive problems may affect the mouth, esophagus, stomach, small intestine, large intestine, rectum, and/or anus. Digestive symptoms are common and can occur anytime throughout a person's life. However, nearly 40 percent of older adults report at least one digestive disorder symptom per year. Medical guidance is crucial in managing digestive problems.**

# The Digestive System



# **Structures & Function of digestive system.**

## **Mouth:**

The mouth is the beginning of the digestive tract; and, in fact, digestion starts here when taking the first bite of food.

## **Esophagus:**

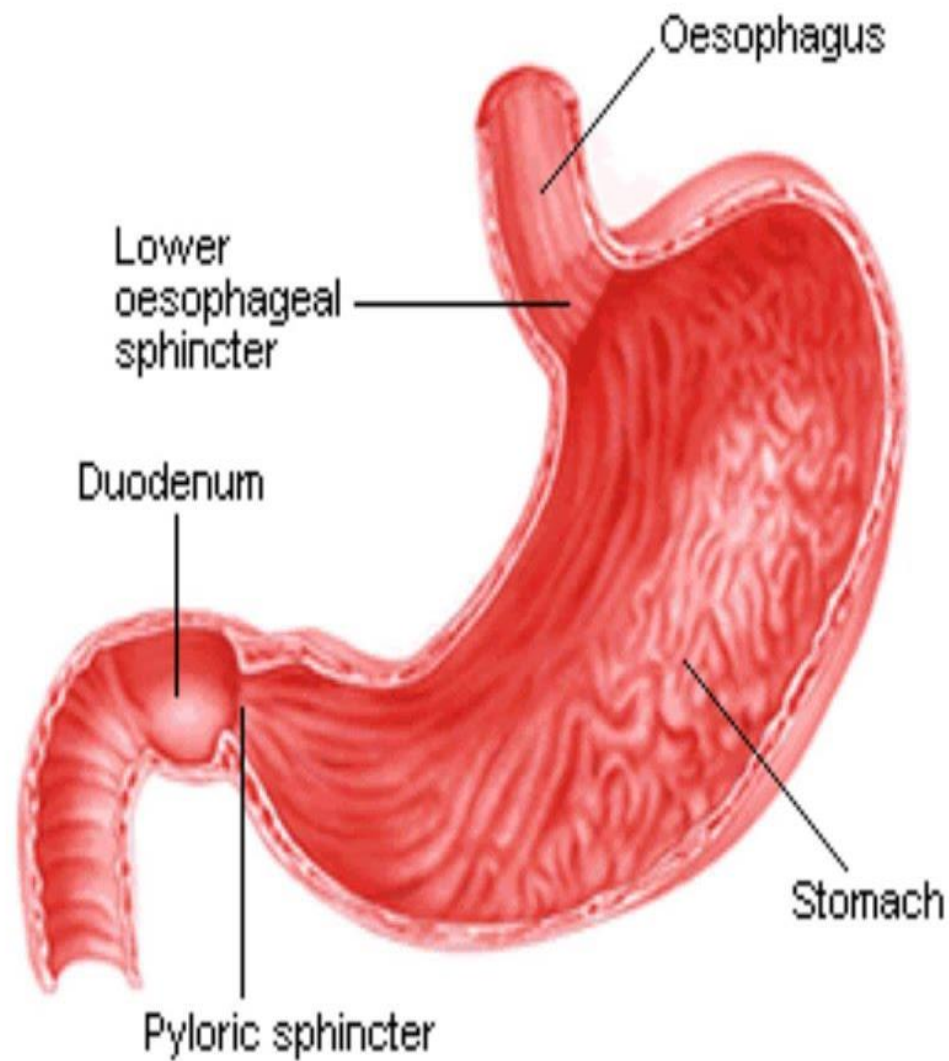
Located in your throat near your trachea (windpipe), the esophagus receives food from your mouth when you swallow.

- **Stomach:**

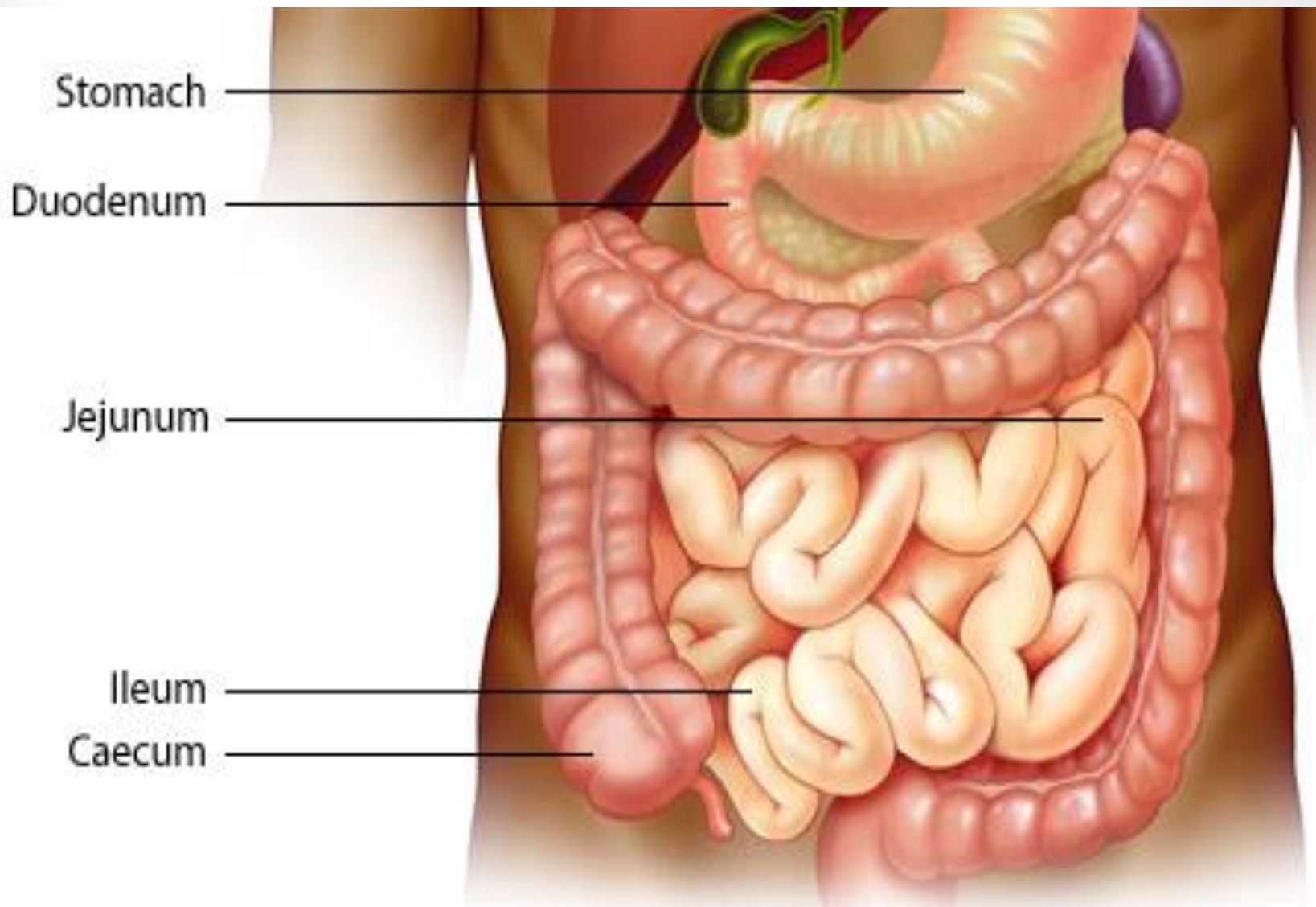
The stomach is a hollow organ, or "container," that holds food while it is being mixed with enzymes that continue the process of breaking down food into a usable form.

- **Small intestine:**

Made up of three segments — the duodenum, jejunum, and ileum — the small intestine is a 22-foot long muscular tube that breaks down food using enzymes released by the pancreas and bile from the liver.







## **Pancreas**

The pancreas secretes digestive enzymes into the duodenum, the first segment of the small intestine. These enzymes break down protein, fats, and carbohydrates.

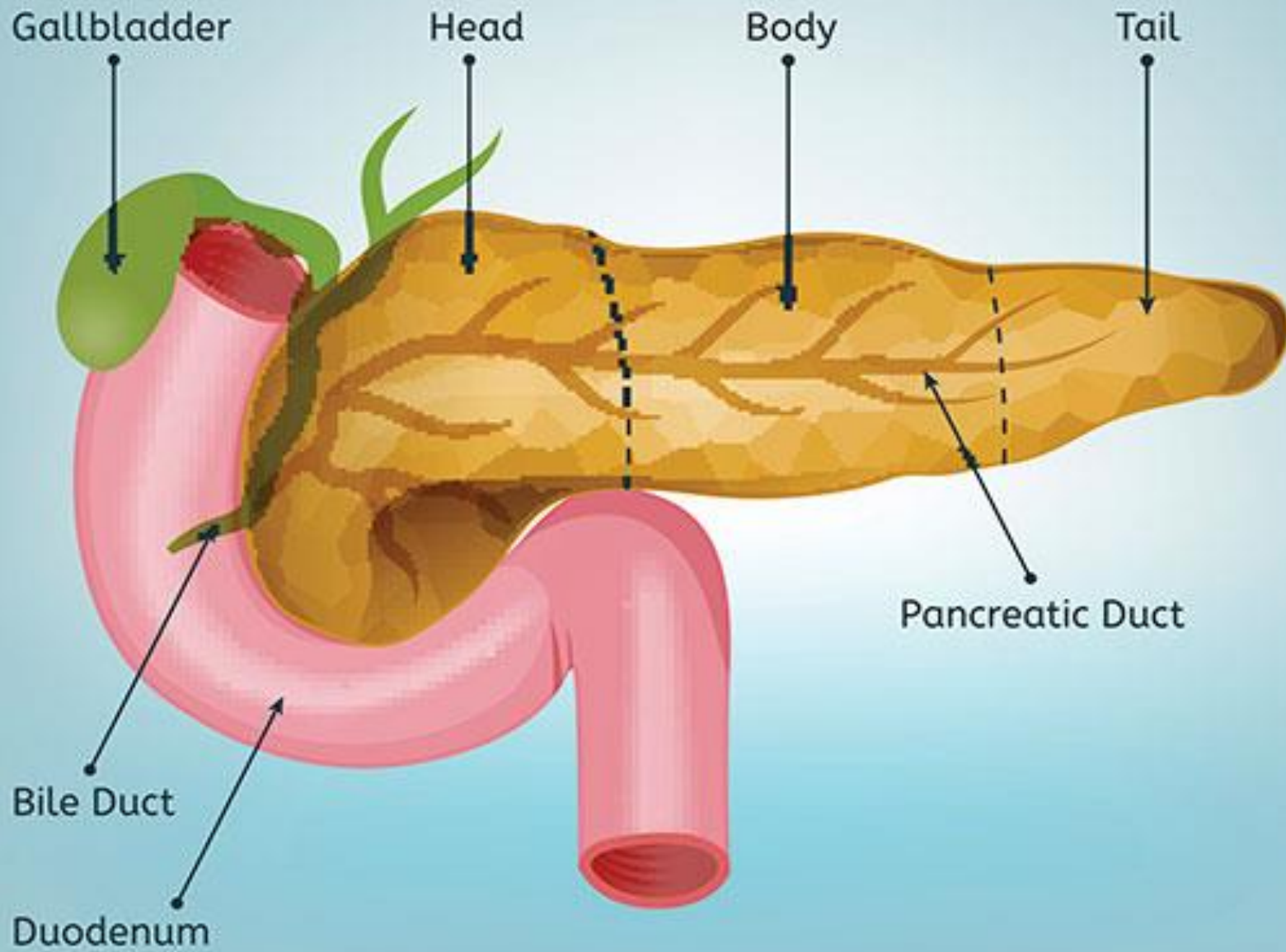
## **Liver**

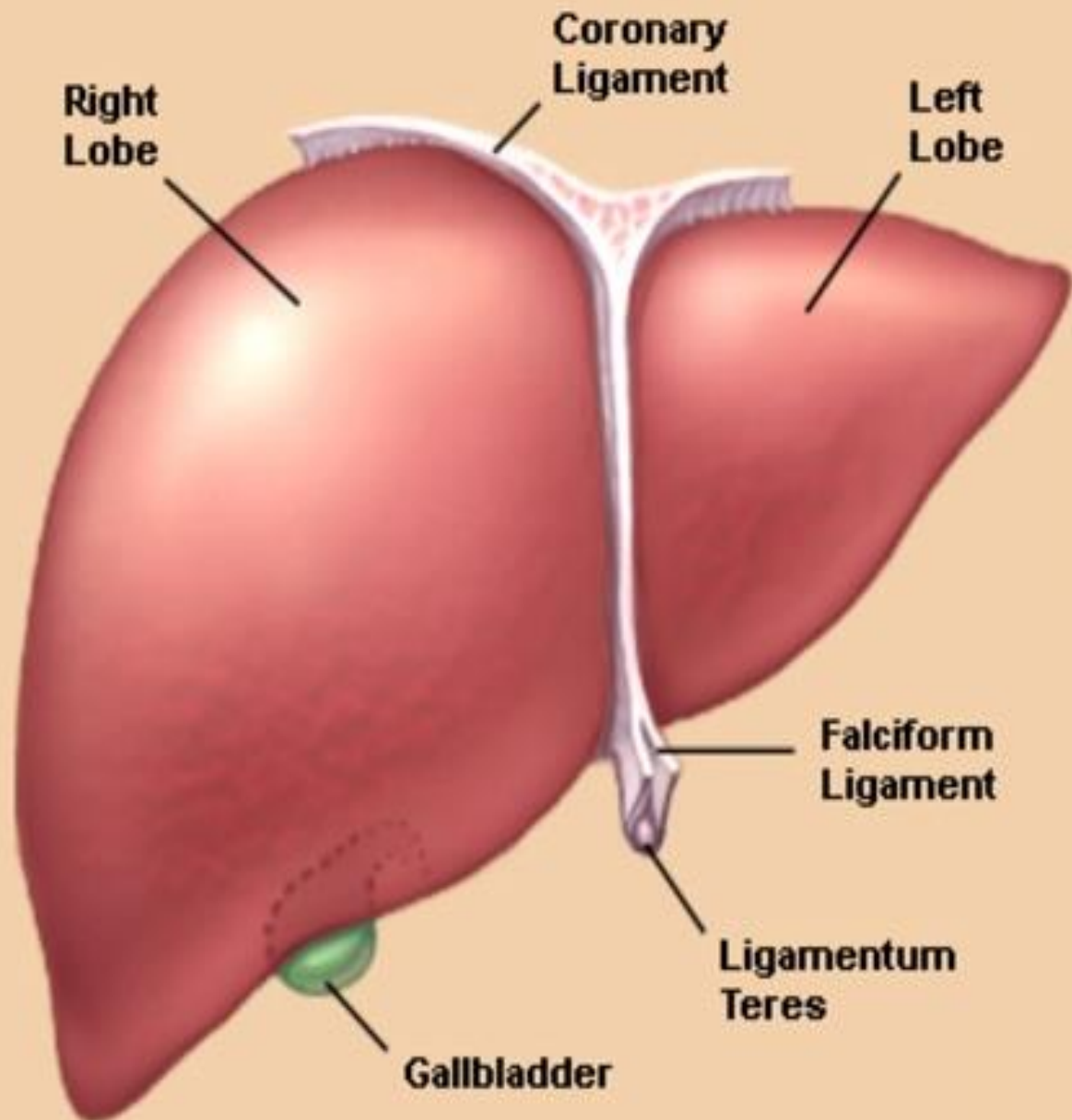
The liver has multiple functions, but its main function within the digestive system is to process the nutrients absorbed from the small intestine.

## **Gallbladder**

The gallbladder stores and concentrates bile, and then releases it into the duodenum to help absorb and digest fats.

# Pancreas





## **Colon (large intestine)**

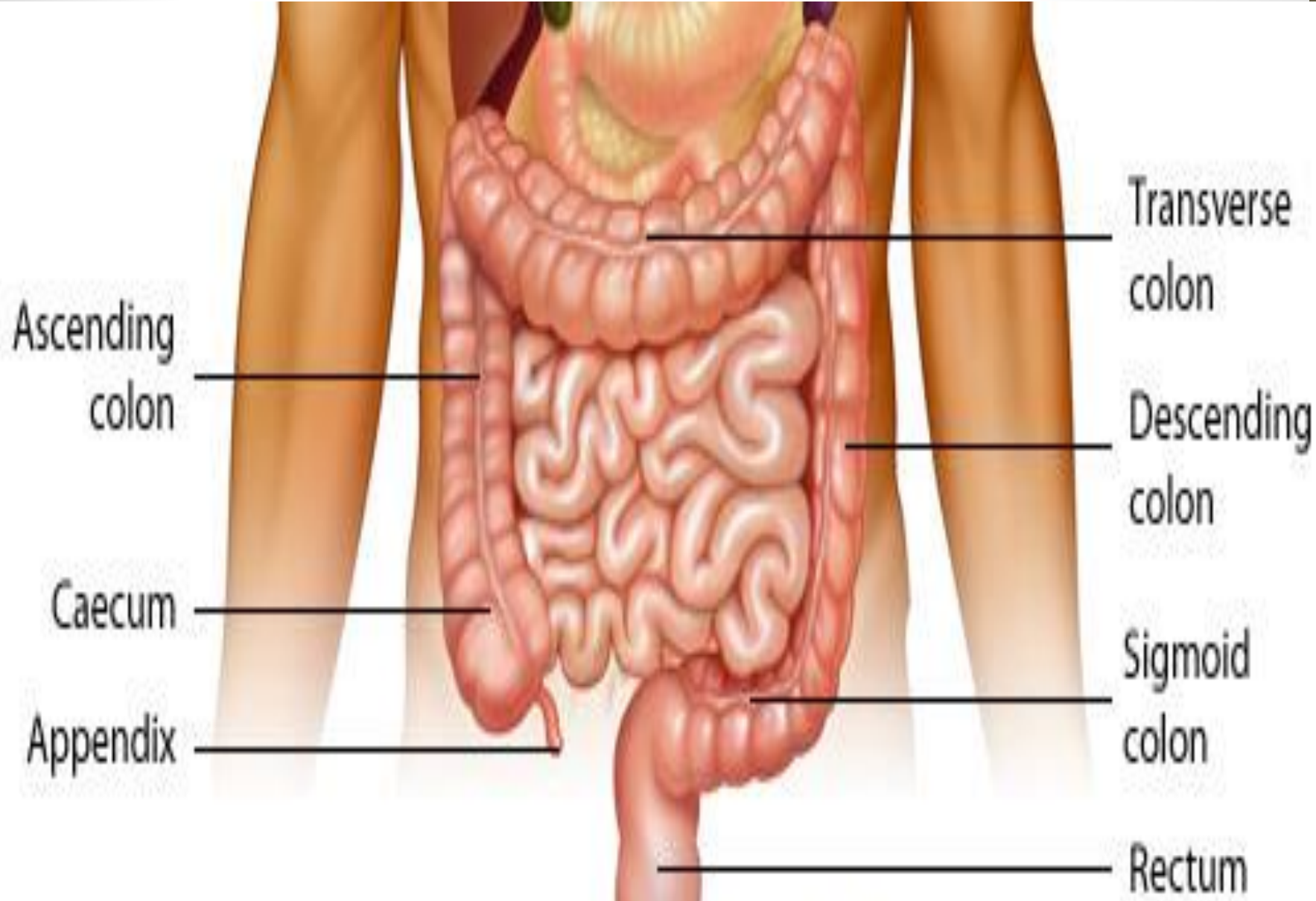
The colon is a 6-foot long muscular tube that connects the small intestine to the rectum.

## **Rectum**

The rectum (Latin for "straight") is an 8-inch chamber that connects the colon to the anus. It is the rectum's job to receive stool from the colon, to let the person know that there is stool to be evacuated, and to hold the stool until evacuation happens.

## **Anus**

The anus is the last part of the digestive tract. It is a 2-inch long canal consisting of the pelvic floor muscles and the two anal sphincters (internal and external).



Ascending  
colon

Transverse  
colon

Descending  
colon

Caecum

Sigmoid  
colon

Appendix

Rectum

- **Age related changes in digestive system.**

- **Esophagus:**

- With age, the strength of esophageal contractions and the tension in the upper esophageal sphincter decrease (called presbyesophagus), but the movement of food is not impaired by these changes.

- **Age related changes in digestive system.**
- **Stomach:**
- With age, the stomach lining's capacity to resist damage decreases, which in turn may increase the risk of peptic ulcer disease, especially in people who use aspirin and other non steroidal anti-inflammatory drugs (NSAIDs). Also with age, the stomach cannot accommodate as much food (because of decreased elasticity), and the rate at which the stomach empties food into the small intestine decreases. However, these changes typically do not cause any noticeable symptoms. Aging has little effect on the secretion of stomach juices such as acid and pepsin, but conditions that decrease acid secretion, such as atrophic gastritis become more common.



- **Age related changes in digestive system.**
- **Small intestine:**

Aging has only minor effects on the structure of the small intestine, so movement of contents through the small intestine and absorption of most nutrients do not change much. However, lactase levels decrease, leading to intolerance of dairy products by many older adults. Excessive growth of certain bacteria becomes more common with age and can lead to pain, bloating, and weight loss. Bacterial overgrowth may also lead to decreased absorption of certain nutrients, such as vitamin B12, iron, and calcium.

- **Pancreas, liver, and gallbladder:**

- With age, the pancreas decreases in overall weight, and some tissue is replaced by scarring (fibrosis). However, these changes do not decrease the ability of the pancreas to produce digestive enzymes and sodium bicarbonate. As the liver and gallbladder age, a number of structural and microscopic changes occur

- **Large intestine and rectum:**

- The large intestine does not undergo much change with age. The rectum does enlarge somewhat. Constipation becomes more common which is caused by many factors:
- A slight slowing in the movement of contents through the large intestine
- A modest decrease in the contractions of the rectum when filled with stool
- More frequent use of drugs that can cause constipation
- Often less exercise or physical activity

- **Common Disorders of GIT**
- **I-Disorders of the Oral cavity**
- **1-Xerostomia:** (dry mouth) It is common complaint with advancing age. Because moisture in the mouth is important for chewing, swallowing, tasting , and speaking. Xerostomia can lead to inadequate diet, dental caries and decreased social interaction.

# Common Disorders of GIT

## I-Disorders of the Oral cavity

**\*Major causes of dry mouth are ;**

-Obstructive nasal diseases that promote mouth breathing.

-Drugs (diuretic antidepressant antipsychotics), vitamin B complex deficiency, dehydration.

Diabetes, radiotherapy, anxiety, and fear

- **Common Disorders of GIT**
- **I-Disorders of the Oral cavity**
- **2-Oral lesion:** The incidence of malignant lesions of oral cavity rises sharply with age. Important risk factors include smoking and alcohol consumption.
- Sun exposure is another risk factors for lesion of the lip.

- **Common Disorders of GIT**
- **I-Disorders of the Oral cavity**
- **3- Oral Malodor:** It is a common problem in frail, dependent persons. The most effective treatment employed tooth brushing, flossing, tongue cleaning, and use of antimicrobial mouth rinse.
- **4- Caries and Tooth loss:** It may be common with age; however, it is not considered normal or inevitable. Inflammation produces destruction of the bone that support the teeth, resulting in the progressive loosening and ultimate shedding of teeth.

- **II- Disorders of the Esophagus:**

- Three esophageal disorders that are more common among older people are dysphagia, hiatus hernia, and carcinoma.

- **Dysphagia:** The passage of food through the esophagus is impaired. The patient typically reports that food is “stuck in the throat”. The two basic causes of dysphagia are esophageal motility disorders and obstruction.



- Gastroesophageal reflux disease (GERD) is the reflux of gastric content through the lower esophageal sphincter (LES) into esophagus or oropharynx. The symptoms are (heartburn, and acid regurgitation).

- **II- Disorders of the Esophagus:**
- Management of GERD the older individuals often require more acid suppression for inflamed esophagus to heal. Non-pharmacological measures that can improve LES resting pressure are weight loss; low fat; low-glucose; high-protein diet; avoidance of mint; chocolate; alcohol, and tobacco.

- **2.Hiatal Hernia:** Is the protrusion of the stomach into the thoracic cavity through the esophageal opening in the diaphragm.
- **Risk factors:**
- Increased pressure within the abdomen caused by:  
Heavy lifting or bending over
- Frequent or hard coughing , Hard sneezing
- Pregnancy and delivery, Violent vomiting
- Straining with constipation , Obesity (extra weight pushes down on the abdomen increasing the pressure). Use of the sitting position for defecation, Heredity , Stress, Smoking , Drug use, such as cocaine, Diaphragm weakness

## • **Treatment of Hiatal Hernia :**

- -Surgical option may be advised.(laparoscopic surgery)
- -Decrease intra-abdominal pressure that can result from wearing restrictive clothing.
- - Avoid lifting or straining.
- - Elevate the head of their bed 15 to 20 cm .
- -Lose weight if obese; eat small frequent meals; avoid eating before going to bed.
- -Smoking and alcohol consumption are discouraged because they promote reflux and impair healing.

- **III –Disorders of the stomach:**
- **Gastritis and peptic ulcer:**
- Is the most common ulcer of an area of the gastrointestinal tract that is usually acidic and thus extremely painful? It is defined as mucosal erosions equal to or greater than 0.5 cm.

- **III –Disorders of the stomach:**
- **Gastritis and peptic ulcer:**
- The common cause of gastritis is helicobacter infection of gastric mucosa, which causes inflammation, alteration in cell function, metaplasia , and cell death.
- Both gastric and duodenal ulcer can occur with aging but gastric ulcers are common

- **Symptoms:** Symptoms of a peptic ulcer can be:
- Abdominal pain ,bloating and abdominal fullness;
- Waterbrash (rush of saliva after an episode of regurgitation to dilute the acid in esophagus
- Nausea, and vomiting;
- loss of appetite and weight loss;
- Hematemesis (vomiting of blood); this can occur due to bleeding directly from a gastric ulcer, or from damage to the esophagus from severe/continuing vomiting.
- Rarely, an ulcer can lead to a gastric or duodenal perforation, which leads to acute peritonitis. This is extremely painful and requires immediate surgery

- **Medical treatment of peptic ulcers:**
- Dietary modifications, including avoidance of alcohol, caffeine and other foods that tend to irritate the problem or increase hydrochloric acid production. Avoidance of tobacco, which stimulates acid release
- Administration of antacids to reduce acidity. Administration of histamine (H<sub>2</sub>)-blocking agents, such as cimetidine and ranitidine , to prevent ulcer formation or to promote ulcer healing
- Stress reduction programs.



- **2. Atrophic gastritis and pernicious anemia:**
- Type A gastritis is associated with an autoimmune process. Parietal cells are destroyed, and production of hydrochloric acid and intrinsic factor fall. Without adequate intrinsic factors, vitamin B 12, which is required for the growth and maturation of red blood cells, is not absorbed. Affected individuals develop pernicious anemia and neurological complication . Vitamin B 12 deficiency is treated with regular injection of the vitamin.

- **IV-Disorders of the small intestine:**
- **Malabsorptive disorders:**
- Malabsorption is a state arising from abnormality in absorption of food nutrients across the gastrointestinal (GI) tract.
- Most cases of malabsorption result from bacterial overgrowth syndrome, chronic pancreatitis, or celiac disease.

- **Symptoms of Malabsorption disorders:**
- Symptoms can be intestinal or extra-intestinal - the former predominates in severe malabsorption.
- Diarrhea, Weight loss can be significant despite increased oral intake of nutrients.
- Growth retardation, failure to thrive, delayed puberty in children, Swelling or oedema from loss of protein , Anemia, commonly from vitamin B12, folic acid and iron deficiency presenting as fatigue and weakness.
- Muscle cramp from decreased vitamin D, calcium absorption. Also lead to osteomalacia and osteoporosis , Bleeding tendencies from vitamin K and other coagulation factor deficiencies.

- **Disorders of large Intestine**

- **Diverticulosis / Diverticulitis:**

- Diverticula : are small pouches or sacs that develop because of weaknesses in the intestinal mucosa. Most people with diverticula experience no symptoms, no treatment unless symptoms occur. If rectal bleeding occur, medical intervention is necessary to determine the source.

- Diverticulitis is a common digestive disease particularly found in the large intestine. Diverticulitis develops from diverticulosis, which involves the formation of pouches (diverticula) on the outside of the colon. Diverticulitis results if one of these diverticula becomes inflamed.
- This inflammation may result in bowel obstruction, perforation, or abscess formation.

- **Signs and symptoms:**
- The most common symptom of diverticulitis is abdominal pain
- Patients often present with the classic triad of left lower quadrant pain, fever, and leukocytosis (an elevation of the white cell count in blood tests).
- Patients may also complain of nausea or diarrhea; others may be constipated.
- Less commonly, an individual with diverticulitis may present with right-sided abdominal pain.

- The most common sign is tenderness around the left side of the lower abdomen.
- If infection is the cause, then nausea, vomiting, fever, cramping, and constipation may occur as well.
- The severity of symptoms depends on the extent of the infection and complications.
- Diverticulitis may worsen throughout the first day, as it starts as small pains and/or diarrhea, and may slowly turn into vomiting and sharp pains.

- **Treatment of Diverticulitis:**
- -Oral intake of food is restricted and intravenous fluids are administered to give the diseased area an opportunity to “rest”.
- -Surgical correction, including bowel resection or colostomy, may be required if conservative medical treatment is unsuccessful.



## **VI. Changing in Bowel Habits:**

**1.Consipation:** (NANDA) Defines constipation as a” decrease in the normal frequency of defecation accompanied by difficult or incomplete passage of stool and/or passage of excessively hard dry stool”

**Risk factors:** for functional constipation in the older adult include:

Being an older adult

Being a woman

Being dehydrated

Eating a diet that's low in fiber

Getting little or no physical activity

Taking certain medications, including sedatives, narcotics or certain medications to lower blood pressure

- **Disorders of the liver:**
- **Hepatitis** There are four types of viral hepatitis: A,B,C, and D.
- -Acute hepatitis A virus(HAV) infection is rare in older person.
- Older persons with chronic HBV are generally not infective.
- -Hepatitis C is the most common, probably account for most post-transfusion.

- **Disorders of the liver:**
- Alcoholic liver disease and cirrhosis (ALD) represent the toxic effects of alcohol on the liver
- -Cirrhosis is the chronic condition marked by degeneration and destruction of hepatic parenchymal cells.
- -Nutritional support with IV glucose and vitamins is recommended.
- high protein diet is advised for long term nutrition.

- **IX. Disorders of gallbladder ;**
- **Cholelithiasis** ( gallstones) is common in older adults, affecting as many as half of persons over 80 years of age.
- **Symptoms :**
- -Biliary pain is the most common manifestation. It is located in the epigastrium and right hypochondrium , sometime radiated around the interscapular region.
- -Older peoples with cholelithiasis have common bile duct stones.
- Replacement of fluid and electrolytes.
- -Pain management , correction of metabolic imbalances, and antimicrobial therapy.

- **Nursing care of constipation:**
- **The assessment include:**
- Activity level, usual bowel pattern, history of bowel disease, characteristics of constipation, medication include laxative use, Finding in rectal condition, bowel sounds, hyderation, diet amount of fiber; special diet, and beliefs about normal bowel function.

- **B. Nursing diagnosis of GIT:**

- Chronic or acute pain related to oral lesions, GIT disorders, malignancy.
- -Constipations related to neuromuscular impairment, intestinal obstruction, painful defecation, drug side effect, immobility, inadequate intake of fluids and fiber, metabolic problems.
- Perceived constipation related to inappropriate use of aids to elimination based on custom or lack of information .

- **B. Nursing diagnosis of GIT:**

- Diarrhea related to gastrointestinal disorders, infectious process, adverse effects of laxatives or other drugs.
- Bowel incontinence related to neuromuscular impairment, diarrhea, fecal impaction, cognitive impairment, inability to access toilet.
- Deficient fluid volume related to abdominal cancer, hemorrhage, diarrhea.
- Risk for deficient fluid volume related to decreased fluid intake, drug effects, inability to obtain fluids because immobility, abnormal loss of fluid through diarrhea or vomiting.
- Knowledge deficit of oral hygiene and dental care, diet, nutrition, self medication
- Altered nutrition, less than body requirements, related to chewing difficulties, anorexia, difficulty in procuring or preparing food.

- **Nursing intervention**
- **Interventions to promote regular bowel elimination**
- Older adults may need education about normal bowel function. Well-established laxative dependence may not be reversible requiring continued regular laxative therapy. When constipation has been confirmed treatment should begin with non-pharmacological intervention it include:
  - Practice good oral hygiene ; have regular dental care.
  - Salivary substitutes are available for dry mouth.
  - Seek treatment promptly for lesions in the mouth.



- **Nursing intervention**
- **Interventions to promote regular bowel elimination**
- Use a powered toothbrush with rotating action.
- Avoid smoking and alcohol.
- Dietary fiber, fluid 1500 to 2000 ml/day, and physical activity may reduce constipation.
- Many prescription and over-the-counter drugs can cause diarrhea or constipation, and dry mouth.
- The demonstrated value of fiber in lowering serum cholesterol and improve glycemic control
- To increase dietary fiber encourage individual to consume whole-grain bread products, fresh fruits, vegetables, and seeded berries.

- **Intervention to treat fecal incontinence**

- Key element in the management of overflow fecal incontinence is ongoing monitoring of bowel elimination including rectal examination.
- Enemas until no further response occurs, followed by lactulose.
- If incontinence is functional, the basic problem (mobility, dexterity, communication) must be identified and plan is designed.
- Dementia-related fecal incontinence prompted toileting should be used. If this is not successful try scheduled toileting with daily suppositories.
- Persons with fecal impaction and their families need guidance on skin care, odor control, and incontinence products.

Thank

you

