

GASTROINTESTINAL

NURSING STUDY NOTES

Gastrointestinal nursing bundle



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STUDY ANYWHERE

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GI SYSTEM OVERVIEW

MAIN FUNCTIONS

- ① Digest and absorb ingested nutrients
- ② Excrete waste products of digestion

TYPES OF DIGESTION

MECHANICAL

Physical breakdown of food into smaller pieces

AKA CHEWING

CHEMICAL

Chemical breakdown of food by enzymes found in saliva & pancreas

UPPER GI TRACT FUNCTIONS

MOUTH / ORAL CAVITY

Ingests & breaks down food

PHARYNX & ESOPHAGUS

Carries food from mouth to stomach

STOMACH

- Storage site until passed to small intestine
- Food mixes with gastric acid to form chyme (paste)
- Absorbs fat-soluble minerals

LOWER GI TRACT FUNCTIONS

SMALL INTESTINE

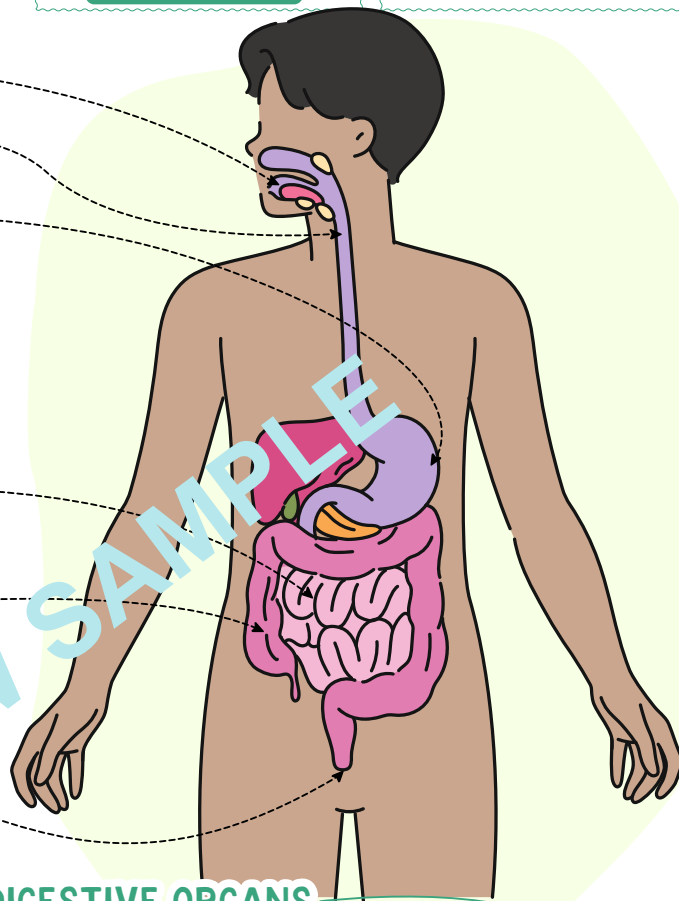
- Digests contents from stomach
- Absorption of water & electrolytes

LARGE INTESTINE

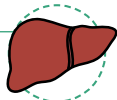
- Absorption of water & electrolytes
- Storage & elimination of waste

ANUS

Excretion of waste

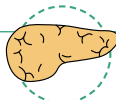


ACCESSORY DIGESTIVE ORGANS



LIVER

- Metabolism of fats, proteins & carbs
- Detoxification
- Regulates blood sugar levels
- Regulates blood clotting



PANCREAS

- Secretes glucagon and insulin
- Secretes enzymes to break down foods

LIPASE → digests **fats**
AMYLASE → digests **carbs**
PROTEASE → digests **protein**



GALL-BLADDER

Stores bile produced by the liver

BILE:

- Digests fatty foods
- Absorbs fat soluble vitamins
- Carries waste out of the liver

DIGESTION PROCESS

1 INGESTION	2 PROPULSION	3 MECHANICAL DIGESTION	4 CHEMICAL DIGESTION	5 ABSORPTION	6 DEFECTION
Act of ingesting or consuming something orally	Movement of food along the digestive tract through peristalsis	Physically breaking down food substances into smaller particles	Food molecules broken down with enzymes	Products of digestion are absorbed by the blood to be supplied to rest of body	Elimination of undigested material from the body

AKA EATING

→ Involuntary contractions that move food through digestive tract

GI SYSTEM ASSESSMENT

TYPICAL ASSESSMENT ORDER:

- I** Inspection
- P** Palpation
- P** Percussion
- A** Auscultation

GI-ASSESSMENT:

- I** Inspection
- A** Auscultation
- P** Percussion
- P** Palpation

Order is changed to avoid altering bowel sounds

TO PREPARE FOR ASSESSMENT ASK PATIENT TO:

- ★ Empty bladder
- ★ Lie in supine position with pillow under the head

1 FOCUSED GI HISTORY

ASK THE PATIENT ABOUT ANY:

- Change in appetite
- Weight gain or loss
- Difficulty swallowing (dysphagia)
- Intolerance to certain foods
- Nausea and vomiting
- Change in bowel habits
- Abdominal pain
- Diarrhea or constipation

Could be early sign of **MALIGNANCY OR OTHER GI DISORDER**

2 INSPECTION

ASSESS FOR:

- Bulges
- Masses
- Hernias
- Ascites
- Enlarged veins
- Spider nevi

3 AUSCULTATION

SEQUENCE OF QUADRANTS

Start in RLQ & move **clockwise**



Auscultate for 1 full minute to determine if:

- NORMAL** 5-30 bowel sounds per minute
- HYPOACTIVE** <5 bowel sounds per minute
- HYPERACTIVE** >30 bowel sounds per minute
- ABSENT** No bowel sounds

COULD MEAN:

- ▶ Ileus
- ▶ Peritonitis
- ▶ Constipation
- ▶ Ischemic bowel disease

Must listen for at least **5 MINUTES** to confirm absent bowel sounds

COULD MEAN:

- ▶ Bowel obstruction
- ▶ Malabsorption
- ▶ Infectious enteritis
- ▶ GI bleeding

PERCUSSION

DULLNESS

- Soft, muffled, thud-like tone
- Heard over fluid & solid structures (full bladder or liver)

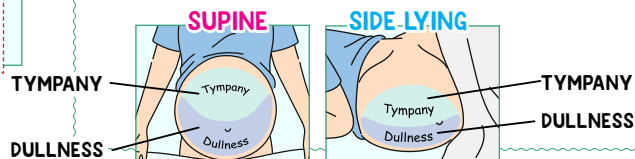
Hear elsewhere may indicate tumor or mass

TYMPANY

- High pitched, drum-like sound
- Heard over air filled structures (large intestine)

IF ASCITES PRESENT:

Will have shifting dullness/ tympany with position change



5 PALPATION

- Use fingers of dominant hand
- Use light, gentle, and dipping motions
- Warm the palms before
- Palpate clockwise

LIGHT PALPATION (1-2 CM)

Should feel soft with no rigidity or pain

DEEP PALPATION (4-5 CM)

Assess for tenderness, lumps, masses

CONTRAINDICATED IF SUSPECTED:

- Abdominal aortic aneurysm
- Appendicitis
- Polycystic kidney disease
- Kidney transplant
- Tumor

No tenderness should be felt on **LIGHT** or **DEEP** palpation

DIAGNOSTICS

GUAIAAC TEST: stool sample to test for blood

COLONOSCOPY: Endoscope inserted through anus to visualize colon

ESOPHAGOGASTRODUODENOSCOPY (EGD): Endoscope inserted through mouth to visualize esophagus, upper GI tract, and duodenum

SMALL BOWEL SERIES: X-Rays taken after ingestion of contrast agent/barium to obtain clear picture of small bowel

CHOLECYSTITIS

WHAT IS IT?

Inflammation of the gall bladder

CHOLE CYST ITIS

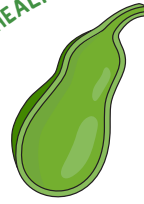
Bile Membranous sac Inflammation

The gall bladder is connected to the liver & stores **BILE**

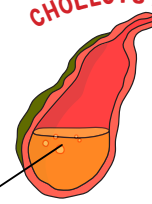
→ BILE HELPS:

- ★ Digests fatty foods
- ★ Absorb fat soluble vitamins
- ★ Carry waste (including bilirubin) out of liver

HEALTHY GALL BLADDER



CHOLECYSTITIS



Gall bladder becomes inflamed or blocked and bile cannot exit properly

If inflammation becomes severe enough can lead to **HEPATITIS** (liver inflammation) OR **PERFORATION** which can lead to **SEPSIS**

RISK FACTORS

REMEMBER THE **5 F'S**

- F** Family History
- F** Female
- F** Fat (obesity)
- F** Forty or older
- F** Fertile (pregnant)

DIAGNOSTICS

- **HIDA SCAN**: assess for abnormal flow in gall bladder
- **ABDOMINAL US**: show thickening in gall bladder wall
- **CT SCAN**: not used
- **ERCP** (Endoscopic Retrograde Cholangiopancreatography): Diagnostic/ treatment procedure to visualize gall bladder with endoscope & x-rays after admin of dye

SYMPTOMS

- Severe RUQ/epigastric pain
- Nausea/ vomiting
- Bloating
- Fever
- Steatorrhea (fatty stools)
- Tachycardia
- Positive Murphy's Sign

WILL GET WORSE



Breathing stops upon RUQ palpation while in supine position

TREATMENT

- Antibiotics for infection
- Antiemetics for nausea
- **Cholecystectomy**: removal of gall bladder
- **ERCP**: Diagnostic & remove gall stones
- **T-tube**: placed in common bile duct to drain bile
- **Lithotripsy**: non-surgical procedure to break up stones

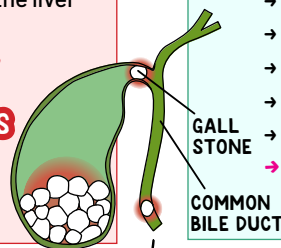
SIGNS OF BILIARY OBSTRUCTION

If bile duct gets blocked, bile cannot leave the gall bladder, causing bile to back up into the liver

SYMPTOMS

- ▶ Jaundice
- ▶ Clay-colored stool
- ▶ Dark colored urine
- ▶ Pruritis
- ▶ Elevated AST/ALT & bilirubin

Most commonly caused by **GALL STONES**



Gall stones are formed due to impaired metabolism of bile & get stuck in bile duct causing **INFLAMMATION**

NURSING INTERVENTIONS

- NPO preoperatively
- NGT insertion (for gastric decompression)
- IV fluids for hydration
- Monitor VS & electrolytes
- Monitor T-tube site & drainage
- **NO FATTY FOODS**