King Saud University

Collage of Nursing

Medical Surgical Nursing depart

Application of Health Assessment

NUR 225

Module Seven

Physical examination of gastrointestinal and urinary system

Gastrointestinal & Urinary examination

1- Obtain health history related to gastrointestinal disorders.

2- In preparation for examination of the abdomen, the patient should:

- Ask the client to empty the bladder before beginning the examination to eliminate bladder distention and interference with an accurate examination .

- Instruct the client to remove clothes and to put on a gown .

- Help the client to lie supine with the arms folded across the chest or resting by the sides . **(Raising arms above the head or folding them behind the head will tense the abdominal muscles).**

- A flat pillow may be placed under the client's head for comfort.

- Slightly flex the client's legs by placing a pillow or rolled blanket under the client's knees to help relax the abdominal muscles.

- Drape the client with sheets so that the abdomen is visible from the lower rib cage to the pubic area.

- Instruct the client to breathe through the mouth and to take slow, deep breaths. This promotes relaxation.

- Before touching the abdomen , ask the client about painful or tender areas. Always assess these areas at the end of the examination .

- Watch the patient face for signs of discomfort during the examination .

- Perform the examination in the following order inspection, auscultation, percussion, and palpation .

- Adjust the bed level as necessary throughout the examination and approach the client from the right side.

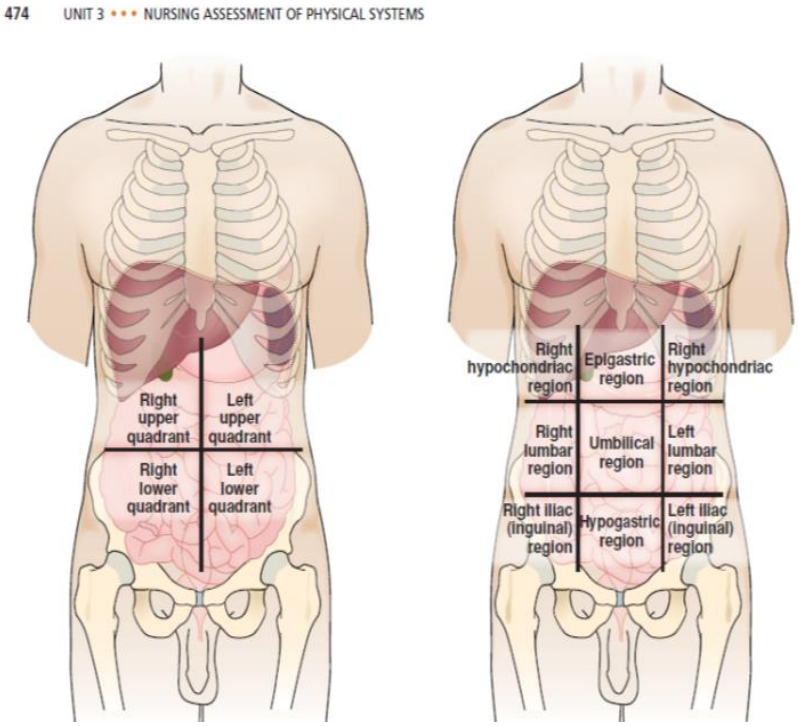
- Use tangential lighting, if available for optimal visualization of the abdomen .

- Warm hands are essential for the abdominal examination. (**Cold hands cause the client to tense the abdominal muscles**)

3- Abdominal Quadrants :

- The abdomen can be described as having four quadrants: the right upper quadrant (RUQ) , right lower quadrant (RLQ) , Left lower quadrant (LLQ) and left upper quadrant (LUQ) .

- Another method divides the abdomen into nine regions : epigastric, umbilical, and hypogastric or suprapubic .



4- Prepare equipment Needed :

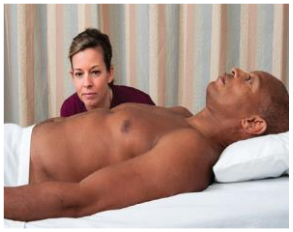
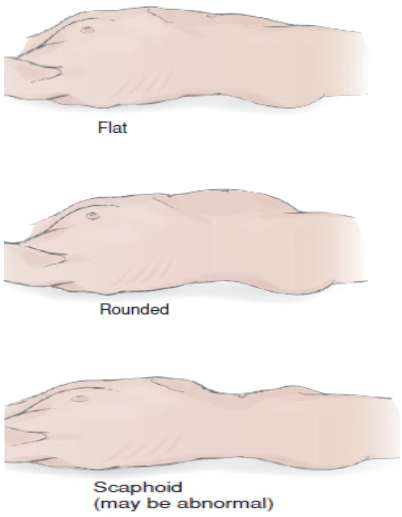
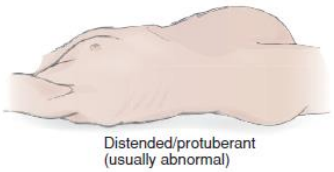
- Small pillow or rolled blanket

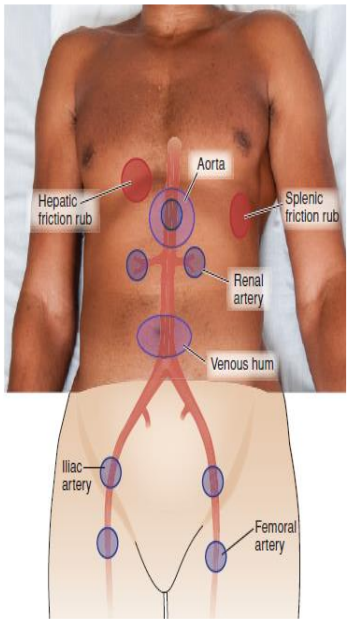
- Centimeter ruler

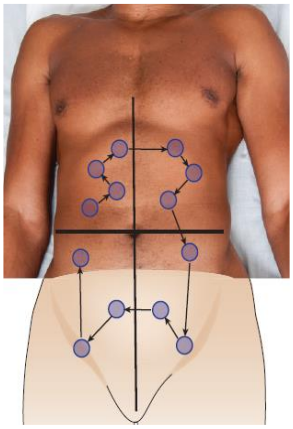
- Stethoscope (warm the diaphragm and bell)

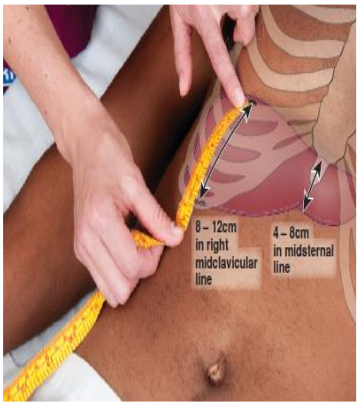
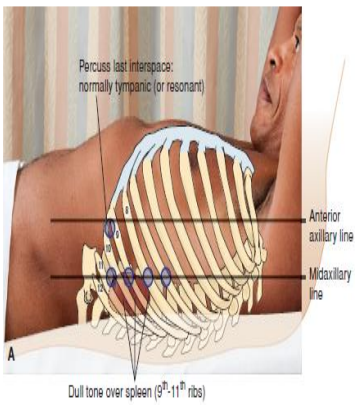
- Marking pen

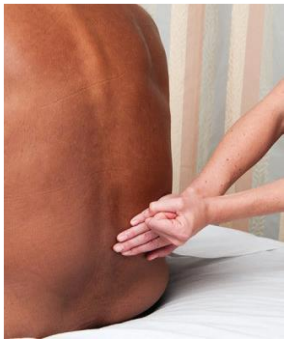
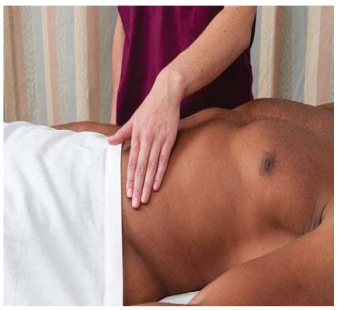
Technique	Normal findings	Abnormal findings
A-Inspection		
- Observe the coloration of the skin.	Abdominal skin may be paler than the general skin tone.	Purple discoloration at the flanks indicates bleeding ,within the abdominal wall possibly from trauma to the kidneys, pancreas, or duodenum or from pancreatitis. The yellow hue of jaundice may be more apparent on the abdomen. Pale , Redness may indicate inflammation & Bruises .
- Note the vascularity of the abdominal skin	Scattered fine veins may be visible .	Dilated veins may be seen with cirrhosis of the liver, obstruction of the inferior vena cava, portal hypertension, or ascites
- Note any striae (stretch marks) .	New striae are pink or bluish in color , old striae are silvery, white, linear and uneven stretch marks from past pregnancies or weight gain	Dark bluish-pink striae are associated with Cushing's syndrome .
-Assess for lesions and rashes .	Abdomen is free of lesions or rashes flat or raised brown moles, however , are normal and may be apparent	Changes in moles including size, color, and border symmetry . Bleeding moles or petechiae (reddish or purple lesions) may also be abnormal .
- Inspect the umbilicus note color , location & contour.	Umbilical skin tones are similar to surrounding abdominal skin tones or even pinkish . Location : In midline a lateral line. Contour : inverted or protruding no more than 0.5 cm and is round .	Cullen's sign: A bluish or purple discoloration around the umbilicus (periumbilical ecchymosis) indicates intra-abdominal bleeding. A deviated umbilicus may be caused by pressure from a mass, enlarged organs, hernia, fluid, or scar tissue. An everted umbilicus is seen with abdominal distention , An enlarged everte umbilicus suggests umbilical hernia.

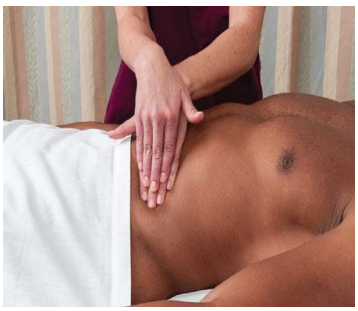
- Inspect abdominal contour. Sitting at the client's side, look across the abdomen at a level slightly higher than the client's abdomen. 	Abdomen is flat, rounded, or scaphoid  	A generalized protuberant or distended abdomen may be due to obesity, air (gas), or fluid accumulation. 
- Observe aortic pulsations	A slight pulsation of the abdominal aorta, which is visible in the epigastrium, extends full length in thin people .	Vigorous, wide, exaggerated pulsations may be seen with abdominal aortic aneurysm.
- Observe for peristaltic waves .	Normally, peristaltic waves are not seen, although they may be visible in very thin people as slight ripples on the abdominal wall.	Peristaltic waves are increased and progress in a ripple-like fashion from the LUQ to the RLQ with intestinal obstruction.
B- Auscultation		
Auscultate for bowel sounds. - Use the diaphragm of the stethoscope and make sure that it is warm before you place it on the client's abdomen. Apply light pressure or simply rest the stethoscope on a tender abdomen. Begin in the RLQ and proceed clockwise, covering all quadrants . - Listen for at least 5 minutes before determining that no bowel sounds are present and that the bowels are silent **CLINICAL TIP:** Bowel sounds may be more active in the RLQ .	A series of intermittent, soft clicks and gurgles are heard at a rate of 5 – 30 per minute.	- "Hyperactive" bowel sounds that are rushing, tinkling and high pitched may be abnormal indicating very rapid motility heard in early bowel obstruction gastroenteritis, diarrhea, or with use of laxatives. - "Hypoactive" bowel sounds indicate diminished bowel motility. Common causes include paralytic ileus following abdominal surgery. - Decreased or absent bowel sounds signify the absence of bowel motility.

- Confirm bowel sounds in each quadrant . Listen for up to 5 minutes (minimum of 1 minute per quadrant) to confirm the absence of bowel sounds . **CLINICAL TIP :** Bowel sounds normally occur every 5 to 15 seconds. - Note the intensity, pitch, and frequency of the sounds . **- Auscultate for vascular sounds:** Use the bell of the stethoscope (low- to listen for bruits pitched, murmur-like sound, pronounced BROO-ee) over the abdominal aorta and renal, iliac, and femoral arteries .  **- Listen for venous hum:** Using the bell of the stethoscope, listen for a venous hum in the epigastric and umbilical areas.	Bruits are not normally heard over abdominal aorta or renal, iliac, or femoral arteries . Venous hum is not normally heard over the epigastric and umbilical areas .	A bruit that indicate an aneurysm or renal arterial stenosis venous hum heard in the epigastric or umbilical.

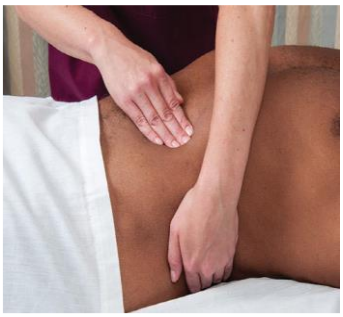
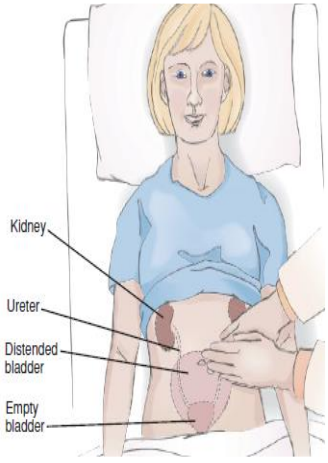
C- Percussion		
1- Percuss the abdomen for tones . - Lightly and systematically percuss all quadrants. - Abdominal percussion sequences may proceed clockwise or up and down over the abdomen .  2- Percuss the span of the liver by determining its lower and upper borders - To assess the lower border, begin in the RLQ at the mid-clavicular line (MCL) and percuss upward. Note the change from tympany to dullness. Mark this point: It is the lower border of liver dullness . 	Generalized tympany predominates over the abdomen because of air in the stomach and intestines. Dullness is heard over the liver and spleen .  The lower border of liver dullness is located at the costal margin to 1 to 2 cm below.	Accentuated tympany or hyperresonance is heard over a gaseous distended abdomen .

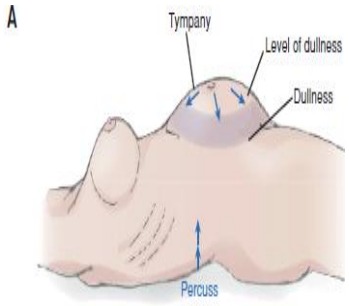
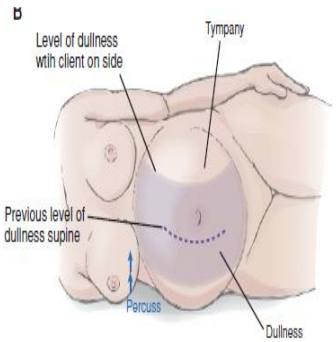
- To assess the upper border, percuss over the upper right chest at the MCL and percuss downward, noting the change from lung resonance to liver dullness. Mark this point It is the upper border of liver dullness .	The upper border of liver dullness is located between the left fifth and seventh intercostal spaces .	The upper border of liver dullness may be difficult to estimate if obscured by pleural fluid of lung consolidation .
- Measure the distance between the two marks, this is the span of the liver . 	The normal liver span at the MCL is 6- 12 cm (greater in men and taller clients, less in shorter clients)	Hepatomegaly, a liver span that exceeds normal limits (enlarged), is characteristic of liver tumors cirrhosis, abscess, and vascular engorgement . Atrophy of the liver is indicated by a decreased Span .
3- Percuss the spleen. Begin posterior to the left mid-axillary line (MAL), and percuss downward, noting the change from lung resonance to splenic dullness 	The spleen is an oval area of dullness approximately 7 cm wide near the left tenth rib and slightly posterior to the MAL . 	Splenomegaly is characterized by an area of dullness greater than 7 cm wide. The enlargement may result from traumatic injury, portal hypertension and mononucleosis .

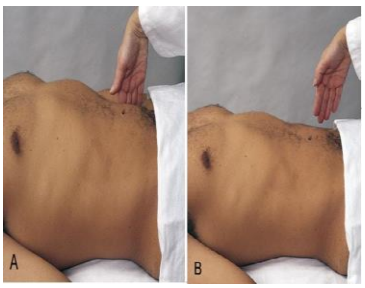
4- Perform blunt percussion on the kidneys. Placing your left hand flat against the costovertebral angle over the 12 ribs . Use the ulnar side of your right fist to strike your left hand.  5- Bladder Percussion Ask the patient to empty the bladder first. Place patient in a supine position. Start at the symphysis pubis and percuss upward toward the bladder and over it	Normally, no tenderness or pain is elicited or reported by the client. The examiner senses only a dull thud . You should hear tympanic sound	Tenderness or sharp pain elicited over the CVA suggests kidney infection (pyelonephritis), renal calculi or hydronephrosis . Full bladder produce dull sound
D- Palpation		
1- light palpation : Light palpation is used to identify areas of tenderness and muscular resistance. Using the fingertips, begin palpation in a non-tender quadrant, and compress to a depth of 1 cm in a dipping motion. Then gently lift the fingers and move to the next area . 	Abdomen is non - tender and soft There is no guarding.	Involuntary reflex guarding is serious and reflects peritoneal irritation. The abdomen is rigid .

2- Deep palpation : Deeply palpate all quadrants to delineate abdominal organs and detect subtle masses. Using the palmar surface of the fingers, compress to a maximum depth (5-6 cm). Perform bimanual palpation if you encounter resistance or to assess deeper structures . 	Normal (mild) tenderness is possible over the xiphoid, aorta, cecum , sigmoid colon, and ovaries with deep palpation .	Severe tenderness or pain may be related to trauma, peritonitis, infection, tumors, or enlarged or diseased organs .
- Palpate for masses. Note size (cm), ,their location , shape, consistency, demarcation , pulsatility, tenderness, and mobility. Do not confuse a mass with an organ or structure .	No palpable masses are present.	A mass detected in any quadrant may be due to a tumor, cyst, abscess ,enlarged organ, aneurysm, or adhesions .
- Palpate the umbilicus and surrounding area for swellings, bulges, or masses	Umbilicus and surrounding area are free of swellings, bulges, or masses.	A soft center of the umbilicus can be a potential for herniation. Palpation of a hard nodule in or around the umbilicus may indicate metastatic nodes from an occult gastrointestinal cancer .
- **Palpate the aorta**: Use your thumb and first finger in the epigastrium, slightly to the left of midline. Assess the pulsation of the abdominal aorta. 	The aorta is approximately 2.5–3.0 cm wide with a moderately strong and regular pulse. Possibly mild tenderness may be elicited.	A wide, bounding pulse may be felt with an abdominal aortic aneurysm .

- Palpate the liver: Note consistency and tenderness. - To palpate bimanually, stand at the client's right side and place your left hand under the client's back at the level of the eleventh to twelfth ribs. - Lay your right hand parallel to the right costal margin (your fingertips should point toward the client's head). Ask the client to inhale, then compress upward and inward with your fingers 	The liver is usually not palpable although it may be felt in some thin clients. If the lower edge is felt, it should be firm, smooth, and even . Mild tenderness may be normal.	A hard, firm liver may indicate cancer. Nodularity may occur with tumors, metastatic cancer, late cirrhosis, or syphilis. Tenderness may be from vascular engorgement.
- Palpate the spleen: - Stand at the client's right side, reach over the abdomen with your left arm, and place your hand under the posterior lower ribs. - Pull up gently. Place your right hand below the left costal margin with the fingers pointing toward the client's head. - Ask the client to inhale and press inward and upward as you provide support with your other hand. - Note consistency and tenderness . 	The spleen is seldom palpable at the left costal margin. If the edge of the spleen can be palpated it should be soft and non tender .	Palpable spleen suggests enlargement (up to three times the normal size), which may result from infections, trauma, mononucleosis, chronic blood disorders, and cancers

- Palpate the kidneys: To palpate the right kidney, support the right posterior flank with your left hand and place your right hand in the RUQ just below the costal margin at the MCL. - To capture the kidney, ask the client to inhale. Then compress your fingers deeply during peak inspiration. Ask the client to exhale and hold the breath briefly. Gradually release the pressure of your right hand. If you have captured the kidney, you will feel it slip beneath your fingers. To palpate the left kidney, reverse the procedure. 	The kidneys are usually not palpable. Sometimes the lower pole of the right kidney may be palpable by the capture method because of its lower position. If palpated, it should feel firm, smooth, and rounded. The kidney may or may not be slightly tender .	An enlarged kidney may be , due to a cyst, tumor or hydronephrosis .
- Palpate the urinary bladder: Begin at the symphysis pubis and move upward and outward to estimate bladder borders .	An empty bladder is neither palpable nor tender . 	A distended bladder is , palpated as a smooth, round and somewhat firm mass extending as far as the umbilicus.

TESTS FOR ASCITES		
A) Test for shifting dullness: - If you suspect that the client has ascites because of a distended abdomen or bulging flanks, perform this special percussion technique. - The client should remain supine. Percuss the flanks from the bed upward toward the umbilicus . Note the change from dullness to tympany and mark this point.  - Now help the client turn onto the side. Percuss the abdomen from the be upward. Mark the level where dullness changes to tympany.  	The borders between tympany and dullness remain relatively constant throughout position changes .	When ascites is present and the client is supine, the fluid assumes a dependent position and produces a dull percussion tone around the flanks. Air rises to the top and tympany is percussed around the umbilicus .When the client turns onto one side and ascites is present, the fluid assumes a dependent position and air rises to the top.
B)Perform the fluid wave test: - The client should remain supine - You will need assistance with this test. Ask the client or an assistant to place the ulnar side of the hand and the lateral side of the forearm firmly along the midline of the	No fluid wave is transmitted.	Movement of a fluid wave against the resting hand suggests large amounts of fluid are present (**ascites**).

abdomen. - Firmly place the palmar surface of your fingers and hand against one side of the client's abdomen . Use your other hand to tap the opposite side of the abdominal wall . 		
	TESTS FOR APPENDICITIS	
A) Assess for rebound tenderness. - If the client has abdominal pain or tenderness test for rebound tenderness by palpating deeply at 90 degrees into the abdomen away from the painful or tender area - Then suddenly release pressure - Listen and watch for the client's expression of pain. Ask the client to describe which hurt more—the pressing in or the releasing—and where on the abdomen the pain occurred.  **CLINICAL TIP** Test for rebound tenderness should always be performed at the end of the examination because a positive response produces pain and muscle spasm that can interfere with the remaining examination	No rebound tenderness is present.	- The client has rebound tenderness when the client perceives sharp, stabbing pain as the examiner releases pressure from the abdomen (Blumberg's sign). - It suggests peritoneal irritation (as from appendicitis). If the client feels pain at an area other than where you were assessing for rebound tenderness

B) Assess for psoas sign: Ask the client to lie on the left side. Hyperextend the right leg of the client. 	No abdominal pain is present.	Pain in the RLQ (psoas sign) is associated with irritation of the iliopsoas muscle due to appendicitis (an inflamed appendix).
C) Assess for obturator sign: Support the client's right knee and ankle. Flex the hip and knee, and rotate the leg internally and externally. 	No abdominal pain is present.	Pain in the RLQ indicates irritation of the obturator muscle due to appendicitis.
TEST FOR CHOLECYSTITIS		
- Assess RUQ pain or tenderness, which may signal cholecystitis (inflammation of the gallbladder) - Press your fingertips under the liver border at the right costal margin and ask the client to inhale deeply 	No increase in pain is present.	Accentuated sharp pain that causes the client to hold his or her breath (inspiratory arrest) is a positive Murphy's sign and is associated with acute cholecystitis.

Attachments

Box 1 – Anatomic Correlates of the Quadrants of the Abdomen

Right Upper Quadrant (RUQ):	**Left Upper Quadrant(LUQ):**
Ascending and transverse colon Duodenum Gallbladder Hepatic flexure of colon Liver Pancreas (head) Right adrenal gland Right kidney (upper pole) Right urete	Left adrenal gland Left kidney (upper pole) Left ureter Pancreas (body and tail) Spleen Splenic flexure of colon Stomach Transverse descending colon
Right Lower Quadrant (RLQ):	**Left Lower Quadrant (LLQ):**
Ascending colon Cecum Right kidney (lower pole) Right ovary and tube Right ureter Right spermatic cord	Left kidney (lower pole) Left ovary and tube Left ureter Left spermatic cord Descending and sigmoid colon

King Saud University Application of Health Assessment

Collage of Nursing NURS 225

Medical-Surgical Nursing

Performance Checklist

Name of student_____ Student Number_____

Performance criteria	Competency Level			Comment
	Done correctly (2)	Done with assistance (1)	Not done (0)	
ABDOMEN **History Taking .Obtain health history R\t GI problems:** - Appetite- Anorexia - Weight loss - Heartburn - Excessive gas or flatus - Regurgitation - Vomiting- amount, type of vomit, color - Abdominal pain and its characteristic - Medical problems related to the abdomen- ex: Hepatitis, gallbladder problems, or pancreatitis Surgeries of the abdomen - Use of tobacco, alcohol and illegal drugs Hereditary disorders affecting the abdomen - Bowel movements, and urination				
History Taking about bowel movements, and urination: - Frequency - Consistency - Pain - Color - Difficulty				
History Taking about: - Urine Color Changes - Voiding pattern changes: hesitancy, frequency, urgency, nocturia and incontinence				
Prepare required equipment				
Explain procedure				
Prepare the patient : - A flat pillow may be placed under the client's head for comfort. - Slightly flex the client's legs by placing a pillow or rolled blanket under the client's knees to help relax the abdominal muscles. - Drape the client with sheets so that the abdomen				

is visible from the lower rib cage to the pubic area Instruct the client to breathe through the mouth and to take slow, deep breaths. This promotes relaxation - Before touching the abdomen , ask the client about painful or tender areas. Always assess these areas at the end of the examination - Watch the patient face for signs of discomfort during the examination				
ABDOMINAL EXAMINATION				
A) INSPECTION				
- Observe the coloration of the skin - Note the vascularity of the abdominal skin -Note any striae (stretch marks) . - Assess for lesions and rashes - Inspect the umbilicus note color , location & contour - Inspect abdominal contour. Sitting at the client's side, look across the abdomen at a level slightly higher than the client's abdomen. - Observe aortic pulsations - Observe for peristaltic waves				
B) Auscultation				
- Auscultate for bowel sounds. Use the diaphragm of the stethoscope and make sure that it is warm before you place it on the client's abdomen. - Apply light pressure or simply rest the stethoscope on a tender abdomen. Begin in the RLQ and proceed clockwise, covering all quadrants. - Listen for at least 5 minutes before determining that no bowel sounds are present and that the bowels are silent - Confirm bowel sounds in each quadrant . Listen for up to 5 minutes (minimum of 1 minute per quadrant) to confirm the absence of bowel sounds - Bowel sounds normally occur every 5 to 15 seconds - Note the intensity, pitch, and frequency of the sounds **Auscultate for vascular sounds:** - Use the bell of the stethoscope to listen for bruits (low-pitched, murmur-like sound, pronounced BROO-ee) over the abdominal aorta and renal, iliac, and femoral arteries. **Listen for venous hum:** - Using the bell of the stethoscope, listen for a venous hum in the epigastric and umbilical areas.				
C- Percussion				
1- Percuss the abdomen for tones - Lightly and systematically percuss all quadrants				

- Abdominal percussion sequences may proceed clockwise or up and down over the abdomen **2- Percuss the span of the liver by determining its lower and upper borders:** - To assess the lower border, begin in the RLQ at the mid-clavicular line (MCL) and percuss upward. Note the change from tympany to dullness. Mark this point: It is the lower border of liver dullness. - To assess the upper border, percuss over the upper right chest at the MCL and percuss downward, noting the change from lung resonance to liver dullness. Mark this point It is the upper border of liver dullness. - Measure the distance between the two marks, this is the span of the liver. **3- Percuss the spleen:** - Begin posterior to the left mid-axillary line (MAL), and percuss downward, noting the change from lung resonance to splenic dullness. **4- Perform blunt percussion on the kidneys:** - Placing your left hand flat against the costovertebral angle over the 12 ribs . - Use the ulnar side of your right fist to strike your left hand. **5- Bladder Percussion:** - Ask the patient to empty the bladder first. - Place patient in a supine position. - Start at the symphysis pubis and percuss upward toward the bladder and over it.				
D- Palpation				
1- Light palpation: - Light palpation is used to identify areas of tenderness and muscular resistance. Using the fingertips, begin palpation in a non-tender quadrant, and compress to a depth of 1 cm in a dipping motion. Then gently lift the fingers and move to the next area **2- Deep palpation:** - Deeply palpate all quadrants to delineate abdominal organs and detect subtle masses. Using the palmar surface of the fingers, compress to a maximum depth (5-6 cm). Perform bimanual palpation if you encounter resistance or to assess deeper structures. - **Palpate for masses**. Note their location ,, size (cm), pulsatility, ,shape, consistency, demarcation				

tenderness, and mobility. Do not confuse a mass with an organ or structure - Palpate the umbilicus and surrounding area for swellings, bulges, or masses **- Palpate the aorta:** Use your thumb and first finger in the epigastrium, slightly to the left of midline. Assess the pulsation of the abdominal aorta. **- Palpate the liver:** - Note consistency and tenderness - To palpate bimanually, stand at the client's right side and place your left hand under the client's back at the level of the eleventh to twelfth ribs - Lay your right hand parallel to the right costal margin (your fingertips should point toward the client's head). Ask the client to inhale, then compress upward and inward with your fingers. **- Palpate the spleen:** - Stand at the client's right side, reach over the abdomen with your left arm, and place your hand under the posterior lower ribs - Pull up gently. Place your right hand below the left costal margin with the fingers pointing toward the client's head - Ask the client to inhale and press inward and upward as you provide support with your other hand - Note consistency and tenderness **- Palpate the kidneys:** To palpate the right kidney, support the right posterior flank with your left hand and place your right hand in the RUQ just below the costal margin at the MCL. - To capture the kidney, ask the client to inhale. Then compress your fingers deeply during peak inspiration. Ask the client to exhale and hold the breath briefly. Gradually release the pressure of your right hand. If you have captured the kidney, you will feel it slip beneath your fingers. To palpate the left kidney, reverse the procedure **- Palpate the urinary bladder:** - Begin at the symphysis pubis and move upward and outward to estimate bladder borders.				

TESTS FOR ASCITES				
A) Test for shifting dullness: - If you suspect that the client has ascites because of a distended abdomen or bulging flanks, perform this special percussion technique. - The client should remain supine. Percuss the flanks from the bed upward toward the umbilicus . - Note the change from dullness to tympany and mark this point. - Now help the client turn onto the side Percuss the abdomen from the be upward. Mark the level where dullness changes to tympany. **B)Perform the fluid wave test:** - The client should remain supine You will need assistance with this test. Ask the client or an assistant to place the ulnar side of the hand and the lateral side of the forearm firmly along the midline of the abdomen. - Firmly place the palmar surface of your fingers and hand against one side of the client's abdomen . Use your other hand to tap the opposite side of the abdominal wall.				
TESTS FOR APPENDICITIS				
A) Assess for rebound tenderness: - If the client has abdominal pain or tenderness test for rebound tenderness by palpating deeply at 90 degrees into the abdomen away from the painful or tender area. - Then suddenly release pressure. - Listen and watch for the client's expression of pain. Ask the client to describe which hurt more—the pressing in or the releasing—and where on the abdomen the pain occurred. **B) Assess for psoas sign:** - Ask the client to lie on the left side. Hyperextend the right leg of the client. **C) Assess for obturator sign:** -Support the client's right knee and ankle. Flex the hip and knee, and rotate the leg internally and externally.				

TEST FOR CHOLECYSTITIS				
- Assess RUQ pain or tenderness, which may signal cholecystitis (inflammation of the gallbladder) - Press your fingertips under the liver border at the right costal margin and ask the client to inhale deeply				

Total grade _____ Evaluated by _____