ASSESSMENT OF THE ABDOMEN

By

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Objectives

- Structure and Function
- Subjective Data—Health History Questions
- Objective Data—The Physical Exam
- Abnormal Findings

Structure and Function

Large oval cavity.

2- Extends from diaphragm to symphysis.

3- Viscera: solid and hollow.

A- Solid viscera are those organs that maintain their shape consistently (liver, pancreas, spleen, adrenal glands, kidneys, ovaries and uterus).

Structure and Function

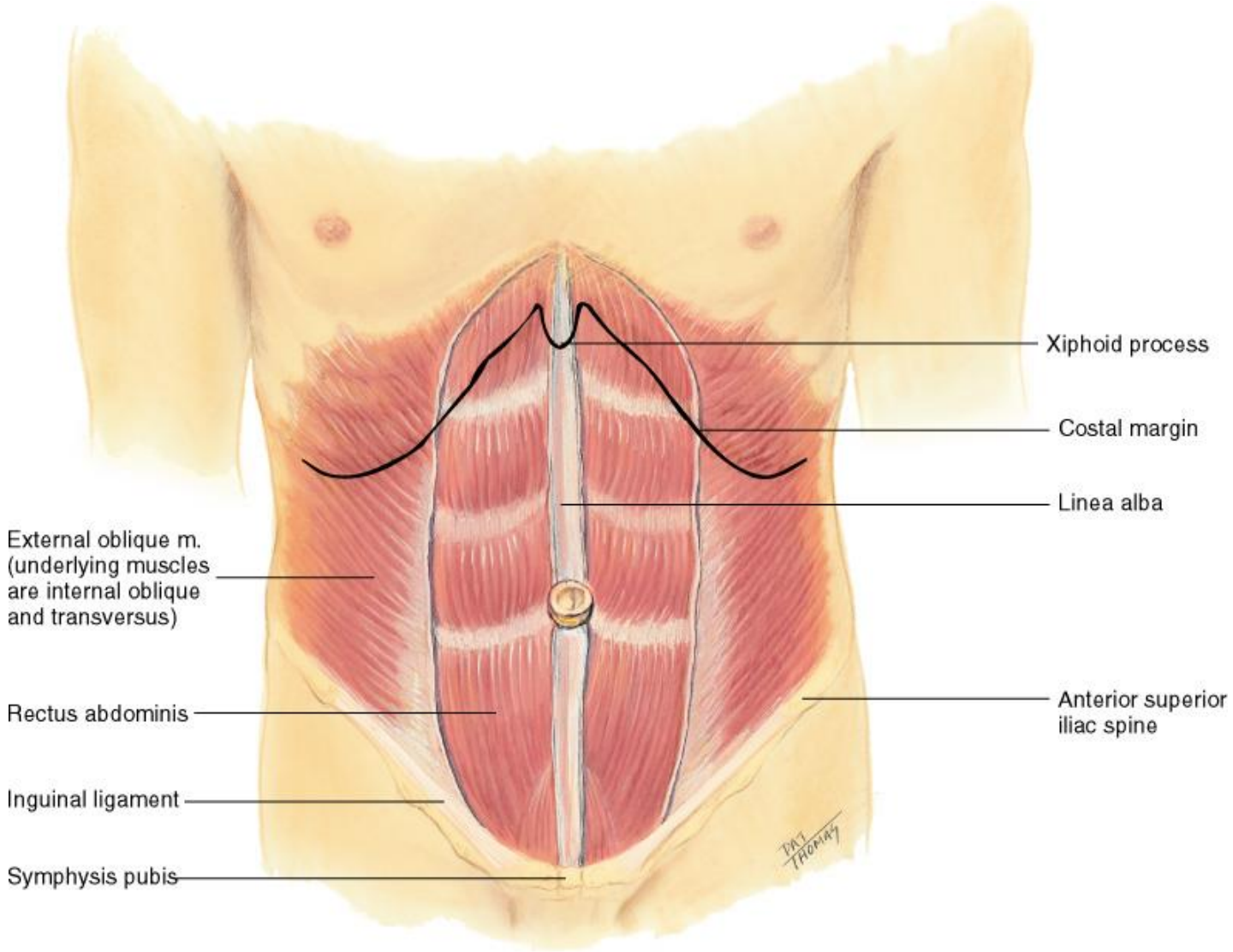
The liver is the largest solid organ in the body.

B- The hollow viscera consist of structures that change shape, depending on their contents . These include (stomach, gallbladder, small intestine, colon , bladder).

4- Vascular structures:

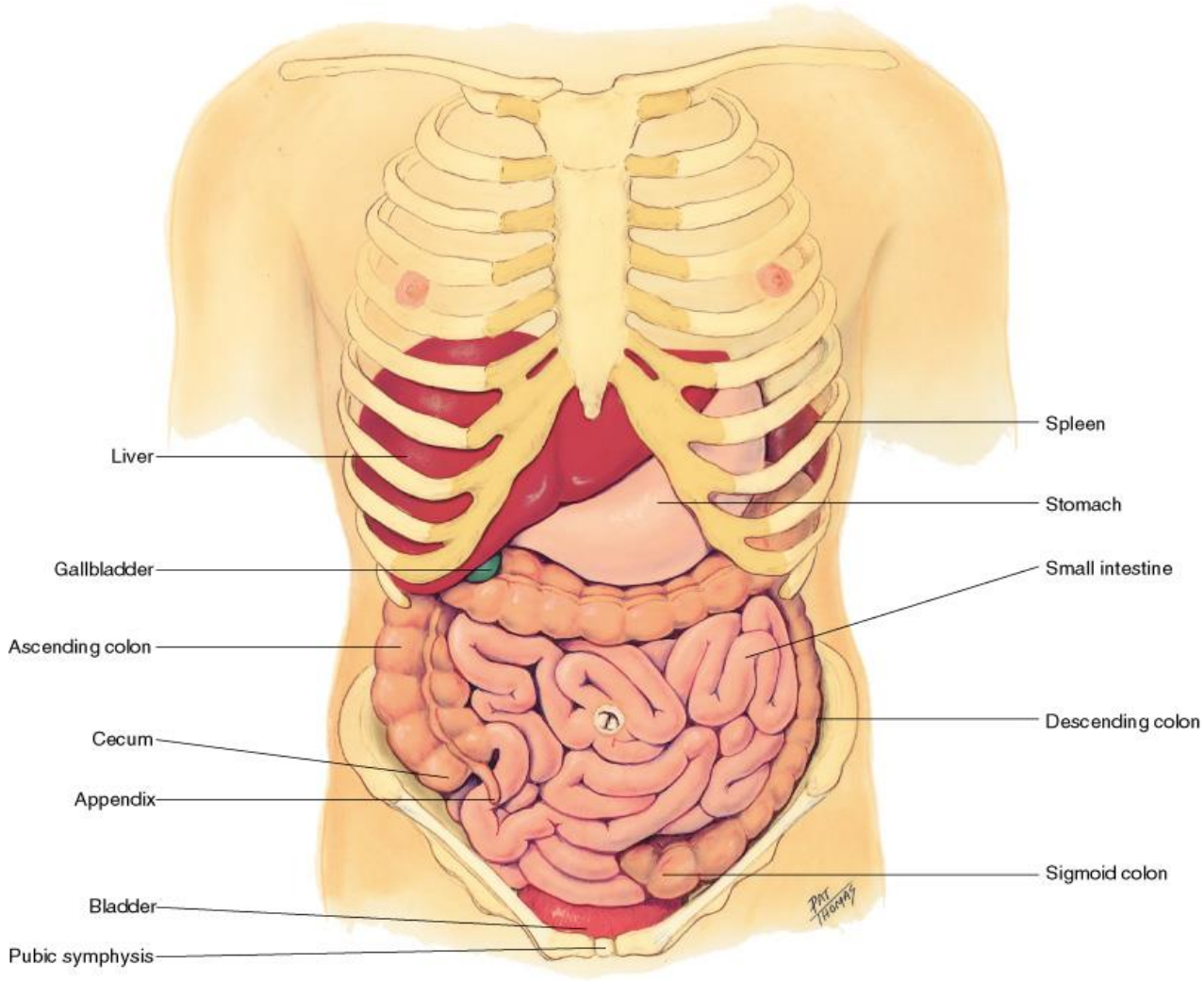
The abdominal organs are supplied with arterial blood by abdominal aorta & its major branches.

Structure & Function



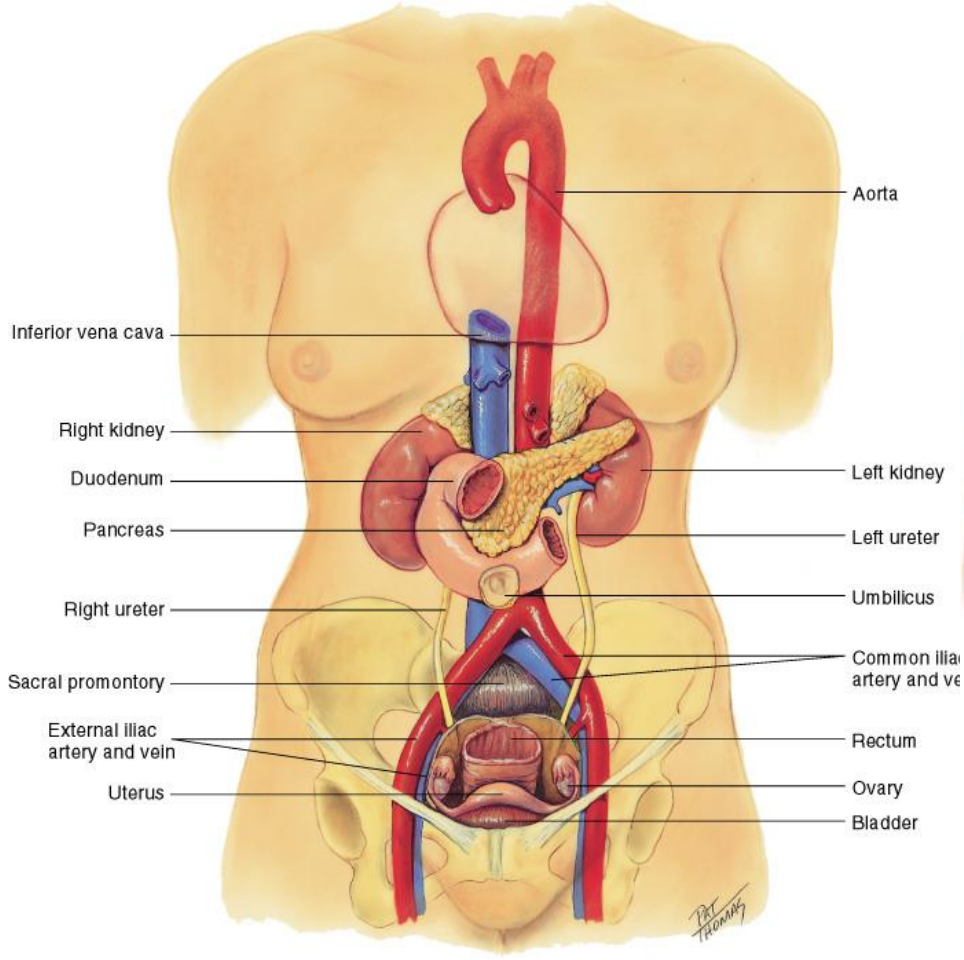
Review Structure & Function

(stomach, gallbladder, small intestine, colon, bladder)

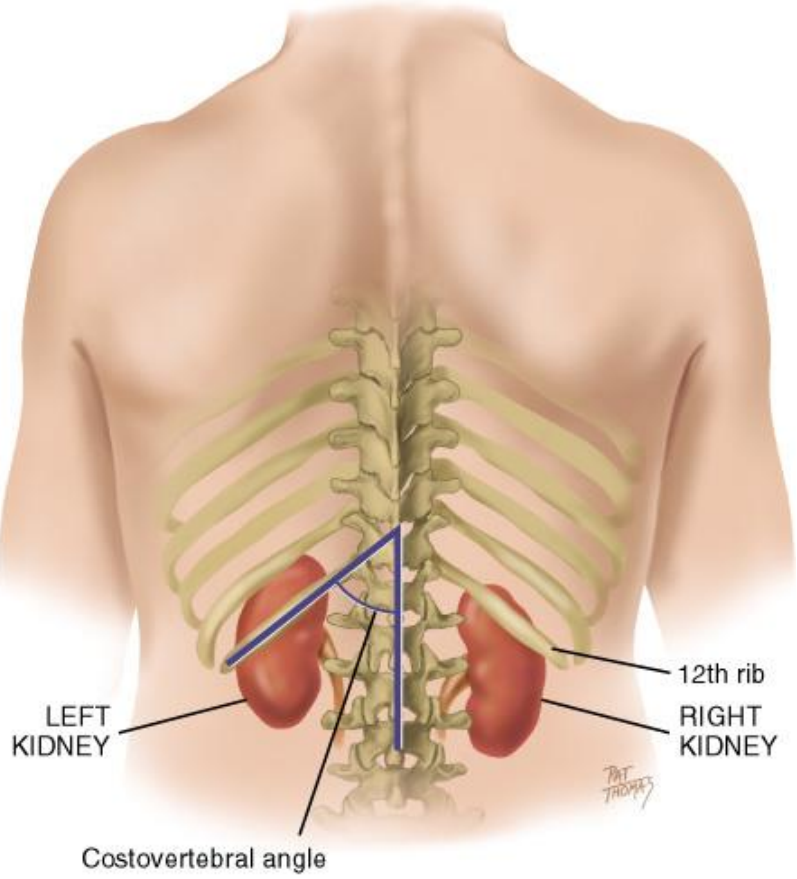


Review Structure & Function

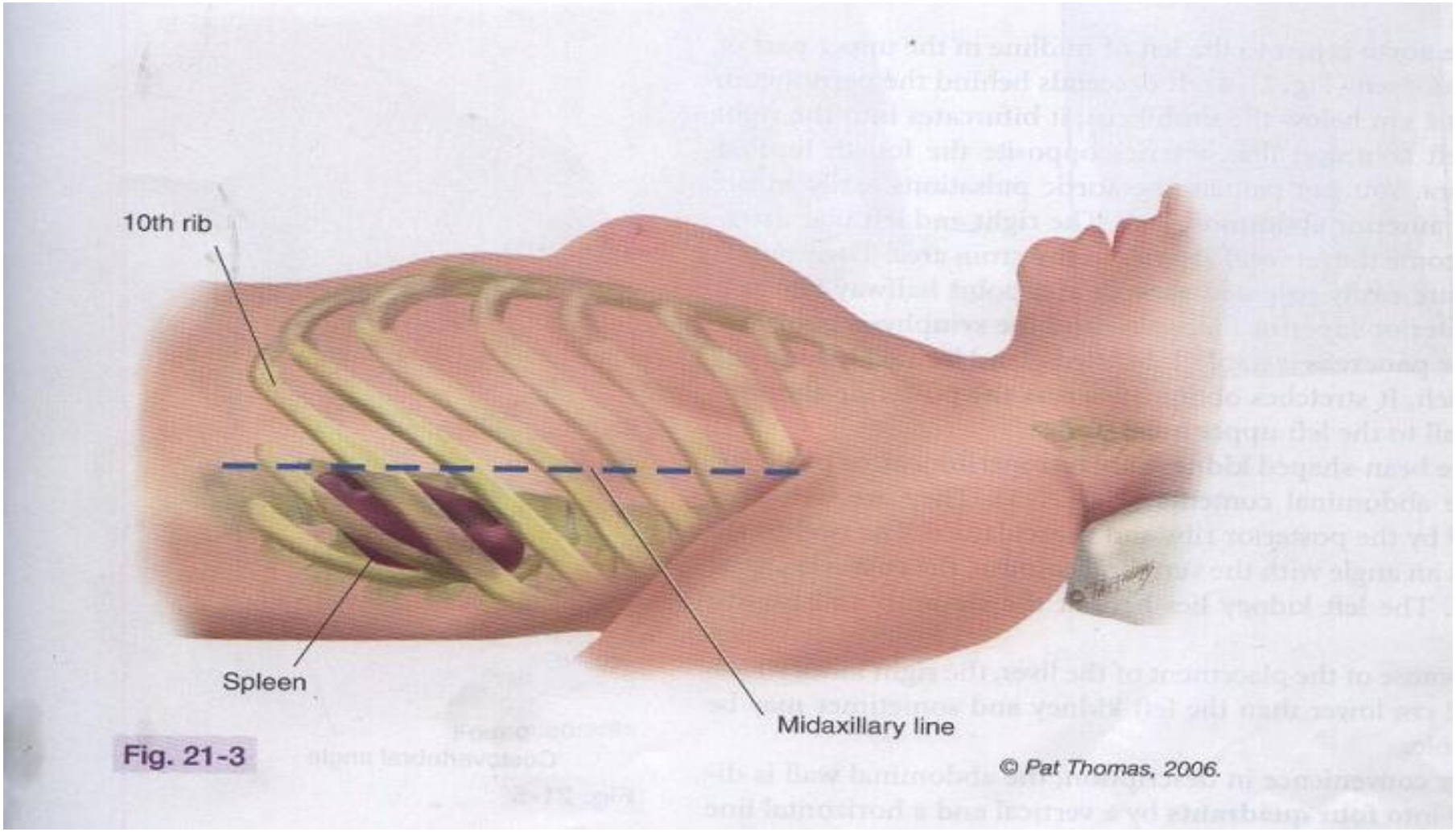
(Aorta, pancreas)



(Kidneys)

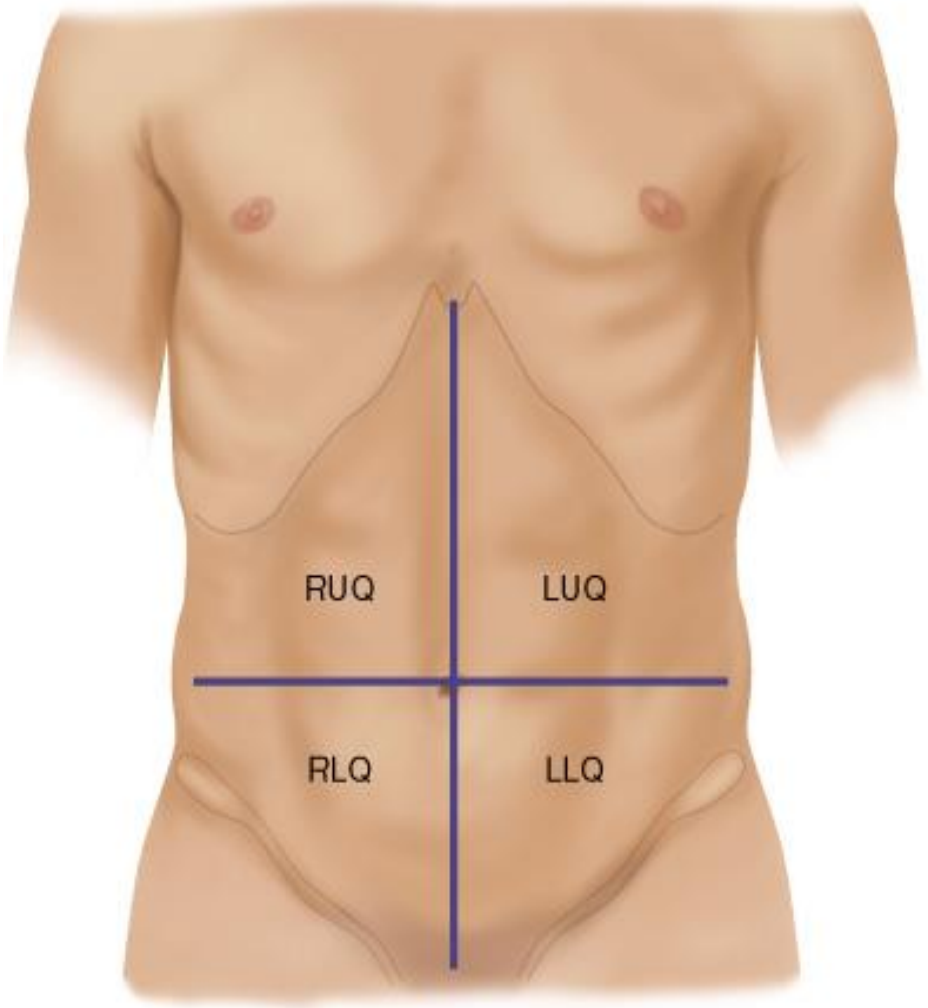


Review Structure & Function (Spleen)

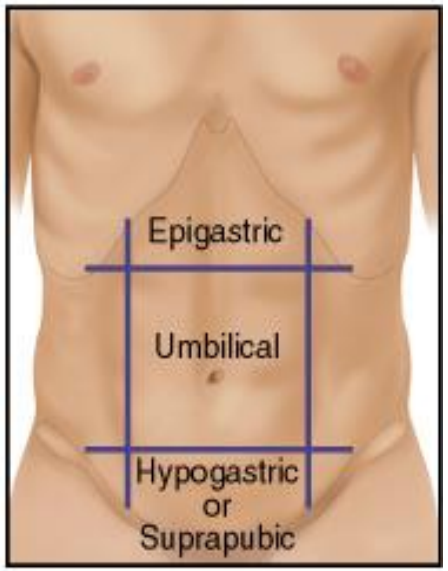


Abdomen

four quadrants

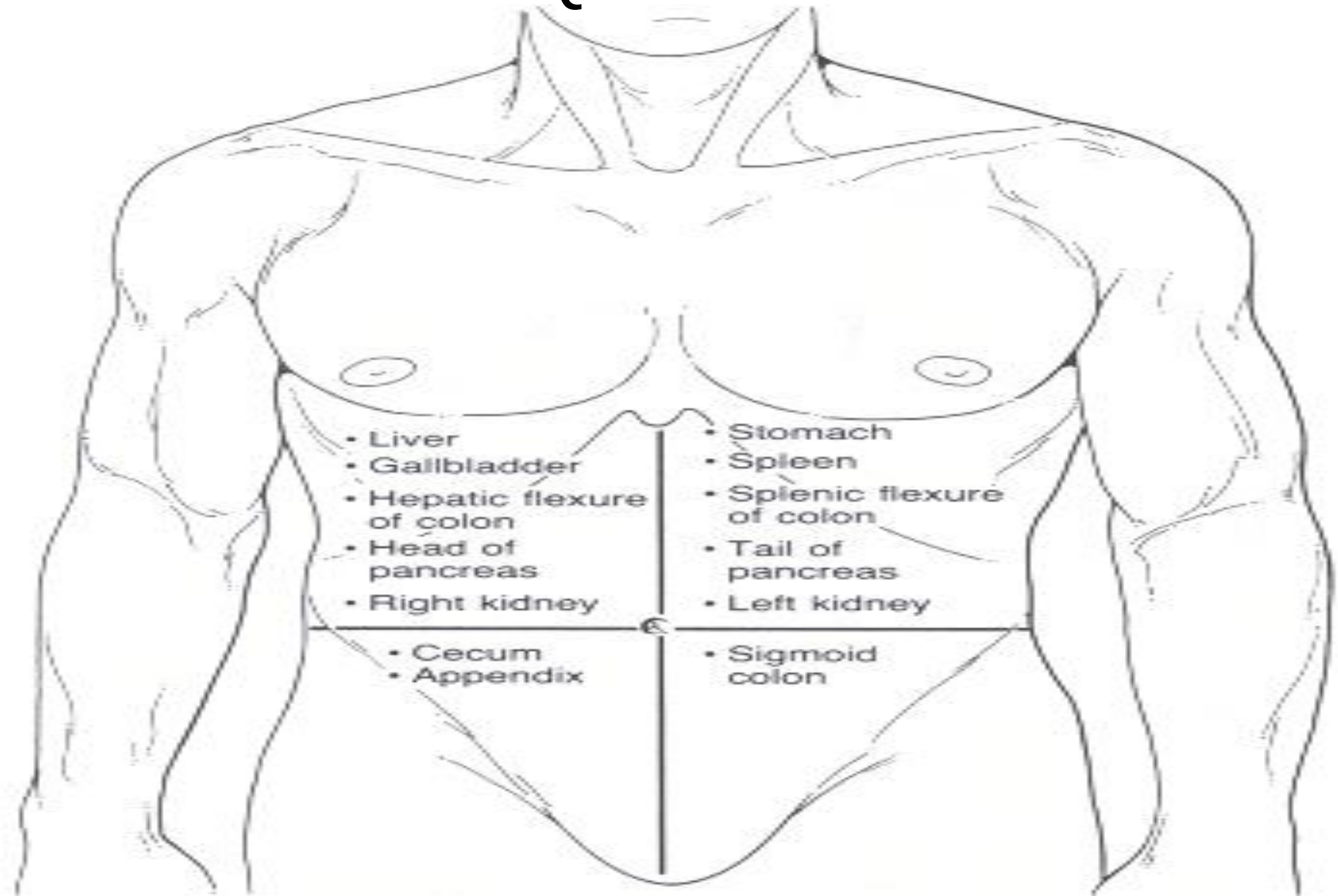


Four quadrants

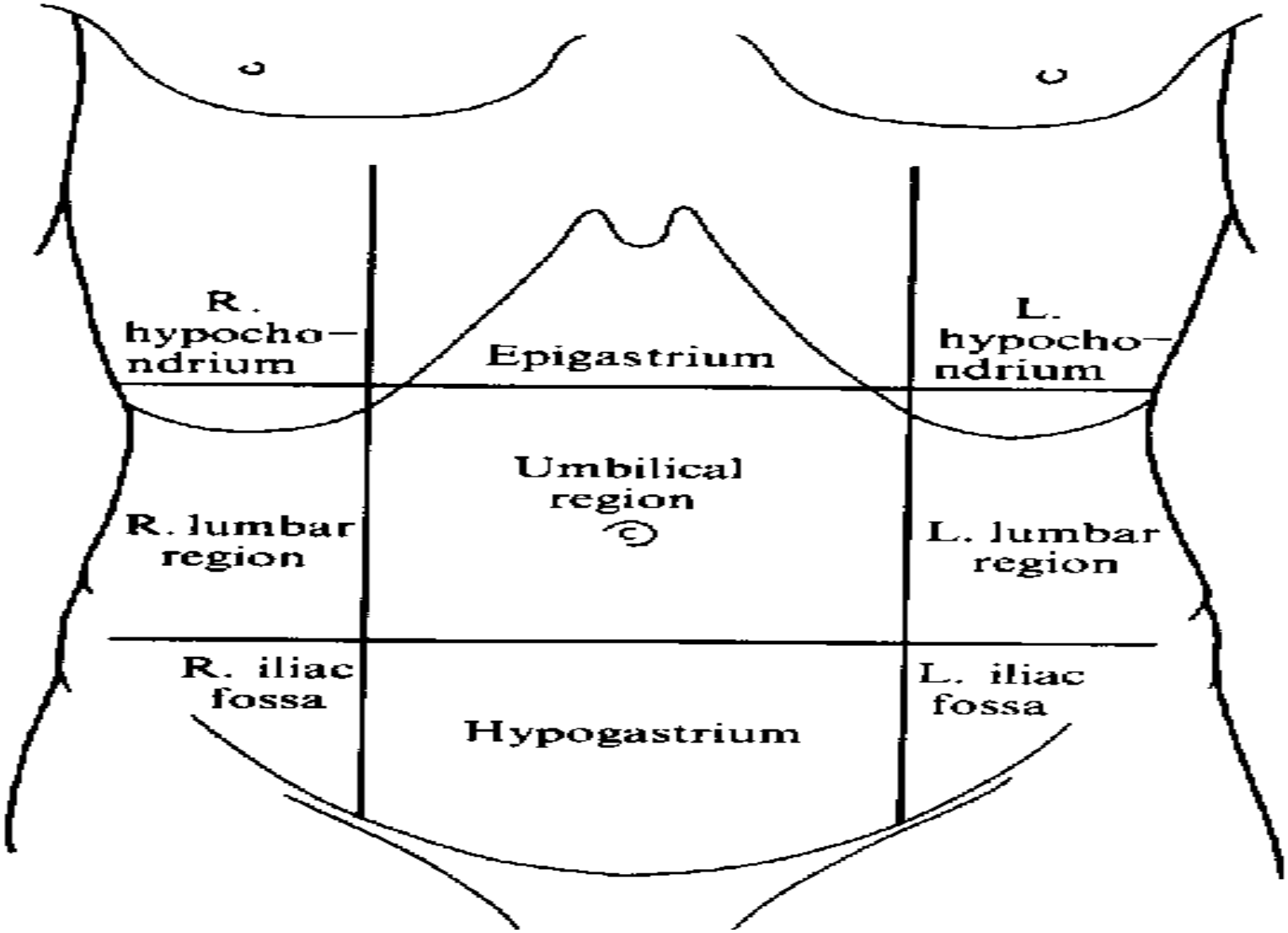


Nine regions

4 Quadrants


• Liver
• Gallbladder
• Hepatic flexure of colon
• Head of pancreas
• Right kidney
• Stomach
• Spleen
• Splenic flexure of colon
• Tail of pancreas
• Left kidney
• Cecum
• Appendix
• Sigmoid colon

9 Regions


R. hypocho-ndrium
Epigastrium
L. hypocho-ndrium
Umbilical region
R. lumbar region
L. lumbar region
R. iliac fossa
Hypogastrium
L. iliac fossa

Right Lower Quadrant:

-Cecum
-Appendix
-Right ovary and tube
-Right ureter
-Right spermatic cord

Midline:

-Aorta
-Uterus.
-bladder.

Left Lower Quadrant:

-Part of descending colon
-Sigmoid colon
-Left ovary and tube
-Left ureter
-Left spermatic cord

Right Lower Quadrant:

-Cecum
-Appendix
-Right ovary and tube
-Right ureter
-Right spermatic cord

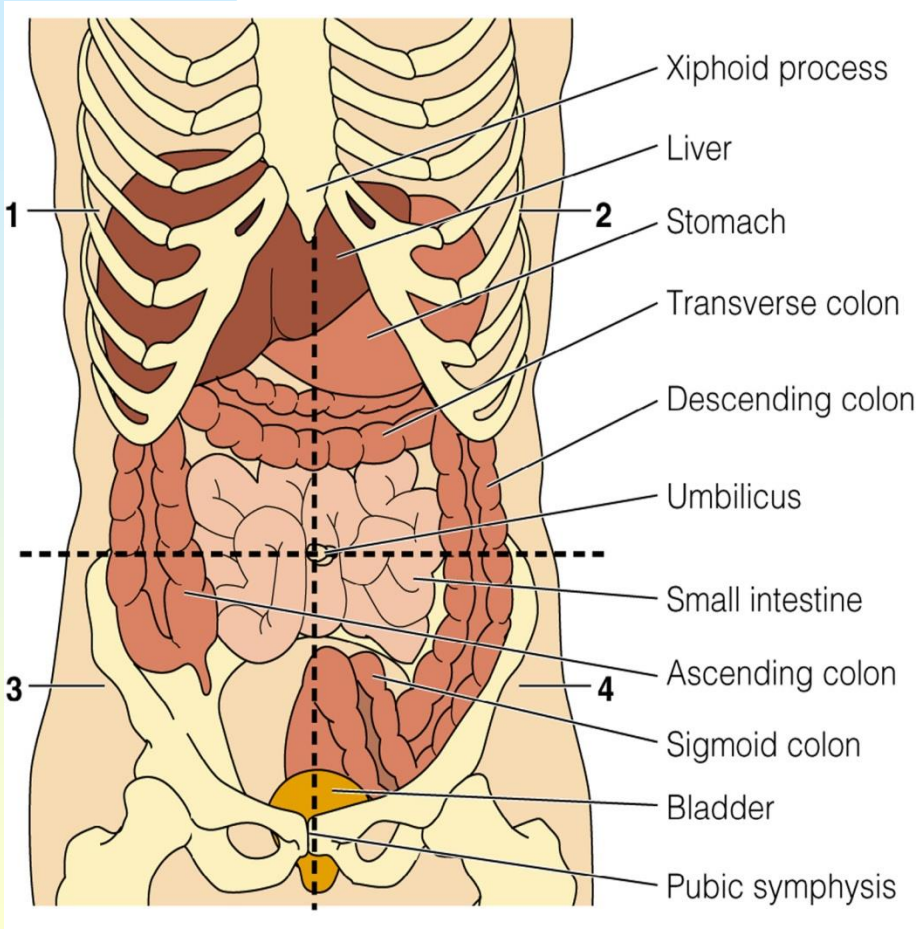
Midline:

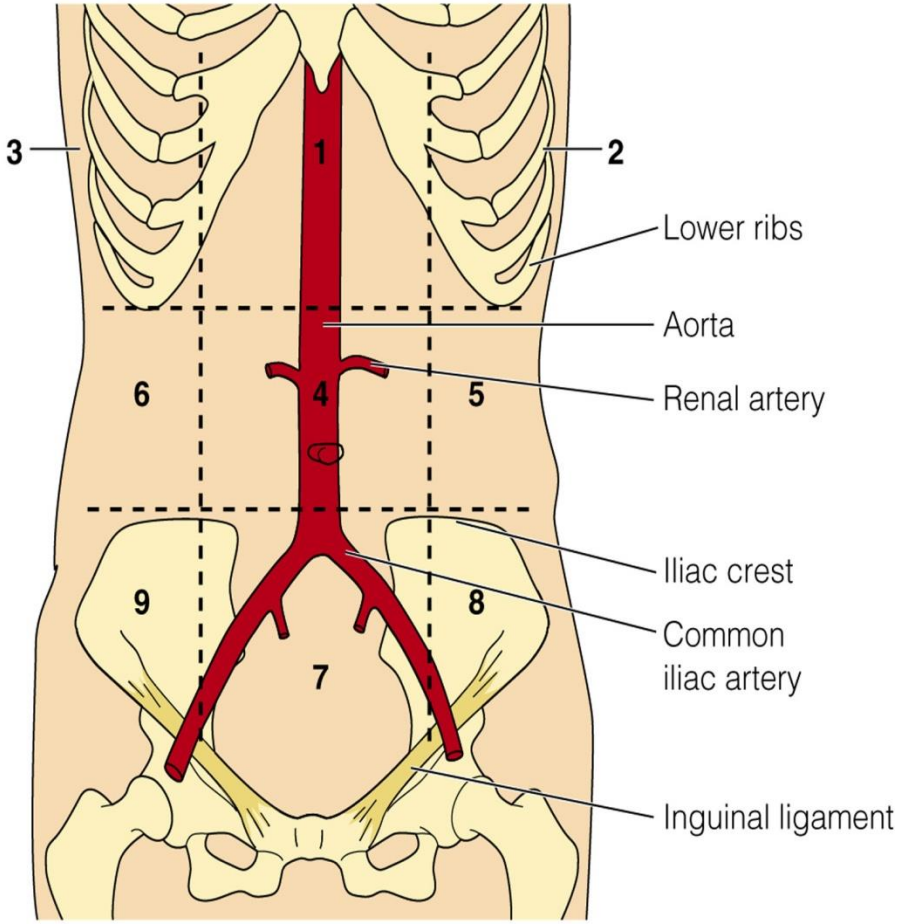
-Aorta
-Uterus.
-bladder.

Left Lower Quadrant:

-Part of descending colon
-Sigmoid colon
-Left ovary and tube
-Left ureter
-Left spermatic cord

Abdominal Landmarks





Subjective data- Abdomen

Ask about:

- Appetite/ changes in it
- Wt gain or loss
- Dysphagia
- Intolerance to certain foods
- Any Abdominal Pain
- Nausea and Vomiting
- Bowel movements
- Urinary patterns
- Allergies.
- Medications use
- Any past abdominal problems
- Last 24 hour nutritional assessment
- Recent stressful life events
- Possibility of Pregnancy.
- Exposure to infectious diseases.

PE - Preparation

- Adequate lighting
- Expose abdomen
- Stand on client's ® side
- Measures to relax abdomen
  - Provide privacy
  - Empty bladder before exam
  - Warm room, hands, & stethoscope
  - Keep your fingernails short
  - Supine, HOB lowered, head on pillow, knees bent or on pillow, arms at side or across chest
  - Palpate tender areas last
  - Use distraction

Equipment

- Stethoscope
- Alcohol swabs
- Small centimeter ruler
- Skin marking pen (optional)

Nursing Assessment

Objective Data:

- General Observation

1. Inspect
2. Auscultate
3. Percuss
4. Palpate

A-Inspecting the abdomen

B- Auscultating the abdomen

C- Palpating the abdomen

D- Percussing the abdomen

1. Inspection

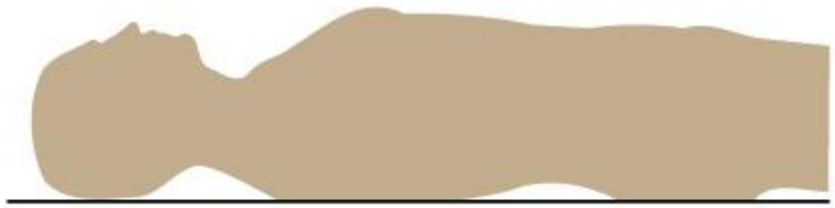
- Overall observation
- Abd contour- flat, scaphoid, round, protuberant
- Abd symmetry and skin color - note any masses, striae, scars, veins, pigmentation
- Pulsations

Umbilical Hernia

Objective Data

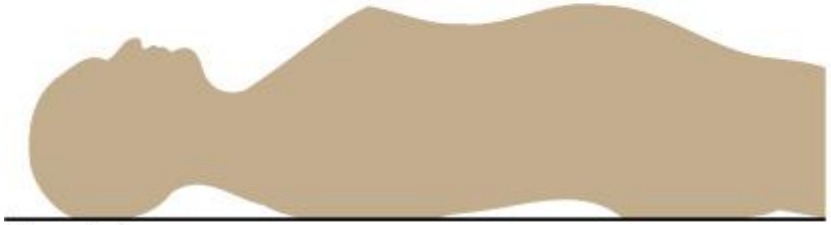
- Inspect the Abdomen
  - Contour
    - Assess at eye level
      - Protuberant, distension
    - Determine profile from rib margin to pubic bone
  - Symmetry
    - Note localized bulging, visible mass, or asymmetry
      - hernia
    - Use light if available
    - Assess from ® side & foot
  - Umbilicus
    - Normally midline & inverted, no discoloration, inflammation, discharge, or hernia
      - May be everted during pregnancy
      - Sunken in obesity

Abdominal Contour

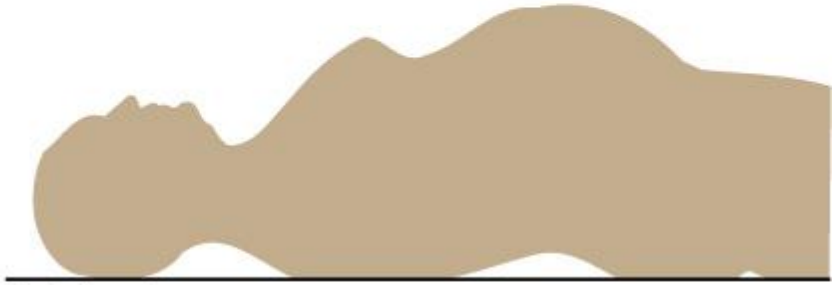


Flat

Scaphoid



Rounded

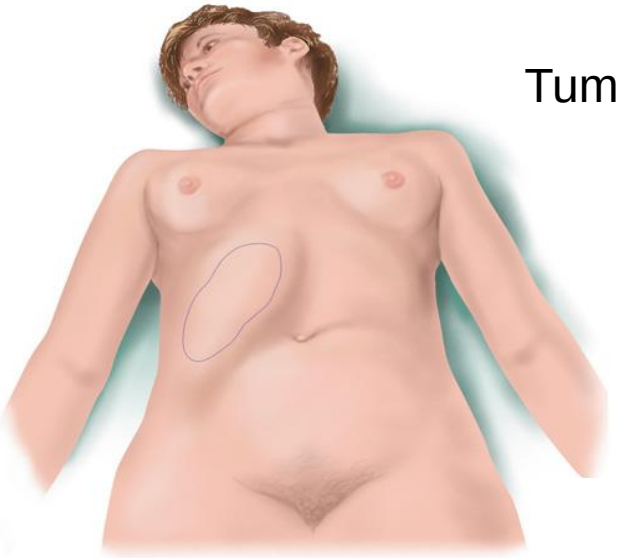


Protuberant

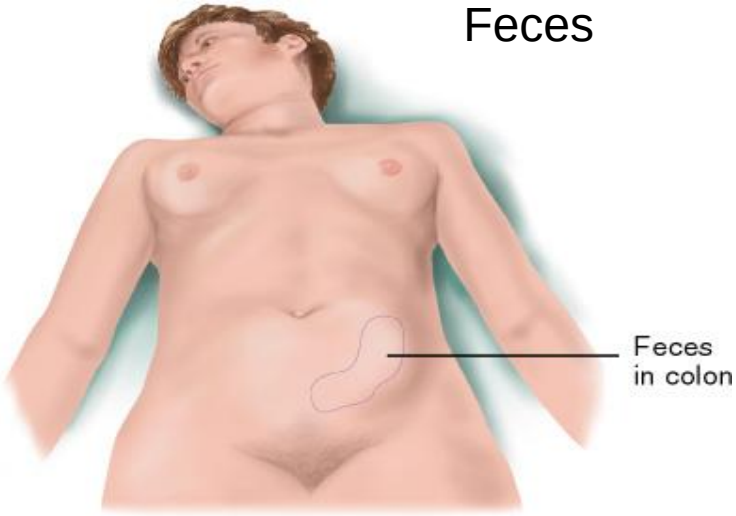
Abdominal Distention

Ovarian Cyst

Tumor



Feces



Objective Data

- Inspect the Abdomen
  - Skin
    - Normally smooth, even color, good turgor, no lesions
      - May see moles (brown macular or papular areas)
      - Note scars: location, length, healing
      - Redness with localized infection
    - Striae present after wt loss or pregnancy
      - Silvery-white, linear, jagged marks
      - If recent, they're pink or blue; then turn silvery white later
    - Veins normally not present
      - If thin, may see fine venous network

Objective Data

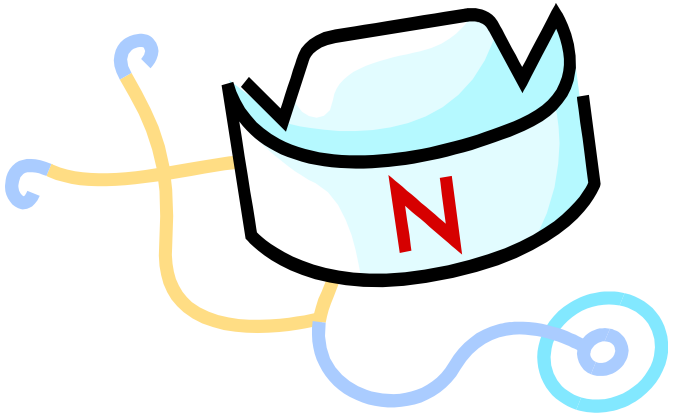
- Inspect the Abdomen
  - Pulsation or movement
    - May see aortic pulsations in epigastric area if thin
    - Males tend to be abdominal breathers—may note respirations
    - Waves of peristalsis sometimes seen if thin
      - Ripple slowly & obliquely across abdomen
  - Hair distribution
    - Pubic hair
      - Diamond shape in males
      - Inverted triangle in females

Inspection Abnormal Findings

- Visible or distended veins- ascites
- Visible peristalsis- obstruction
- Spider nevi (cutaneous angiomas)- cirrhosis
- Asymmetry/ Distention- mass or intestinal obsruction
- Color changes- jaundice, bluish/cyanotic

2. Auscultation

- Always done before percussion & palpation
- Use diaphragm of stethoscope
- Listen lightly
- Start with RLQ



Auscultation

- What makes a bowel sound?
- Note character & frequency of bowel sounds (5-30 times/minute)
- Sounds like…..
- Listen for 5 minutes before documenting absent bowel sounds
- Listen for bruits- aortic, renal, iliac, femoral
- Hyper- gastroenteritis, obstruction, hungry
- Hypo- pregnancy, peritonitis

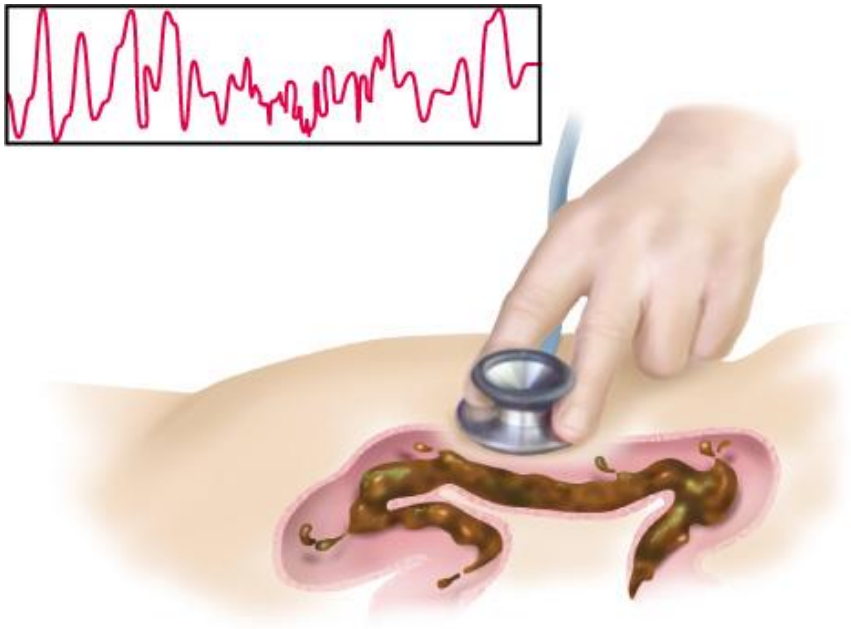
Objective Data

- Auscultate Bowel & Vascular Sounds
  - Depart from the normal sequence of exam here
  - Done in this sequence as percussion & palpation ↑ peristalsis
  - Use diaphragm end piece of stethoscope
    - Bowel sounds relatively high-pitched
  - Hold lightly against skin → if push too hard may stimulate > bowel sounds
  - Begin RLQ at ileocecal valve
    - Bowel sounds always present here normally

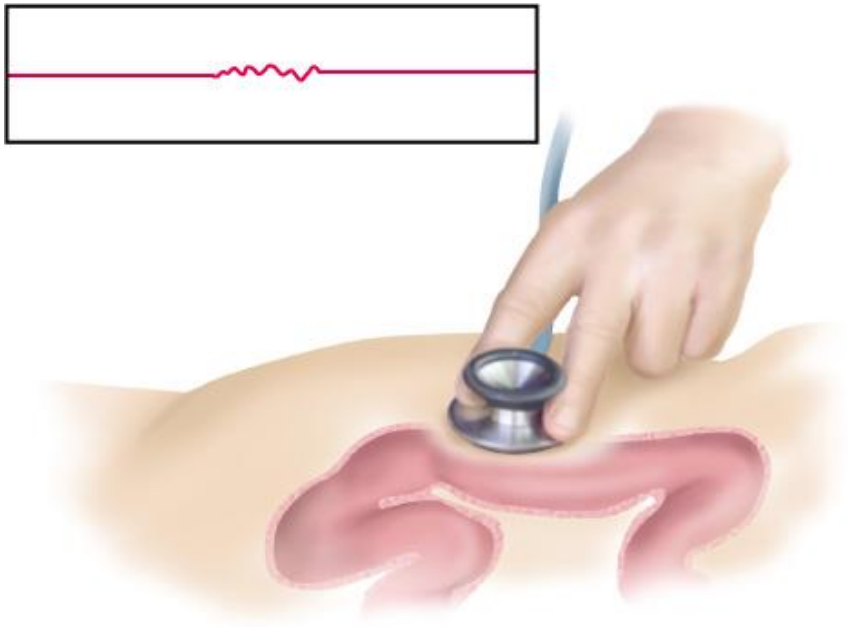
Auscultate Bowel Sounds

- **Bowel Sounds**
  - **Note character & frequency**
  - **Normal**
    - **high pitched, gurgling, cascading**
    - **occur irregularly (5-30 times/min).**
    - ***Do not count them.***
    - **Assess: *normal, hypoactive, or hyperactive***
      - ***Hypoactive – or absent***
      - ***Hyperactive – loud, high pitched rushing sounds***
    - **Must listen for 5 min before deciding BS are completely absent**
    - ***Borborygmus***
      - **hyperperistalsis when you are hungry**

Abnormal Bowel Sounds



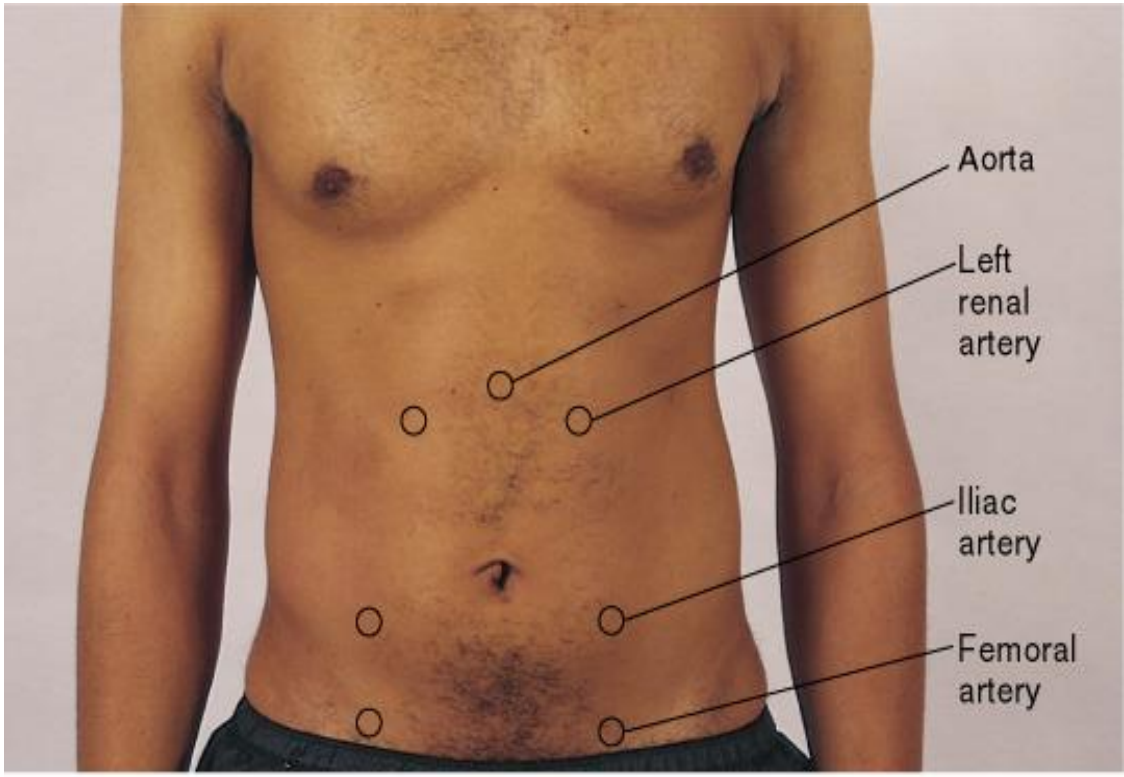
Hyperactive



Hypoactive

Auscultate Vascular Sounds

- Auscultate Vascular Sounds
  - Note presence of vascular sounds or bruits
    - Especially in people with HTN
    - Location, pitch and timing
  - Use bell endpiece with firm pressure to form a seal & check over the:
    - Aorta
    - Renal arteries
    - Iliac arteries
    - Femoral arteries



Abnormal Auscultation

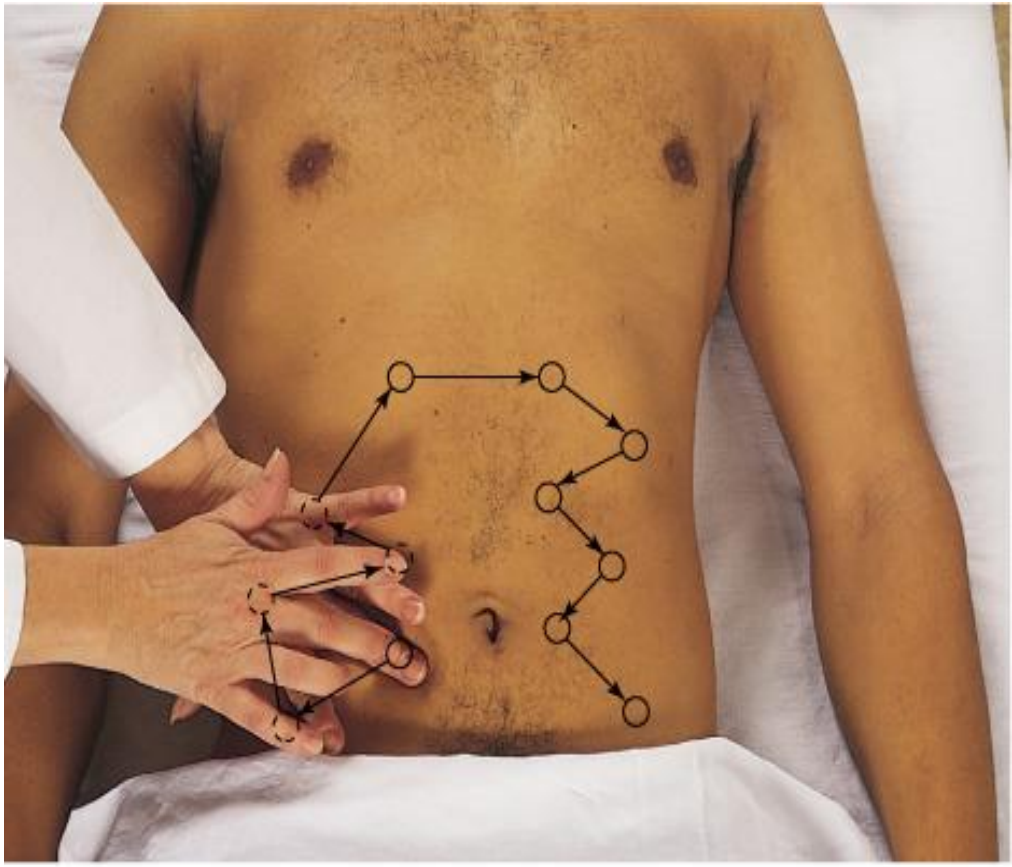
- Absence/Hyperactive bowel sounds
- Bruits- “swoosh”
- Peritoneal Friction Rub- rough, grating heard over liver & spleen- inflammation of peritoneal surface from tumor, infection, etc.

3. Percussion

- Gently tapping on the skin to create a vibration
- Detect fluid, gaseous distention and masses
- Tympany- gas (dominant sound because of air in sm intestine)
- Dullness- solid masses, distended bladder
- Percuss liver, spleen ,kidneys

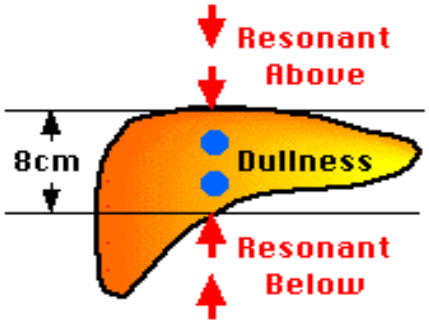
Percussion

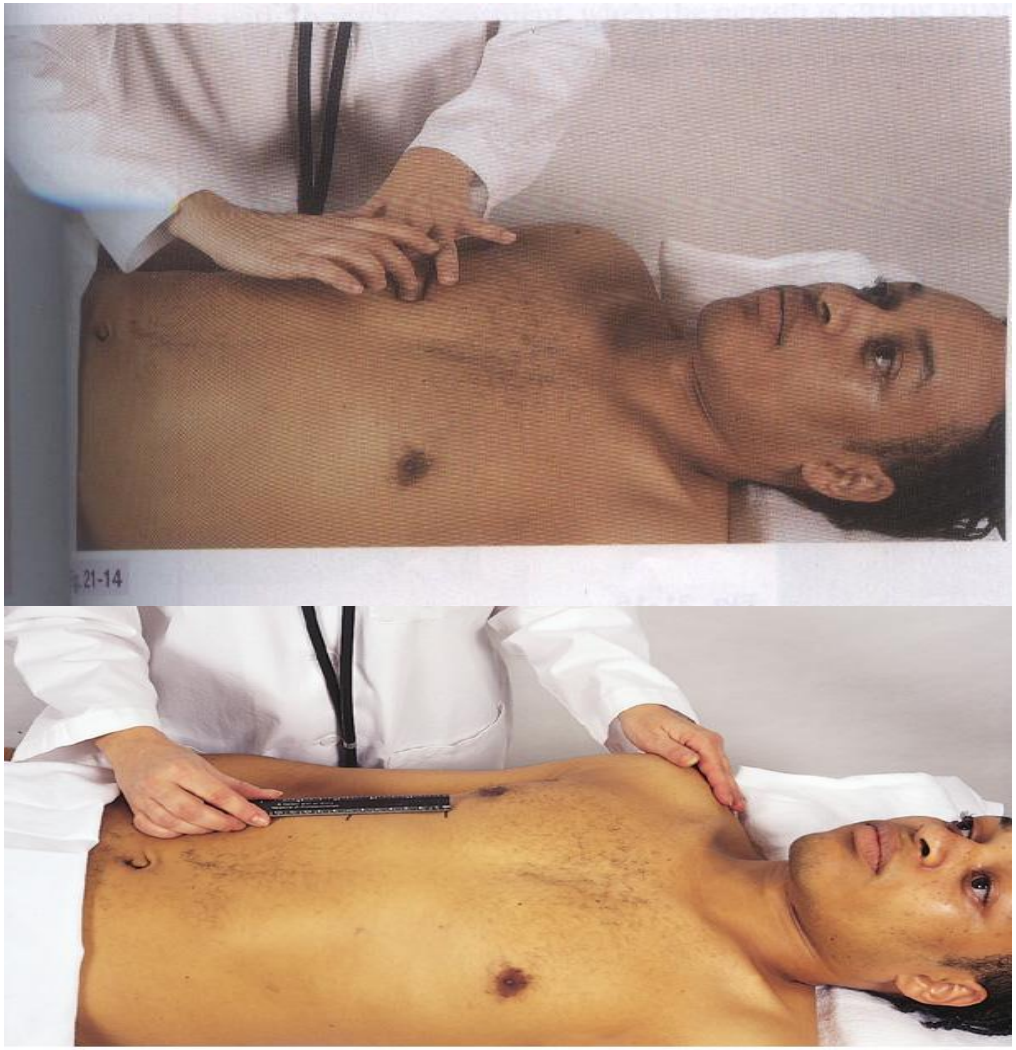
- Percuss the Abdomen
- General tympany
  - 1st percuss lightly in all 4 quadrants
    - Tympany should be predominant
      - Air in intestines rises when supine
    - dullness
      - bladder distention
      - adipose tissue
      - fluid/mass



Measuring Liver Span

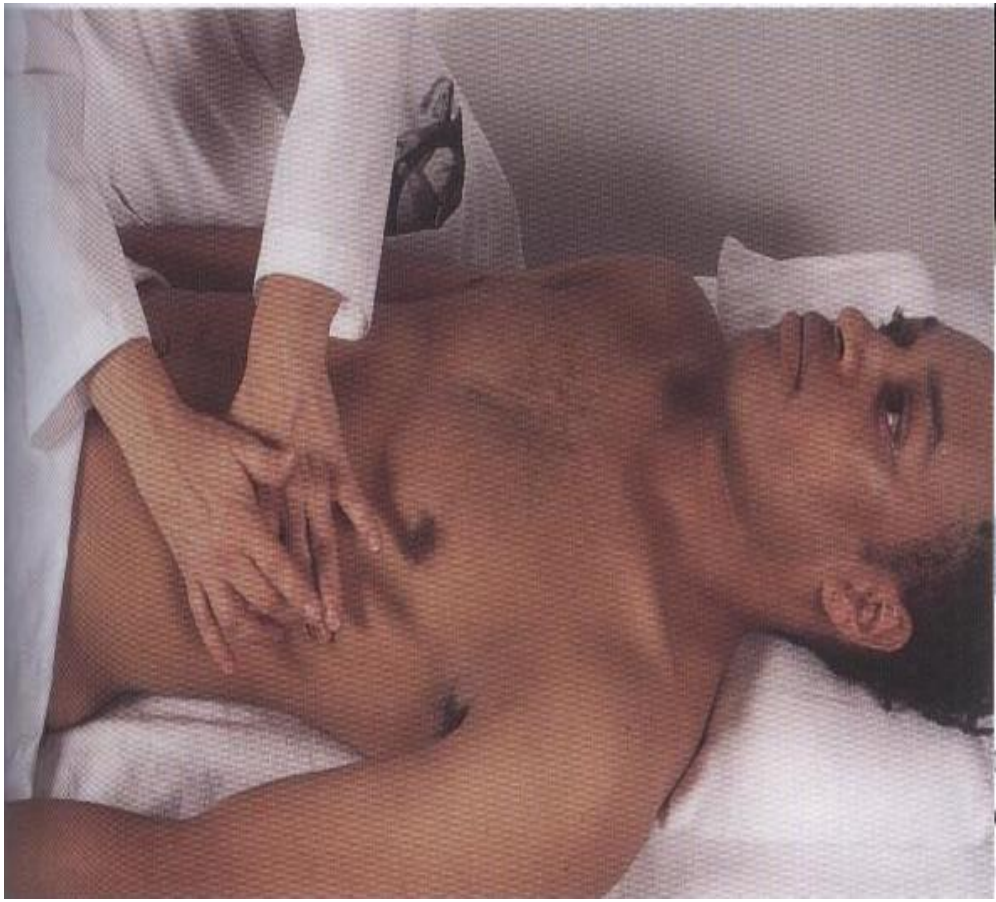
- Liver span
  - Percuss to measure the height of the liver in the ® MCL
  - Begin in area of lung resonance & percuss down until dullness heard & mark the spot (usually 5th ICS)
  - Find abdominal tympany & percuss upward in MCL to dullness (usually at ® costal margin)
  - Measure distance between 2 marks (Adult normal 6 to 12cm)





Objective Data

- *Percuss the Abdomen*
  - Splenic dullness
    - Spleen often obscured by stomach contents
    - May locate by percussing dullness 9th-11th ICS just behind (L) midaxillary line
      - Usually dullness not > 7cm in adult
    - Percuss lowest ICS in (L) anterior axillary line
      - Should hear tympany, have client take deep breath, tympany should remain



Costovertebral Angle Tenderness

- Costovertebral Angle (CVA) Tenderness
  - Place 1 hand over 12th rib at CVA & thump with ulnar edge of other fist
    - **Normally client feels a thud but no pain**
    - **Usually done in complete exam with thoracic assessment**
  - Repeat on opposite side
  - Sharp pain occurs with inflammation of the kidney

Objective Data
special procedure for assessing for ascites

Shifting dullness

- This is a test for peritoneal fluid (ascites). Percuss the patient's abdomen to outline areas of dullness and tympany.
- Have the patient roll away from you.
- Percuss and again outline areas of dullness and tympany. If the dullness has shifted to areas of prior tympany, the patient may have excess peritoneal fluid.

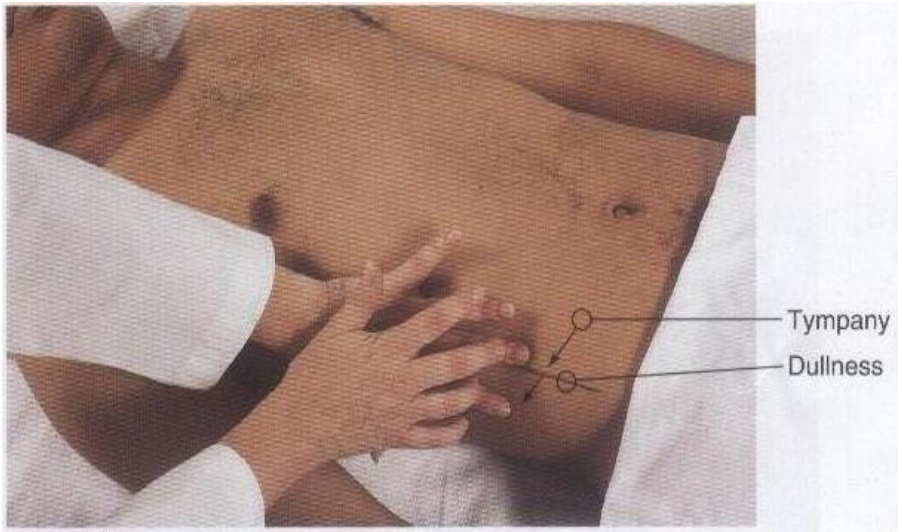


Fig. 21-20

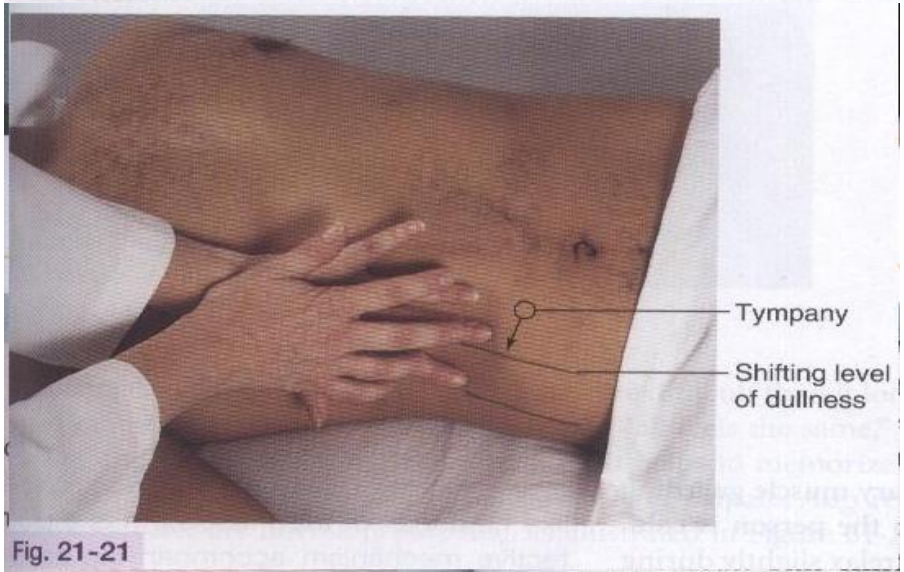
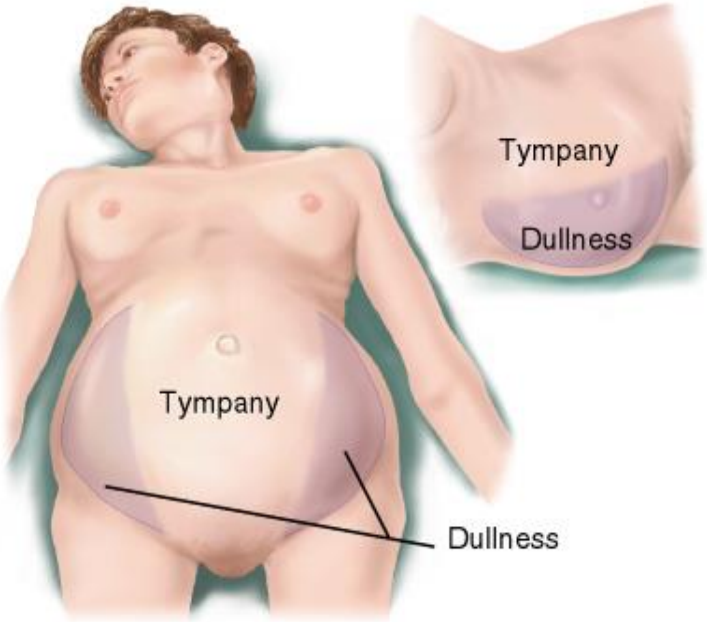
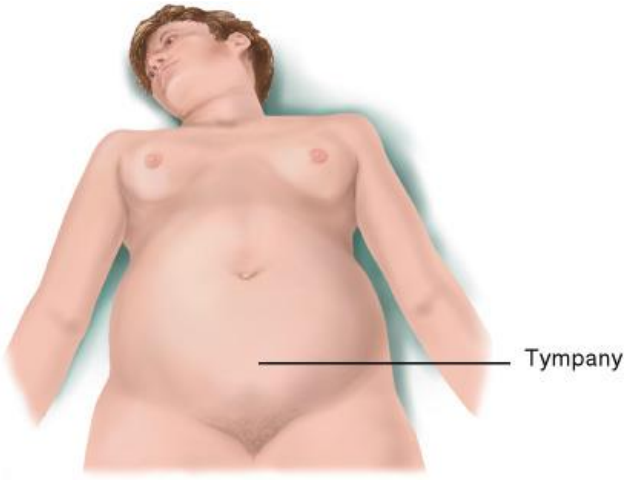


Fig. 21-21

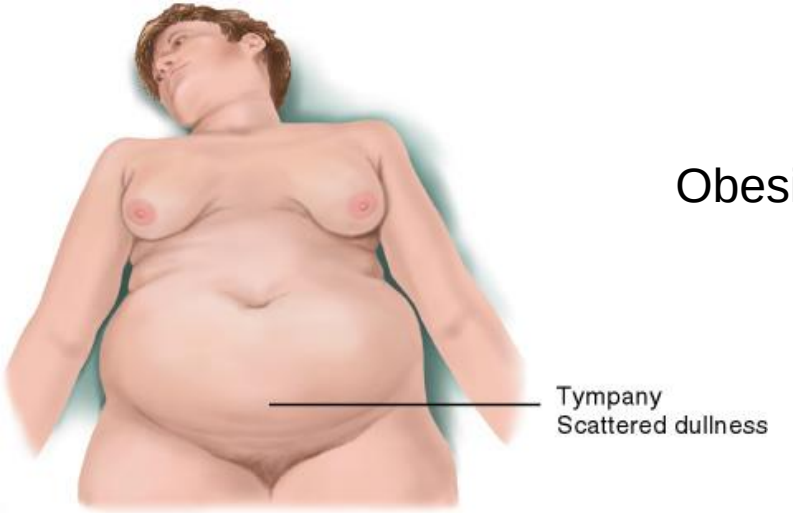
Abdominal Distention



Ascites



Gas



Obesity

Percussion Abnormal Findings

- Enlarged organs, palpable masses, distention, ascites

- Marked tenderness

4. Palpation of Abdomen

- Light palpation- depress about 1 cm. Assess skin pulsations. Always done first- clockwise
- Deep palpation- depress skin about 5-8 cm.
- Always assess tender areas last.
- Watch pt’s expression during palpation

Objective Data

- Palpate the Abdomen
  - Begin with light palpation to assess skin surface & superficial musculature (1-2cm deep)
    - Move clockwise
    - Save tender areas for last
    - Check for involuntary rigidity vs. voluntary guarding
  - Perform deep palpation (5-8 cm deep)
    - Move clockwise exploring entire abdomen
    - If obese, use bimanual technique
    - Note location, size, consistency & mobility of palpable organs or presence of masses or tenderness
      - Mild tenderness over sigmoid colon normal
    - √ rebound tenderness if client reports pain or tenderness during exam

Objective Data/**Palpation**
Light palpation

- Depress the skin about 1 cm


Fig. 21-22

Objective Data/**Palpation**

Deep palpation

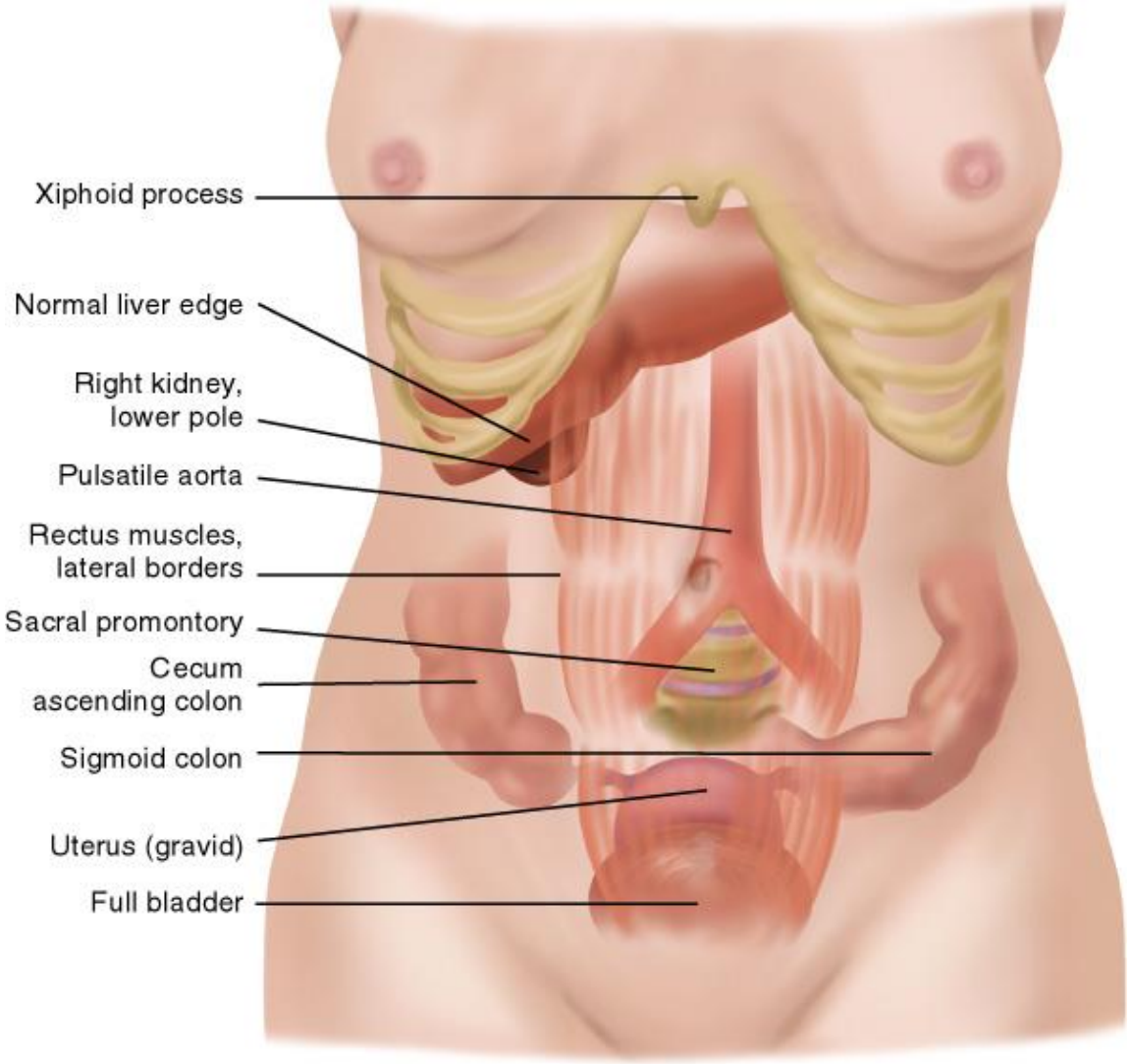
Depress the skin about 5-8 cm

Fig. 21-23

Objective Data/**Palpation**
Bimanual palpation

- To overcome the resistant of a very large or obese abdomen use a bimanual technique


Fig. 21-24



NORMALLY PALPABLE STRUCTURES

Identification of an Abdominal Mass

- Location
- Size
- Shape
- Pulsatility
- Tenderness
- Consistency (soft, firm, hard)
- Surface (smooth, nodular)
- Mobility (including with respiration)

Palpate Liver

- Place (L) hand under back parallel to 11th-12th ribs & lift to support
- Place ® hand on RUQ with fingers parallel to midline
- Push down deeply under costal margin & ask person to take a deep breath
- *Normal:* smooth, firm liver edge palpable or may not be palpable
- *Abnormal:* (+) Murphy's sign → inspiratory arrest during liver palpation indicates cholecystitis
  - May also use "hooking technique"

Objective Data/**palpation liver/ Hooking technique**

This method is useful when the patient is obese or when the examiner is small compared to the patient.

- Stand by the patient's chest.
- "Hook" your fingers just below the costal margin and press firmly.
- Ask the patient to take a deep breath.
- You may feel the edge of the liver press against your fingers.

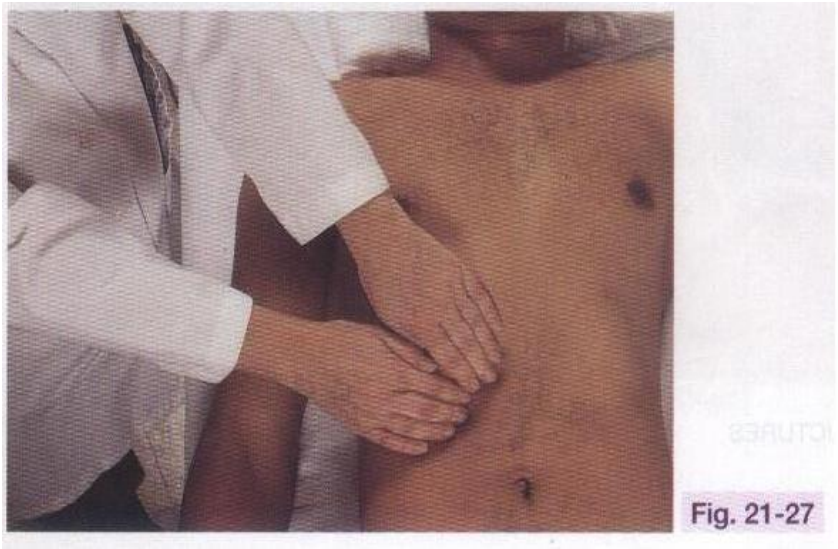


Fig. 21-27

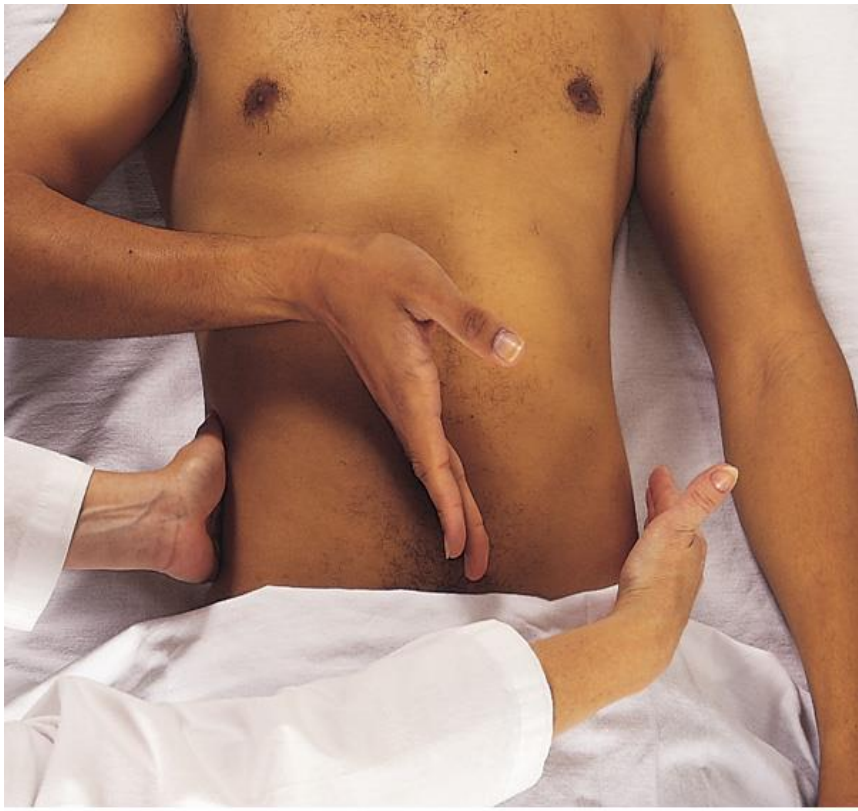
Objective Data
Percuss liver span**(scratch test)**

- Help defining the borders of the liver
- Magnified scratch sound, indicates moving from hollow organ to a solid one.


Fig. 21-16

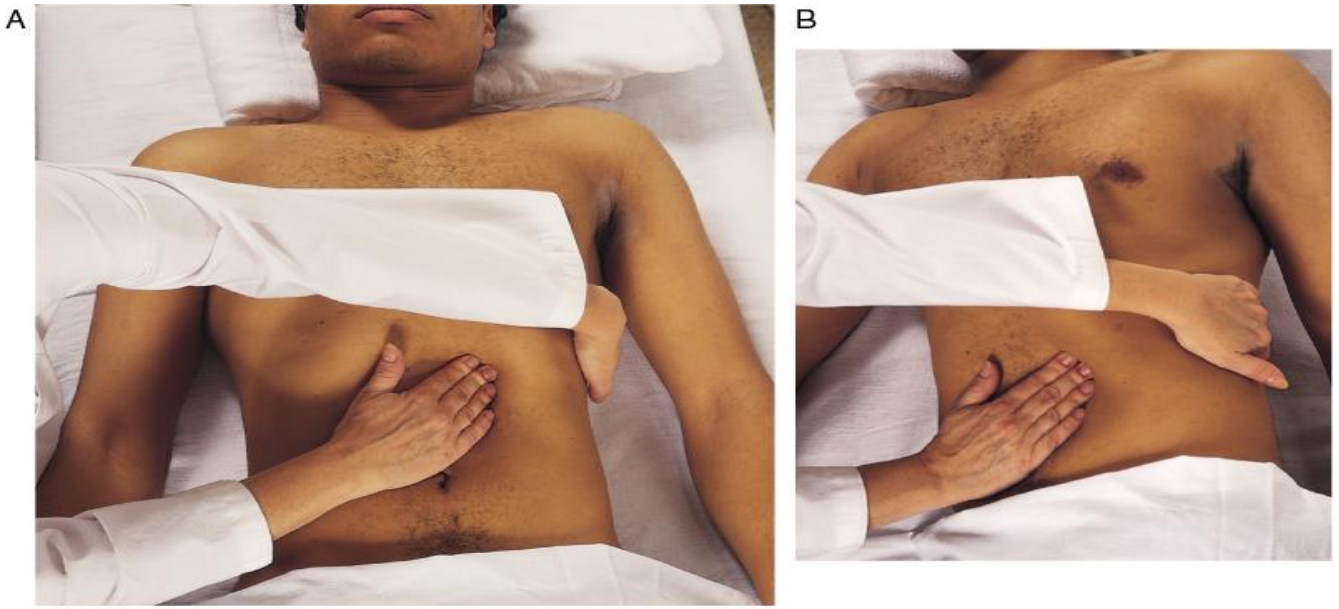
Fluid Wave

- Fluid Wave
  - Have client hold ulnar aspect of hand firmly on midline
  - Examiner puts (L) hand on (R) flank & strikes (L) flank
  - If ascites, feel a distinct tap on (L) hand



Palpate Spleen

- Spleen normally is **NOT** palpable
- Reach (L) hand across abdomen & place behind (L) side at 11^{th}-12^{th} ribs & lift for support
- Place ® hand obliquely on LUQ pointing to (L) axilla, just inferior to (L) costal margin
  - Ask client to take a deep breath
  - You should feel nothing firm



Objective Data

- Palpate the Kidneys
  - Search for ® kidney
    - Placing hands in “duck bill” position at ® flank
    - Press 2 hands together firmly & ask person to take deep breath
    - Need deeper palpation than for liver or spleen
    - *Normal*: lower pole ® kidney round, smooth mass sliding between fingers or nonpalpable

Palpate Kidneys

- Search for (L) kidney
  - Normally not palpable; sits 1cm higher than ®
  - Reach (L) hand across abdomen & behind (L) flank for support
  - Push ® hand deep into abdomen & ask person to breathe deeply
  - Should feel no change with inspiration

Objective Data/**palpation (Aorta)**

- Press down deeply in the midline above the umbilicus.
- The aortic pulsation is easily felt on most individuals.
- Normally, it is 2.5 to 4 cm wide in adult, pulsates in an anterior direction. Greater than this indicates aneurysm

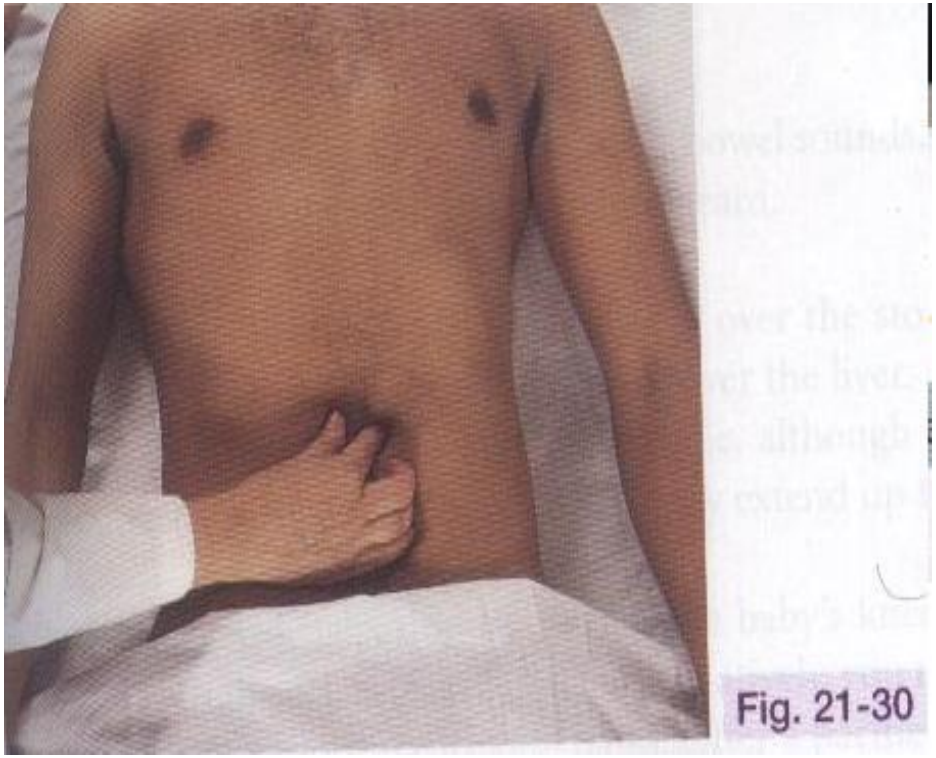


Fig. 21-30

Objective Data/**palpation special procedures**

- Rebound tenderness (Blumberg's sign)
  - This is a test for peritoneal irritation.
  - Warn the patient what you are about to do.
  - Press deeply on the abdomen with your hand.
  - After a moment, quickly release pressure.
  - If it hurts more when you release, the patient has rebound tenderness

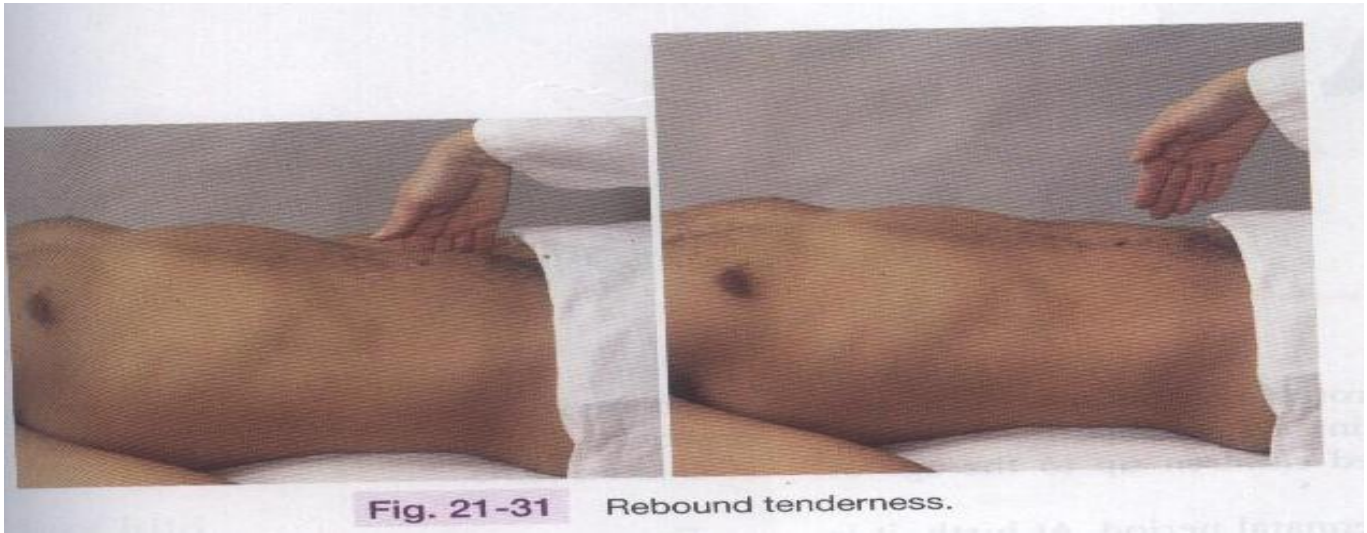


Fig. 21-31 Rebound tenderness.

Palpation Abnormal Findings

- Tenderness- rebound- done away from painful area- done at end of exam
- Masses- document location, size, shape, mobile, pulsating, smooth, nodular, firm
- Firmness or muscle guarding/rigidity- intraabdominal bleeding- DO NOT CONTINUE TO PALPATE!!!!!!

Special Procedures

- Murphy's Sign- "inspiratory arrest" palpate the liver should be painless= cholecystitis
- Cullen's Sign- bluish discoloration around the umbilicus EMERGENCY!!!
- Kehr's Sign- abd pain radiating to R shoulder= spleen or pancreatitis

Objective Data/**palpation**
special procedures

Iliopsoas muscle test

- Used when acute abdominal pain or appendicitis is suspected
- Pt. supine, lift the right leg straight up, flexing at the hip
- Push down over lower part of the right thigh while pt. trying to hold it up
- Feeling no change – means the test is negative

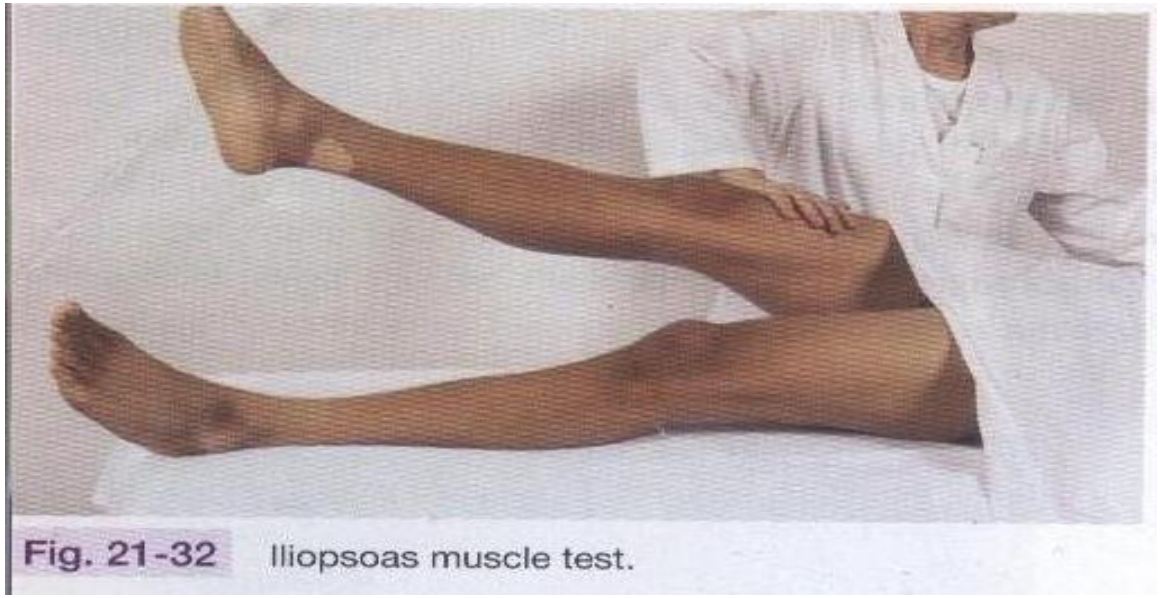


Fig. 21-32 Iliopsoas muscle test.

Objective Data/**palpation**
special procedures

Obturater test

- Raise the patient's right leg with the knee flexed.
- Rotate the leg internally at the hip.
- Increased abdominal pain indicates a positive obturator sign.

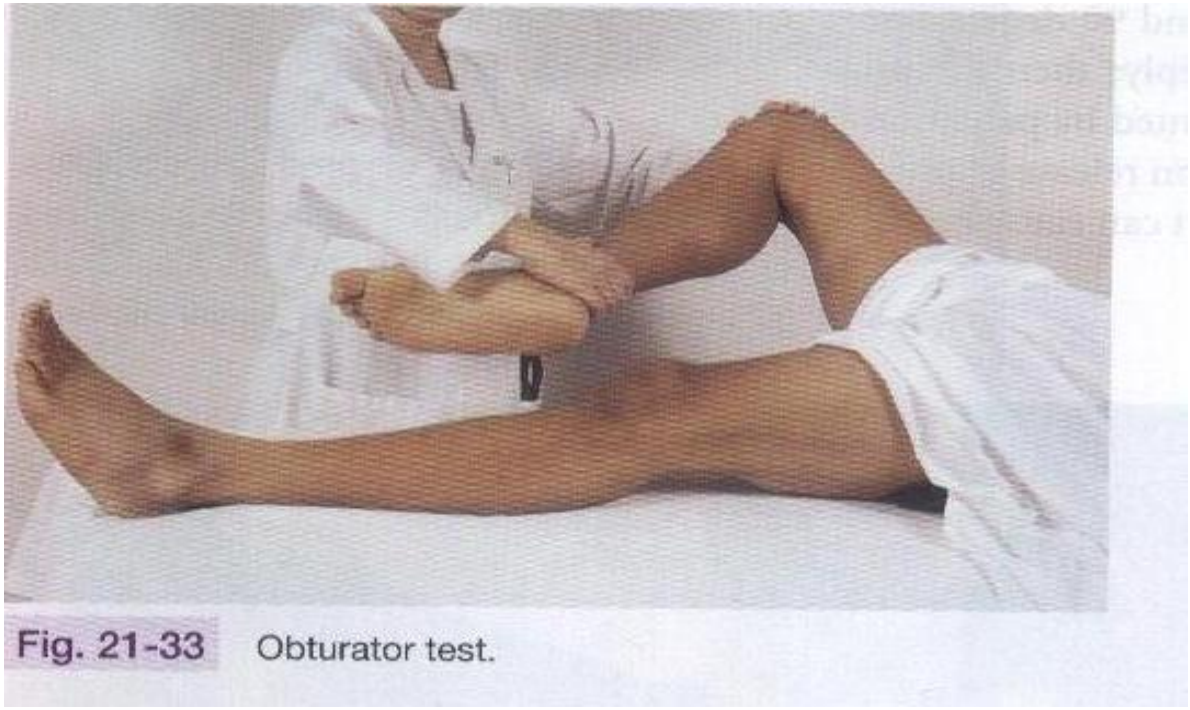
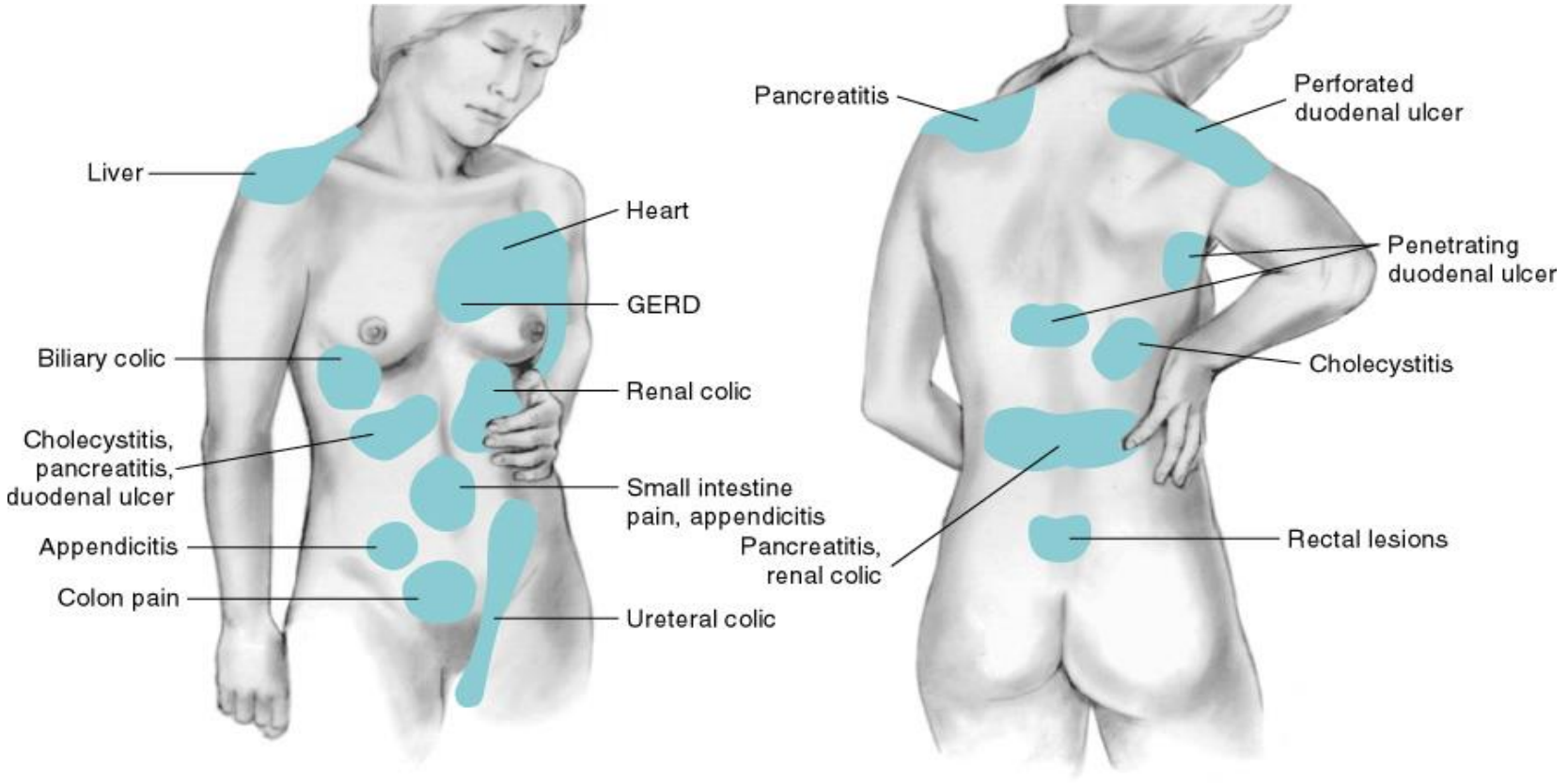


Fig. 21-33 Obturator test.

Referred pain- location of pain is not necessarily where the involved organ is! May be felt where the organ was located in fetal development ex: spleen= L shoulder pain/ kidney= groin pain



Sample Charting

- *Subjective Da*ta:
  - States appetite is good with no recent change, no dysphasia, no food intolerance, no pain, no N/V. Has one formed BM/day. Takes vitamins, no other prescribed or over the counter medication. No history of abdominal disease, injury, or surgery.
- *Objective Data:*
  - Inspection: Abdomen flat, symmetric with no apparent masses. Skin smooth with no scare.
  - Auscultation: Bowel sounds present, no bruits.
  - Percussion: Tympany predominates in all four quadrants, liver span is 8 cm in RT MCL. Splenic dullness located at 10^{th} intercostals space in LAL.
  - Palpation: Abdomen soft, no organomegaly, no masses or tenderness.

Thank you for Listening