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JUST

NUR 206 – Fall 2015

Objectives

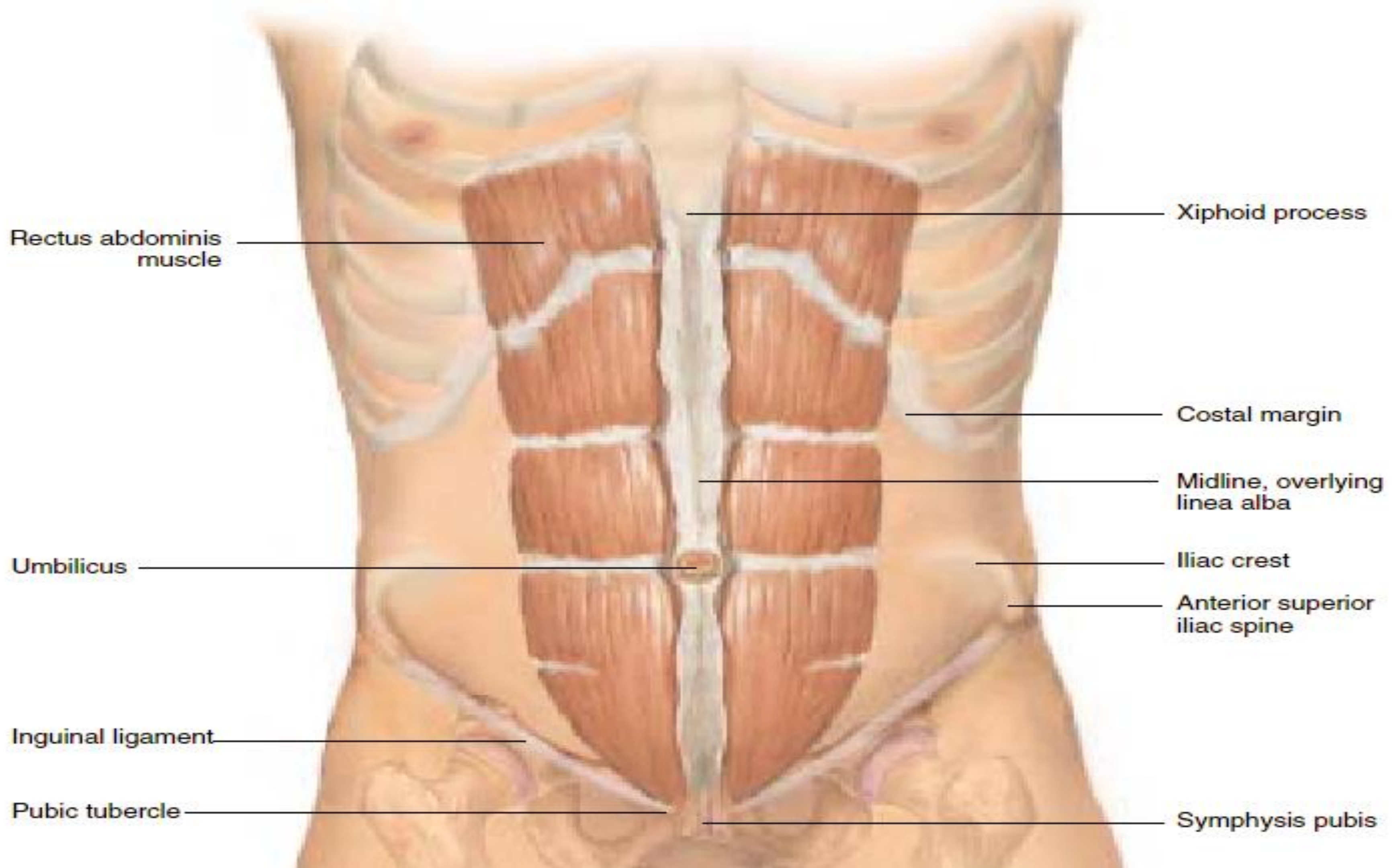
- At the end of this lecture regarding abdominal examination the student will be able to:

- 1-Identify landmarks for the abdominal assessment
- 2-Correctly perform techniques of inspection, auscultation, percussion and palpation
- 3-Differentiate normal from abnormal findings
- 4- Identify the significant diagnostic procedures related to this system

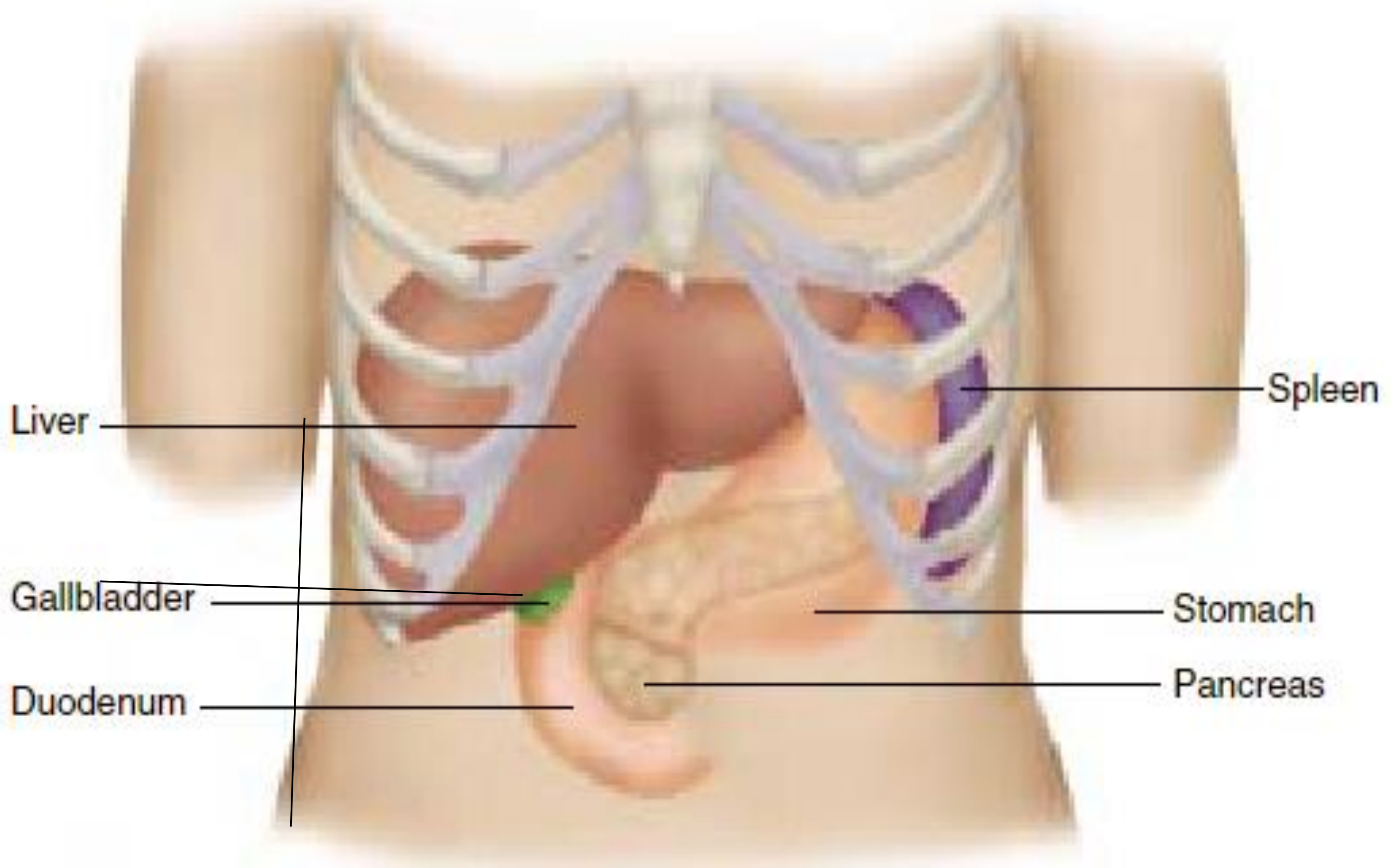
Structure and Physiology

- Inside the abdominal cavity, **all the internal organs are the viscera.**
- **Solid viscera**: those that maintain characteristic shape (Liver, Pancreas, Spleen, Adrenal glands, kidneys, Ovaries, and Uterus.
- **Hollow Viscera**: Stomach, Gallbladder, Small Intestine, Colon, and Bladder.

Anatomy of the Abdomen

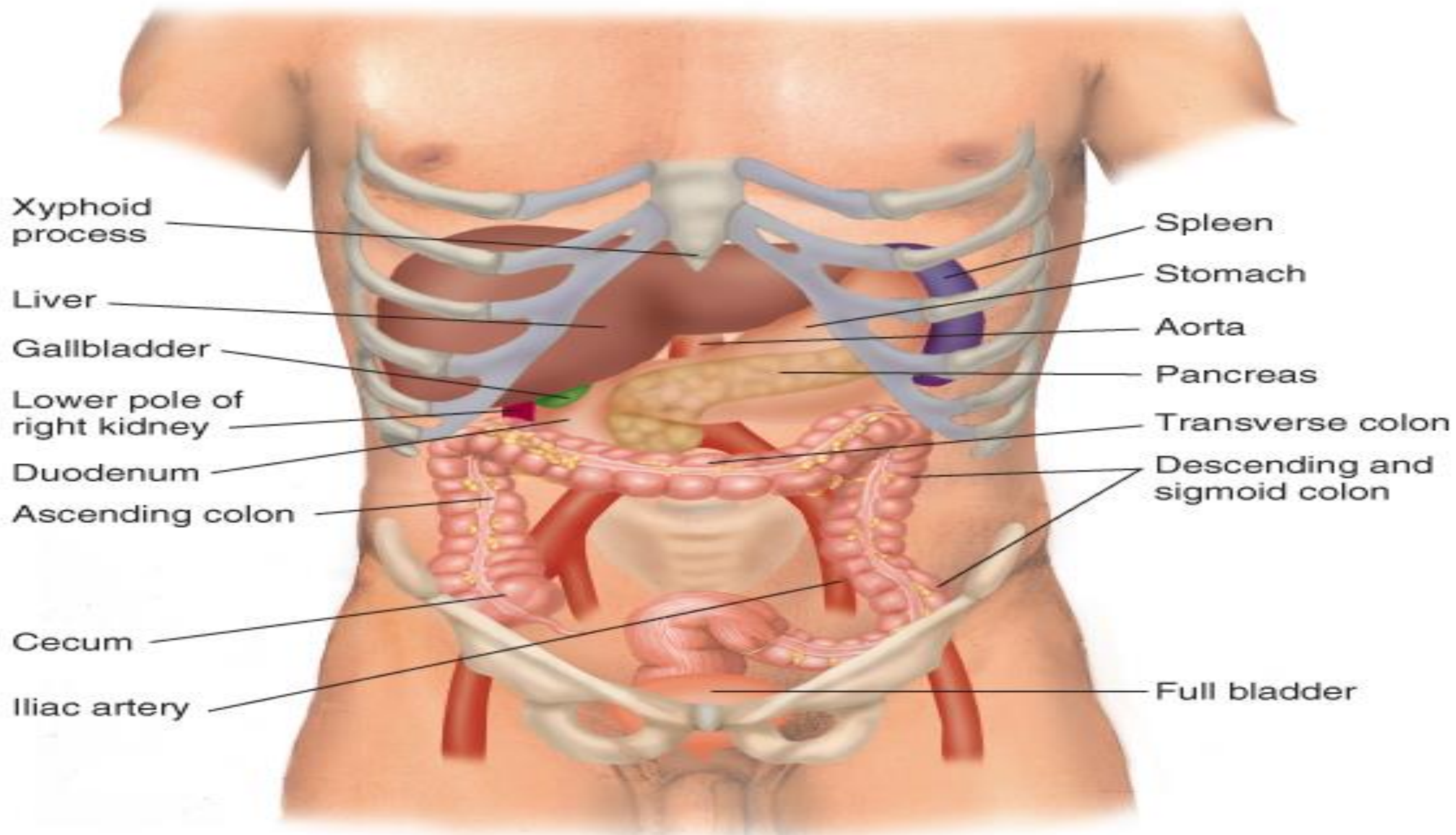


Anatomy and Physiology of the Abdominal Wall and Pelvis



ANTERIOR VIEW

Anatomy of the Abdomen (cont.)



Abdominal Cavity

ABDOMINAL VISCERA (ANTERIOR VIEW)

right dome of diaphragm

liver

fundus of gallbladder

duodenum (small intestine)

pancreas (body continues in outline behind stomach)

ascending colon

cecum

appendix

spleen

stomach:
body
pyloric region

transverse colon

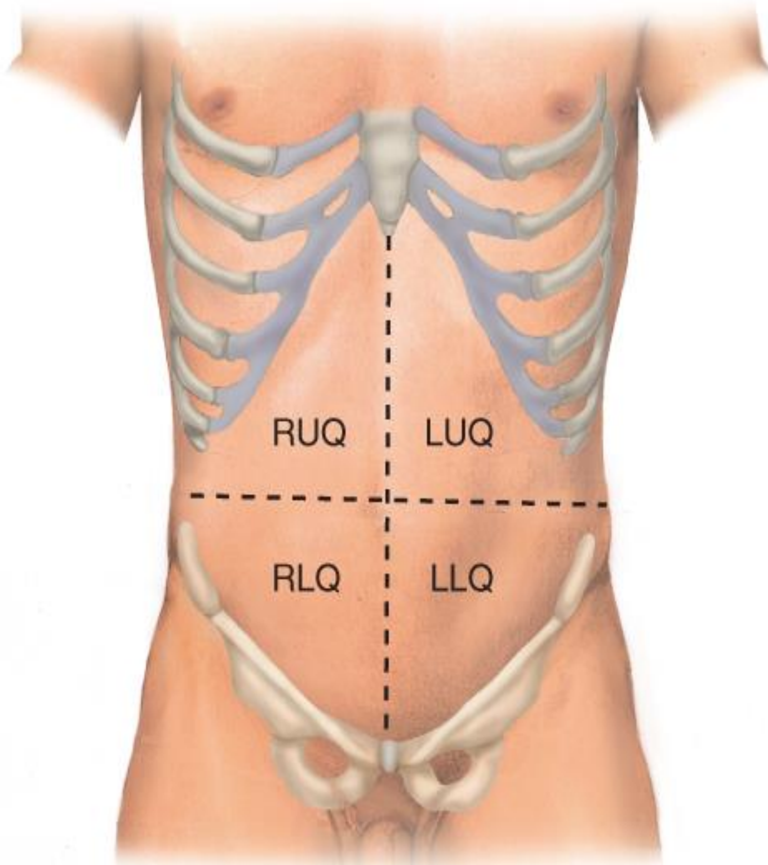
small intestine:
jejunum
ileum

anterior superior iliac spine

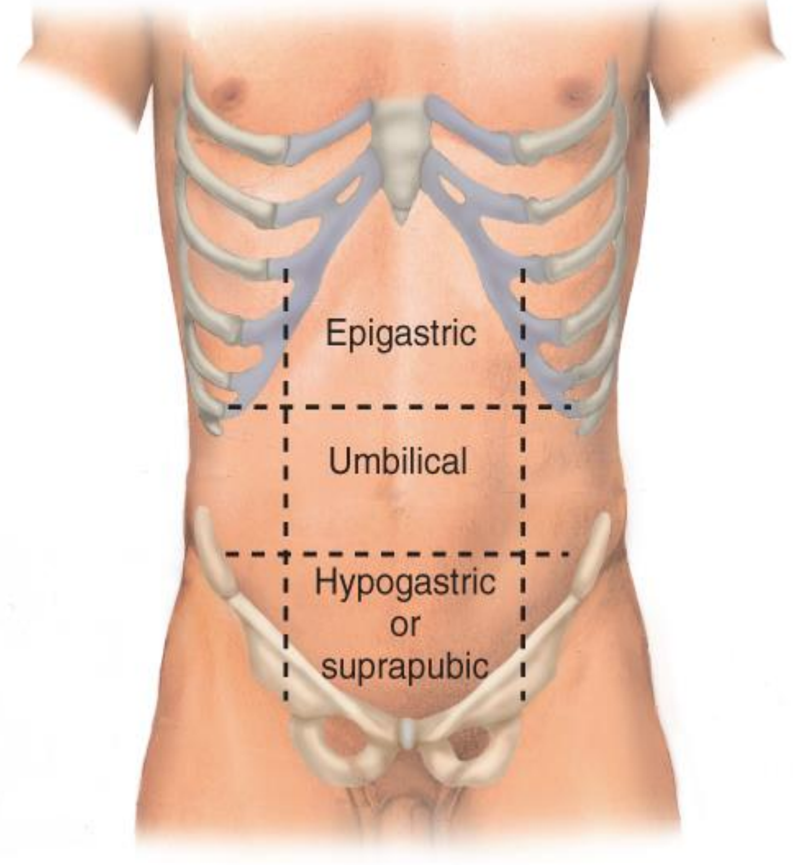
descending colon

urinary bladder

Anatomy of the Abdomen (cont.)

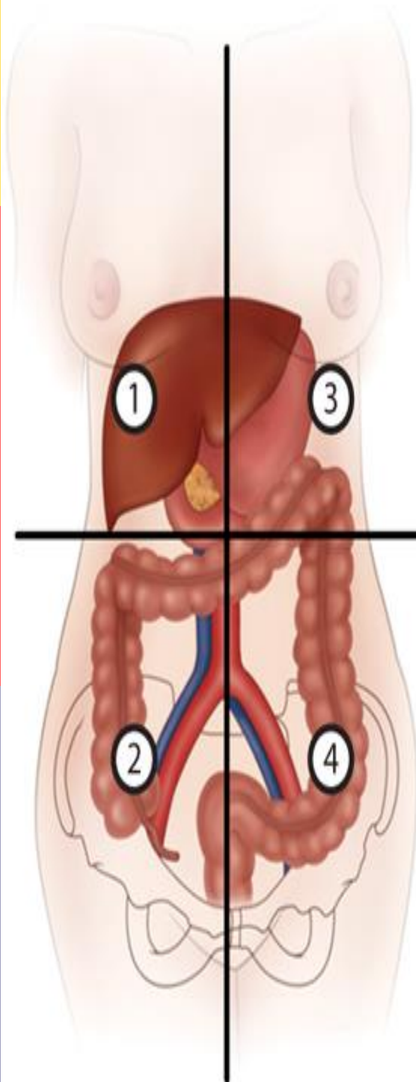


Dividing the Abdomen
into Four Quadrants



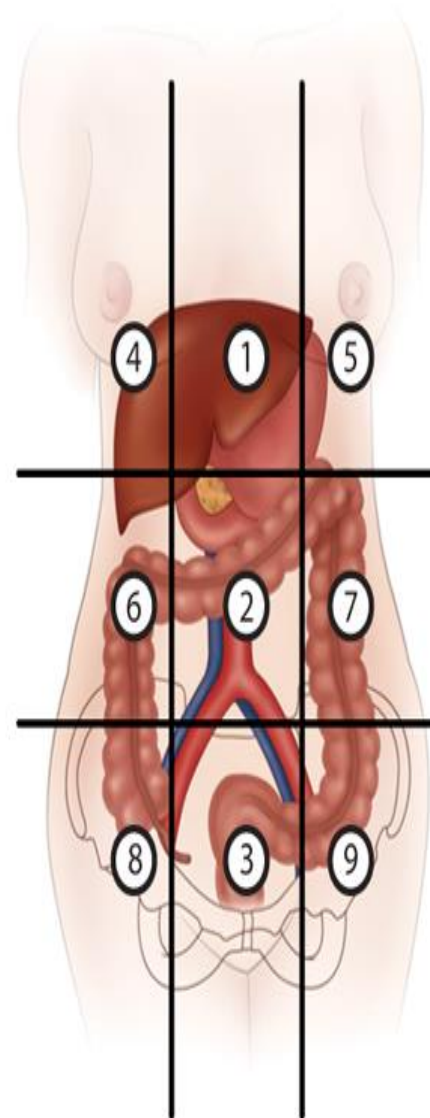
Dividing the Abdomen
into Nine Sections

Quadrants of the Abdomen



Four quadrants

1 - right upper quadrant (RUQ)
2 - right lower quadrant (RLQ)
3 - left upper quadrant (LUQ)
4 - left lower quadrant (LLQ)



Nine regions

1 - epigastric region
2 - umbilical region
3 - hypogastric or suprapubic region
4 - right hypochondriac region
5 - left hypochondriac region
6 - right lumbar region
7 - left lumbar region
8 - right inguinal region
9 - left inguinal region

Right Upper

- Liver, gallbladder
- Pylorus, duodenum
- Head of pancreas
- Ascending/transverse colon
- Right kidney/adrenal

Right Lower

- Right kidney and ureter
- Cecum/appendix/ascendin g colon
- Ovary, fallopian tube
- Uterus/bladder (if enlarged)

Left Upper

Liver (left lobe)

Spleen

Stomach

Body of pancreas

Descending/transverse colon

Left kidney/adrenal

Left Lower

Left kidney and ureter

Sigmoid/descending colon

Ovary/fallopian tube

Uterus/bladder (if enlarged)

Internal structure

- **Sigmoid colon**. Palpable as a firm, narrow tube in the LLQ.

- **secum** & part of **ascending colon** form a softer wider tube in the RLQ.
- **Liver:** below **right** costal margins.
- **Pulsation of the aorta:** felt in the *upper* abdomen.
- **Pulsations of iliac artery** is felt in the *lower* quadrants.
- **Spleen** lies at the *level of the diaphragm* at the level of *9th 10th and 11th* ribs mostly posteriorly to midaxillary line.
- **Not palpable**:
  - **Gallbladder** (lies deep in the liver),
  - **duodenum & pancreas** (lie deep in the upper abdomen)

Subjective Data: Gastrointestinal Disorder

- **Indigestion, Nausea, Vomiting** including blood**, loss of appetite, abdominal fullness or early satiety**
  - **hematemesis?!**
  - **Anorexia**,
- Dysphagia and /or odynophagia
- Change Bowel Habits
  - Diarrhea, constipation
    - **Black tarry or non-tarry stool**
    - **Melena**
- Jaundice
- **Abdominal pain** (acute & chronic)
  - **Visceral**: when **hollow organs** (stomach, colon) forcefully contract or distended. **Solid organs** (liver, spleen) can generate pain when they swell against their capsules. Visceral pain is usually gnawing, cramping, or aching and squeezing & often difficult to localize (hepatitis)
  - **Parietal**: Due to inflammation from hollow or solid organs that affect the parietal peritoneum. Parietal pain (sharp, easily localized, increased by movement or coughing (appendicitis).
  - **Referred**: originates at different sites but shares innervation from the same spinal level (gallbladder pain in the shoulder)

Abdominal Pain
Acute Upper abdominal pain

- determine the **time** of pain.
  - Is it **acute or chronic**? Did the pain start **suddenly or gradually**? How long does it **last? Onset & Duration**: How did it start? how long have you had it?, **Constant** pain or come and go? occur **before or after meal?**
- Ask the pt. to rank the **severity** of the pain on a scale of 1-10
- **Aggravating & Reliving factor**: does it relived by **food**? Or worse by it? Use of **antacids**.
  - **Indigestion or discomfort** is related to **exertion** & relived by **rest**.
- **Associated S&S**: menstrual irregularities, stress , nausea &vomiting, gas, fever, rectal bleeding.
- **Self behavior**: what have you tried to relieve pain?
- Ask pt to describe the pain in their **own words**. where does it the pain start? Does it radiate?
- Ask pt. to **point to the pain**. The quadrant where the pain is located can be helpful.

Chronic upper abdominal pain

- **Dyspepsia**: chronic or recurrent **pain** centered in **upper abdomen (stomach)**
- **Discomfort**: subjective **negative feeling** that is **nonpainful**, such as bloating, nausea, heartburn

-bloating occur with inflammatory bowel disease

-belching from aerophagia or swallowing air.

- Heartburn is a rising **retrosternal burning** pain or discomfort.

  - **Gastroesophageal reflux disease** (GERD): pt complain of **hartburn, acid reflux or regurgitation**.

- **Alarm symptoms** such as **dysphagia** (difficulty swallowing) **odyophagia** (pain with swallowing), recurrent **vomiting, wt. loss, anemia**

Lower abdominal pain acute & chronic

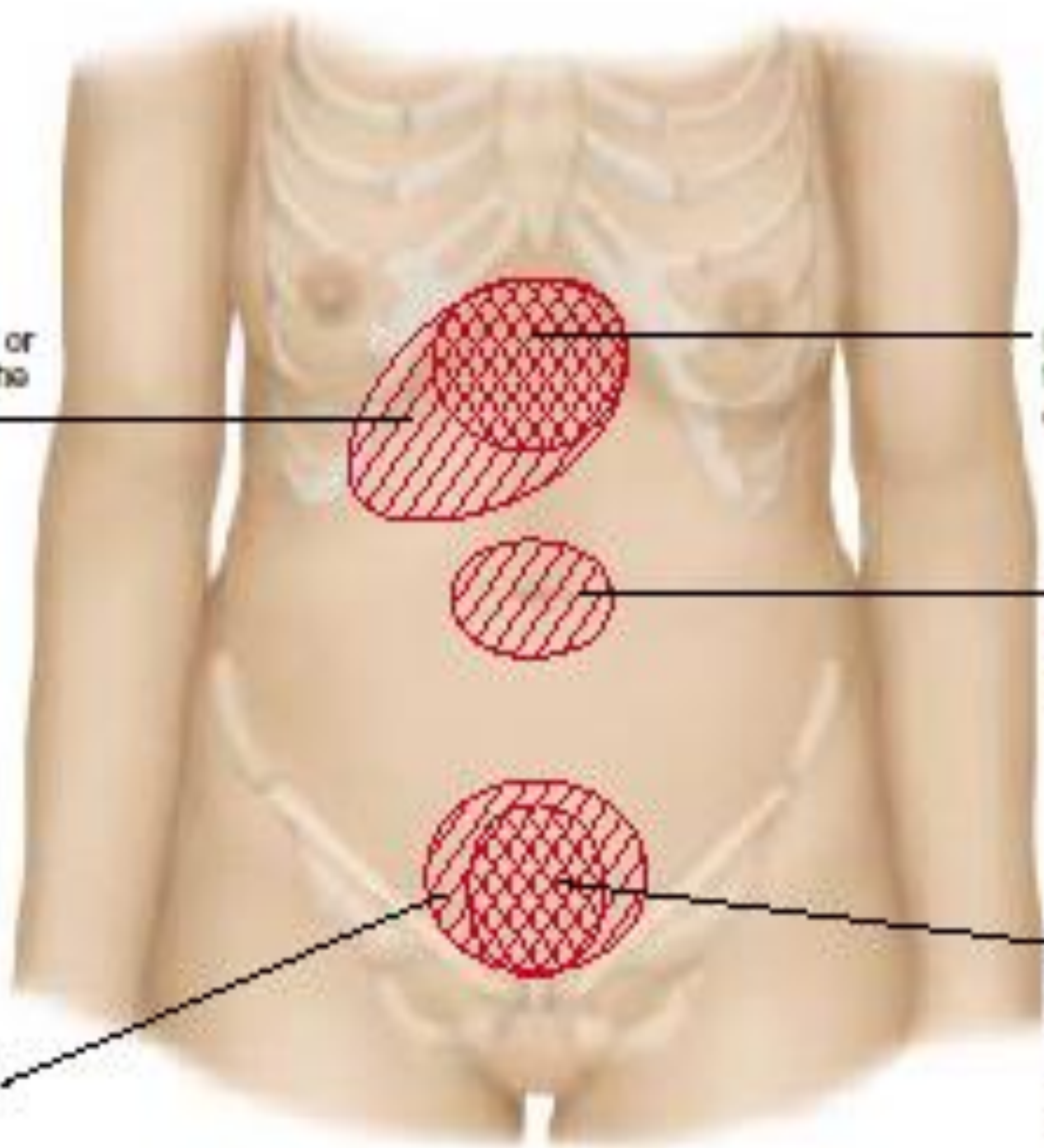
- Sharp & continues or intermittent & cramping (renal stone)

- Change in bowel habits (chronic pain)

- **Visceral pain;** usually **dull**; **difficult to localize. Varies** in **quality** may be **gnawing, burning, cramping, aching and squeezing**. When it becomes severe may associated with sweating, pallor, nausea, vomiting & restlessness.

- **Parietal pain:** Parietal pain is usually **intense & aggravated by movement or coughing (pt. prefer to lie still).** Easily to l**ocalized** over the inflamed structure.

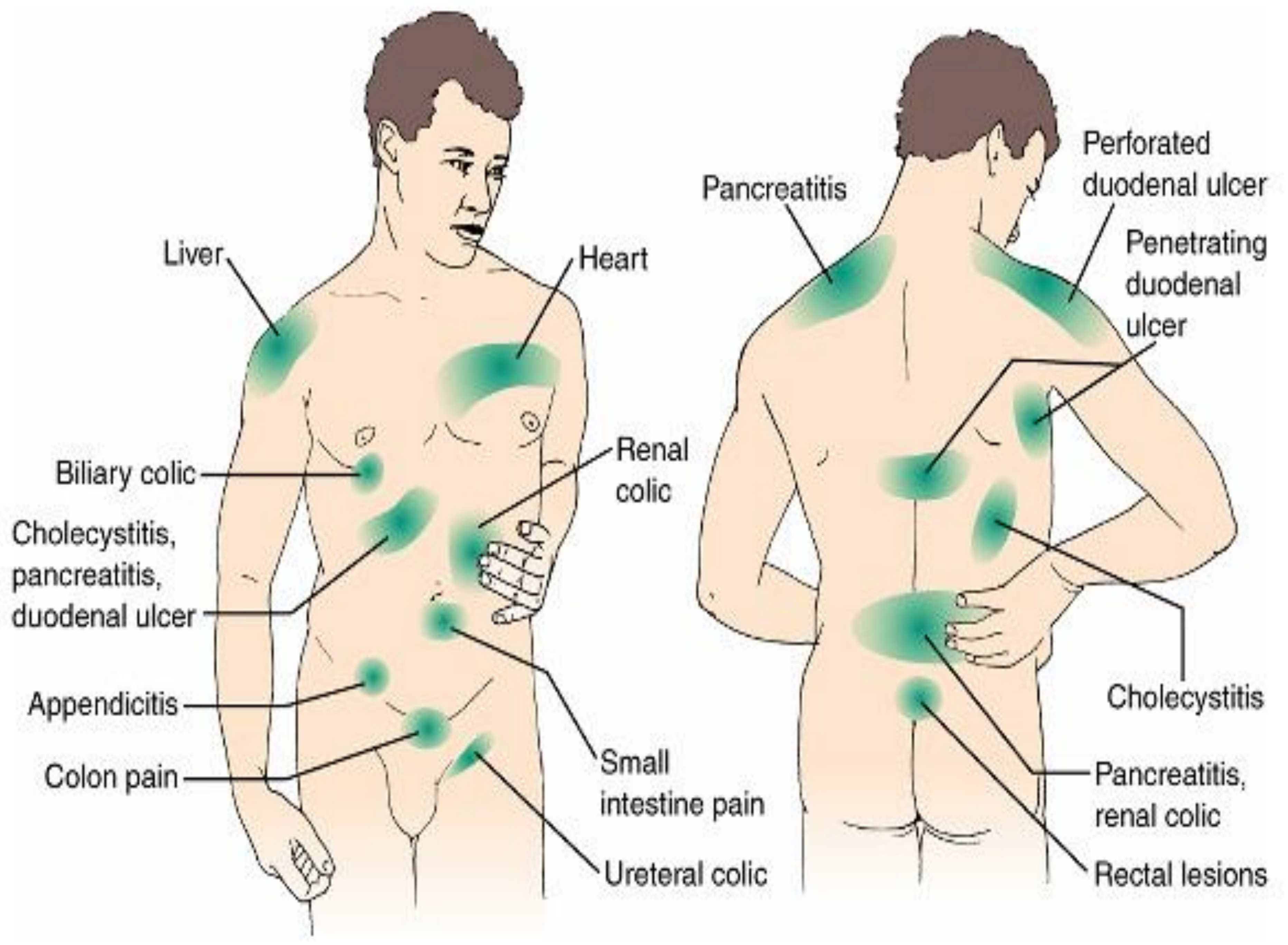
- **Referred pain** occurs with specific *gastrointestinal disorders* such as **appendicitis** (umbilical pain in early stages), **gall bladder** disease (referred to right shoulder), and **pancreatitis** (referred to the mid-back).



Types of visceral pain

Common sites of Referred pain

- **Liver**: **mild to moderate dull pain** in **RUQ or epigastria.**
- **Gallbladder**: **Sudden pain** in **RUQ** that may radiate to the RT or LT scapula, associated with **N&V**, **following ingestion of fatty foods .**
- **Pancreas**: **acute boring mid epigastria** pain radiating to the back and some to the LT scapula or flank with sever N&V.
- **Appendix**: start as a **dull**, **diffused** pain in **periumbilical origin** → later shifted to sever, sharp, persistent pain and tenderness localized in RLQ.



Liver
Heart
Biliary colic
Renal colic
Cholecystitis, pancreatitis, duodenal ulcer
Appendicitis
Colon pain
Small intestine pain
Ureteral colic
Pancreatitis
Perforated duodenal ulcer
Penetrating duodenal ulcer
Cholecystitis
Pancreatitis, renal colic
Rectal lesions

GI symptoms associated with abdominal pain

- **Nausea** (feeling sick to my stomach) may progress to retching & vomiting.
- **Retching**: involuntary spasmodic movement of the chest & diaphragm like vomiting, but no stomach contents are passed)
- **Vomiting** indicate small bowel obstruction
  - **Hematemesis**: vomits coffee ground emesis or red blood.
  - food, or mucus
  - green- or yellow-colored bile,
- **Anorexia**: loss or lack of appetite
- **Abdominal fullness or early satiety** (inability to eat a full meal)

Continue

- **Change in bowel function**: how are your bowel movement?

- **Diarrhea**: stool volume more than 200 grams in 24 hours; watery, ↑ frequency; duration **acute** lasts 2 weeks or fewer, **chronic** lasting 4 weeks or more. --- **Any mucus, pus, or blood**.

  - Any **tenesmus** (constant urge to defecate).

  - **Steatorrhea** (fatty diarrhea stool RT malabsorption).

- **Constipation**: present for at least 12 weeks of the prior 6 months; fewer than 3 bowel movements per week, straining, hard stool. **Describe color, bulk**.
- **Obstipation** (no passage of either feces or gas in intestinal obstruction).

- **Melena or tarry** stools (bloody stool) appear as **100 ml** of upper GI bleeding, while **hematochezia** if **(> 1000 ml** blood from lower GI bleeding.

Continue

- **Jaundice**: yellowish discoloration of the **skin**. Increased level of bilirubin. **Urine** color: dark yellowish brown or tea color (when **conjucated bilirubin increase** in the blood), **stool color**: ***gray*** *or light or* ***acholic*** without bile (in **obstructive jaundice).**
  - Hepatitis
  - Alcoholic hepatitis or cirrhosis
  - Gall bladder disease.

Subjective Data
Urinary & renal disorders

- **pain with urination**
  - **Aching in suprapubic area** (**bladder** disorder).
  - **burning** at urethra.
- **Dysuria** (**difficulty voiding**),
- *urgency* (intense & immediate desire to void but very little urine is passed): lead to *incontinence*, or *frequency* (frequent void)
- ***Hesitancy***, decreased stream in males
- **Polyuria** (increase in 24 hour urine **volume more than 3 L**). **Nocturia** (urinary frequency at night)
- **Urinary incontinence** involuntary leakage of urine
- **Hematuria**: blood in the urine
- **Kidney or flank pain**: back posterior costal margin near the costovertebral angle.
- **Ureteral colic or pain**: obstruction of a ureter.

Preparation:

- **Good lighting**.
- **Expose** abdomen with taking in consideration the patient **privacy**.
- Promote **abdominal wall relaxation** through:

1) **Emptying** the bladder.
2) keep **warm environment**.
3) Maintain patient in **supine position**, with **head in** the pillow and **knee** bent or in the pillow, **hands** at the side or across

4) Use **warm stethoscope**, warm hands and short finger nails.
5) **Examine painful areas at the last.**
6) Use **distraction technique** like, breathing exercise, imagery, and low soothing voice.

Abdominal Examination Technique order :

- Inspection.
- Auscultation.
- Percussion.
- Palpation.

Why?

Objective Data - Inspecting the abdomen

Inspect the **surface, contours, & movement** of the abdomen including:

- **Skin:**
  - -**Scars**: describe location
  - -**Striae**; Old silver striae or stretch marks
  - -**Dilated veins**: few small visible veins: normal
  - - **rashes & lesions**
- **Umbilicus**: **contour, location**, any inflammation, or bulges suggesting a hernia. Table 11-8 .p. 464
- **Contour** of the abdomen: flat, rounded, protuberant, or scaphoid (concave). Table 11-9 .p. 465

Continue

- **Symmetry**

  - **Abnormalities**: bulges, masses, Hernia (protrusion of abd viscera through abnormal opening in muscle wall).
  - **Any visible organs or masses**: enlarged liver, spleen

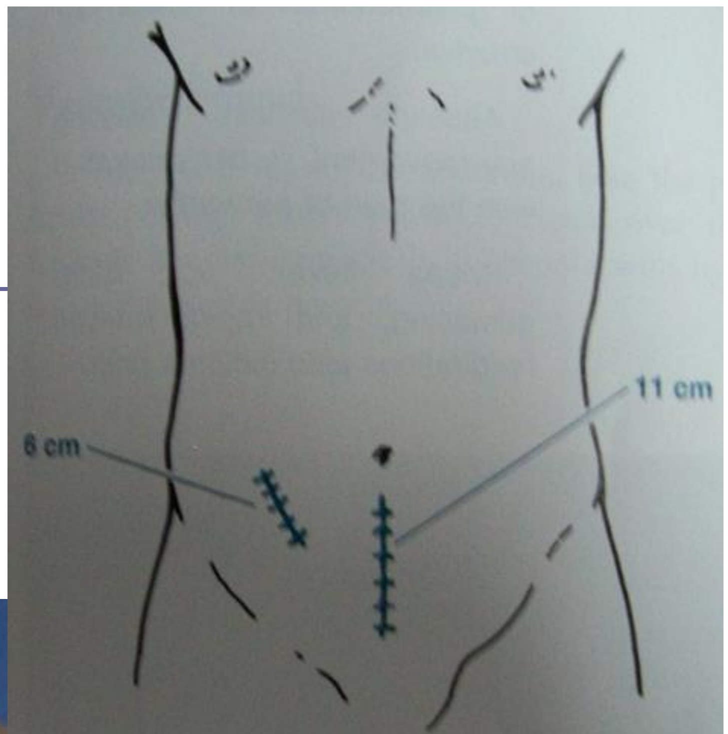
- **Pulsation / peristalisis:**

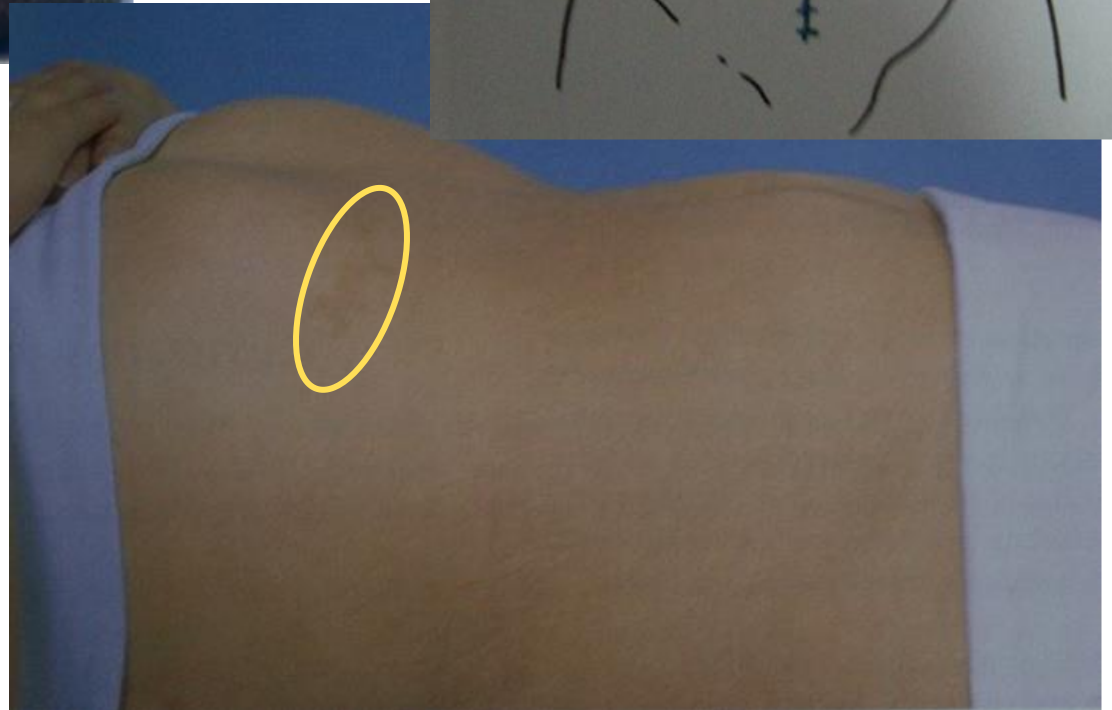
- Normal finding: **aortic pulsation** *may* be seen beneath the skin in the **epigastric area**, particularly in the person with good muscle wall relaxation.

peristalsis waves *sometimes* visible in thin people.

- Abnormal findings: **marked pulsation** of aortic with **widening pulse pressure(aortic aneurysm)**. **Increased peristalsis,** together with distended abdomen, indicate intestinal obstruction

Striae





Auscultation

****It is performed before percussion or palpation**

Auscultation

Auscultation provides important information about

- bowel motility
- Bowel sounds
- **Vascular sounds or** Bruits (vascular occlusive disease),

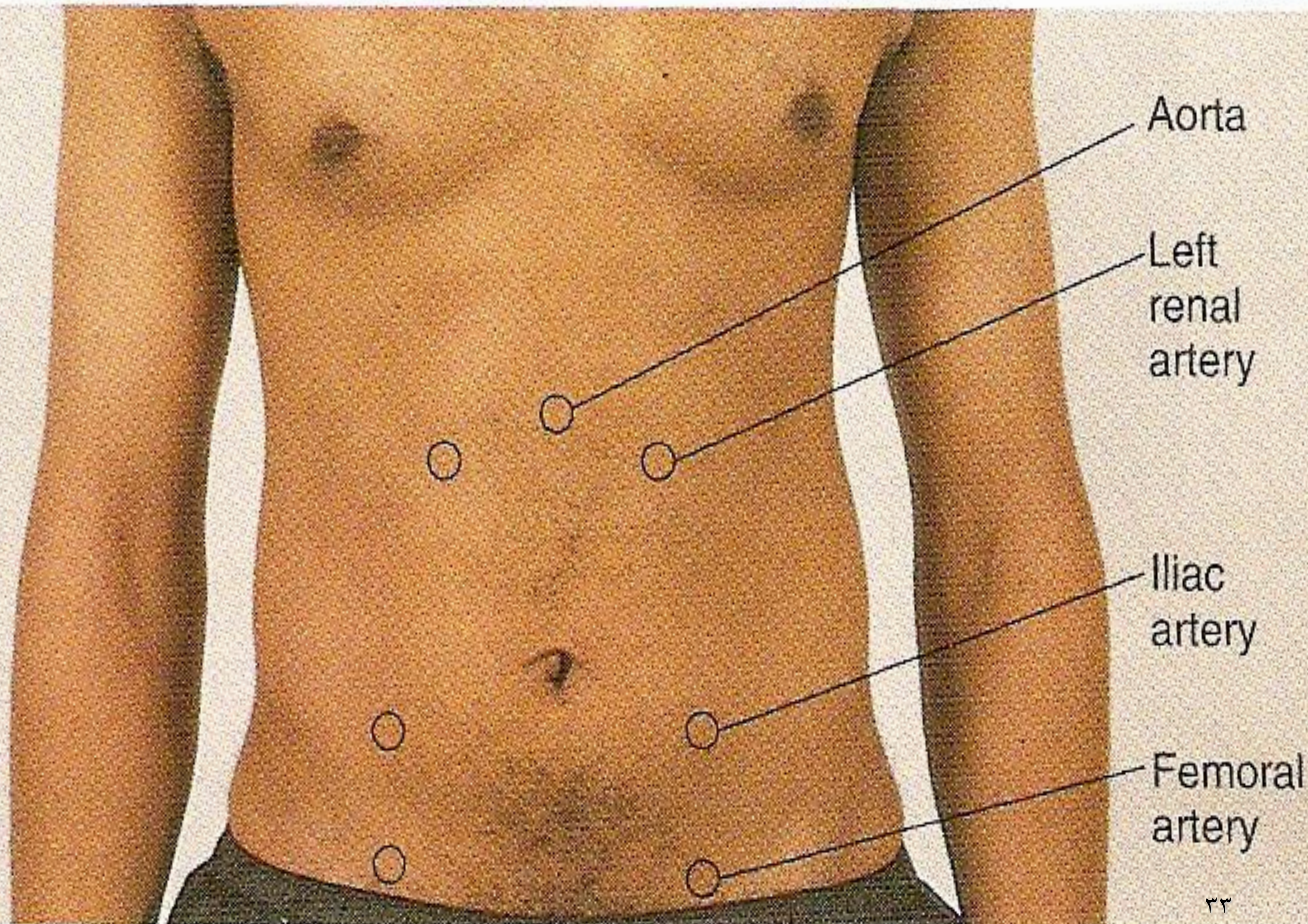
Table 11-10 p. 466 (abdominal sounds)

Auscultation

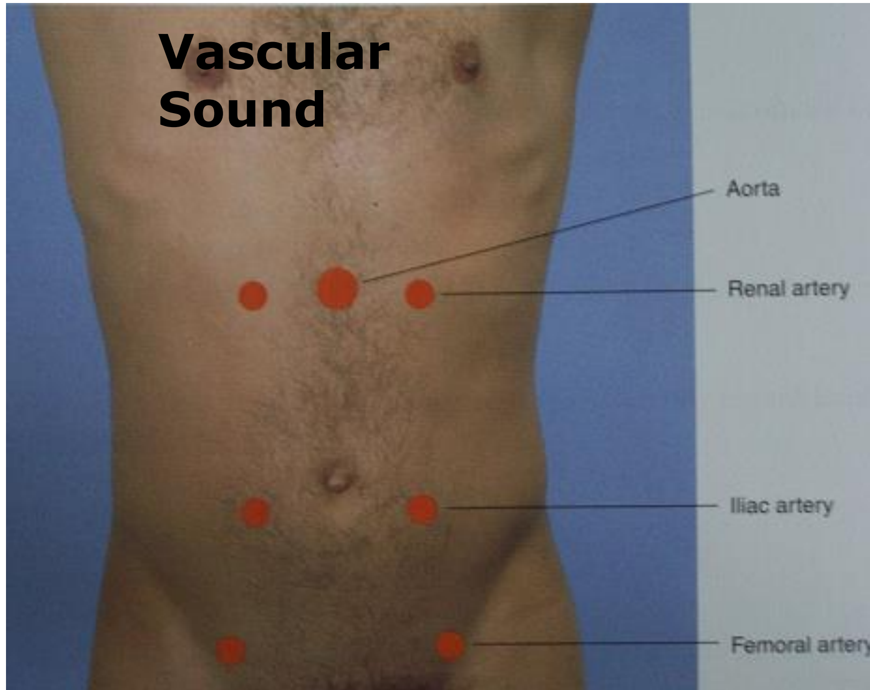
- ***Bowel Sounds*****:** by using the **diaphragm** of stethoscope, note their **freq. & character**. bowel sounds consists of **clicks & gurgles**, occurring at an estimated freq. of **5-34 per min.**

Borborygmi (stomach **growling): prolonged gurgles** of hyperperistalsis.

- **Abdominal bruits & friction rub:** check over the **aorta, iliac and femoral arteries** (especially in people with HTN), listen to and note the presence of **bruits** (indicate arterial insufficiency). Listen **over the liver & spleen** for **friction rub** (indicate tumor, liver infection , splenic infarction)


Aorta
Left
renal
artery
Iliac
artery
Femoral
artery

Auscultation of the Abdomen



Bruits, or peritoneal friction

Note: **location, pitch, & timing** of any abnormal sound

Normally: high pitched, **gurgling**, flowing sound, freq. **5-34/min**

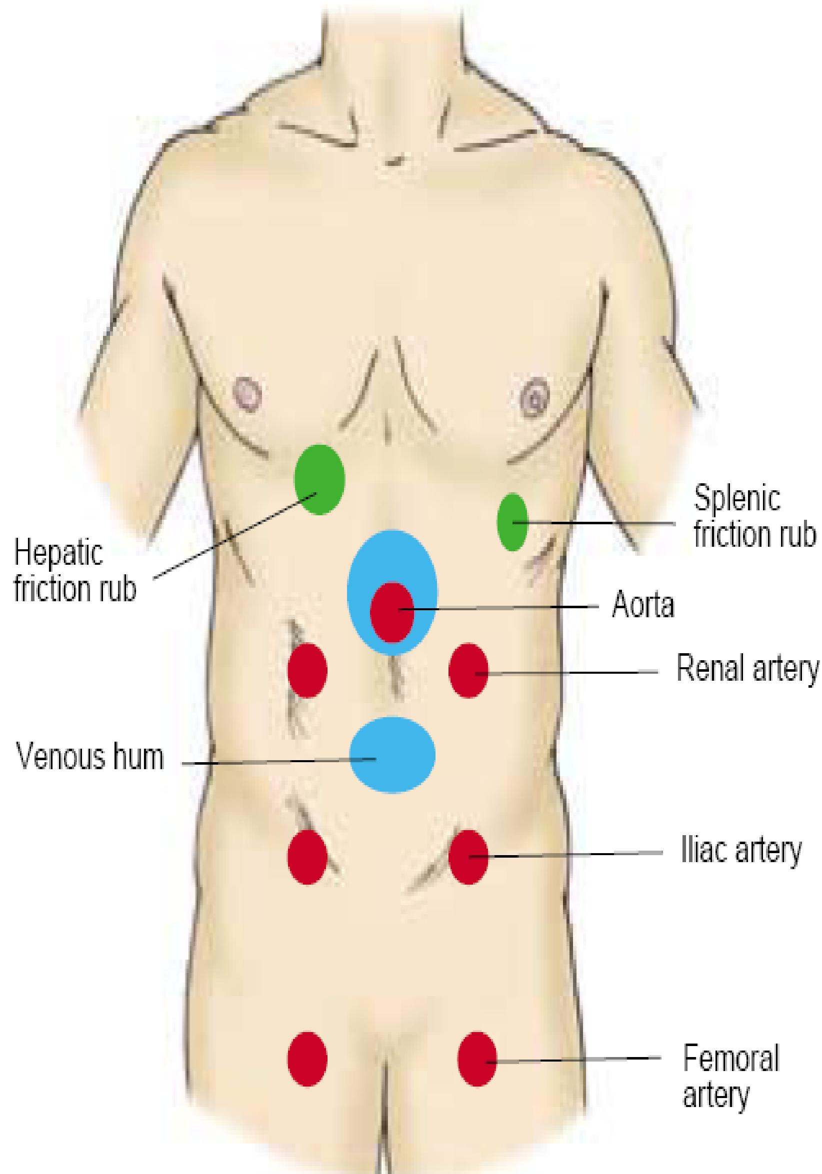
Hyper active: **loud, high-pitch, rushing**; i.e. stomach growling (**borborygmus)**

Hypoactive or absent: following **abd Surgery**; listen for **5 minutes** before decide a complete silent abd.

Using the bell of the stethoscope, listen for a venous hum in the epigastric and umbilical areas.

Venous hum is not normally heard over the epigastric and umbilical areas.

Venous hums are rare. However, an accentuated venous hum heard in the epigastric or umbilical areas suggests increased collateral circulation between the portal and systemic venous systems, as in cirrhosis of the liver.



Bowel Sound	How it is Produced	Possible Cause
Normal Bowel Sounds	Intestines transporting fluid and digested food through intestinal lumen at normal rate	Normally functioning intestine
Hypoactive Bowel Sound	Intestines transporting fluid and digested food through intestinal lumen at a decreased rate probably due to inactivity of smooth muscle in the bowel	Paralytic ileus Peritonitis Decreased bowel motility Late intestinal obstruction
Hyperactive Bowel Sound	Intestines transporting fluid and digested food through intestinal lumen at an increased rate probably due to rapid passage of air and fluid through the intestines	Diarrhea Early intestinal obstruction
High-pitched Rushing Sounds	Intestinal straining to push fluid and air past an obstruction	Intestinal obstruction
High-pitched Tinkling Sounds	Intestinal fluid and/or air under pressure	Dilated bowel loops Fecal impaction
Absent Bowel Sounds	Absence of intestinal motility Ominous finding	Peritonitis Late Obstruction Perforation Trauma
Abdominal Bruits	Wooshing sound over an artery from increased turbulence of blood flow in that artery	Aneurysm Thin, emaciated patient Renal artery stenosis

(Agone et al., 1997; Jarvis, 1996; Shaw, 1998)

Percussion

- To assess the **amount & distribution of gas**
- To identify **masses** that are **solid or fluid-filled.**
- To estimate the **size** of the liver & spleen

Percussion technique is the same as that used during the pulmonary exam.

Percussion (technique)

- **Middle finger** of striking hand (plexor) should knock the pleximeter firmly, with a **strong note**

Percussion

- Begin with a light percussion survey of all four quadrants of the abdomen, including going across the abdomen.
- This may detect tenderness, as well as flank dullness and central tympany.

Percussion

General tympany:

percuss **lightly** in all four quadrants to determine the **distribution of tympany & dullness.**

- **Normal**: **tympany should be predominate** (hollow, gas in the GI track.
- **Abnormal: Dullness** (distended bladder, fluid or mass).
- **Hyper resonance** (Presence of gaseous distention)

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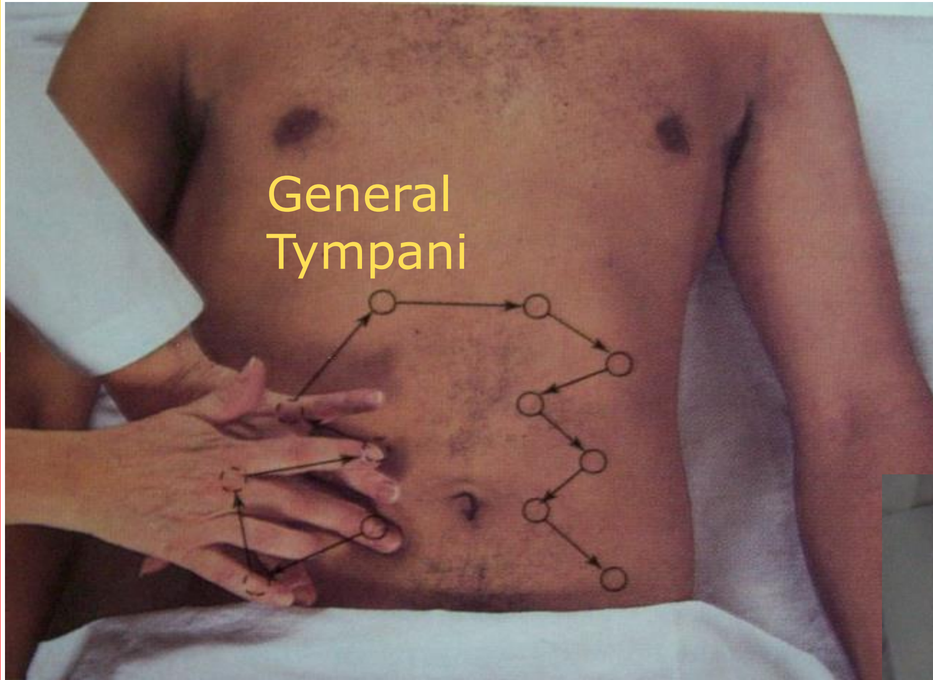
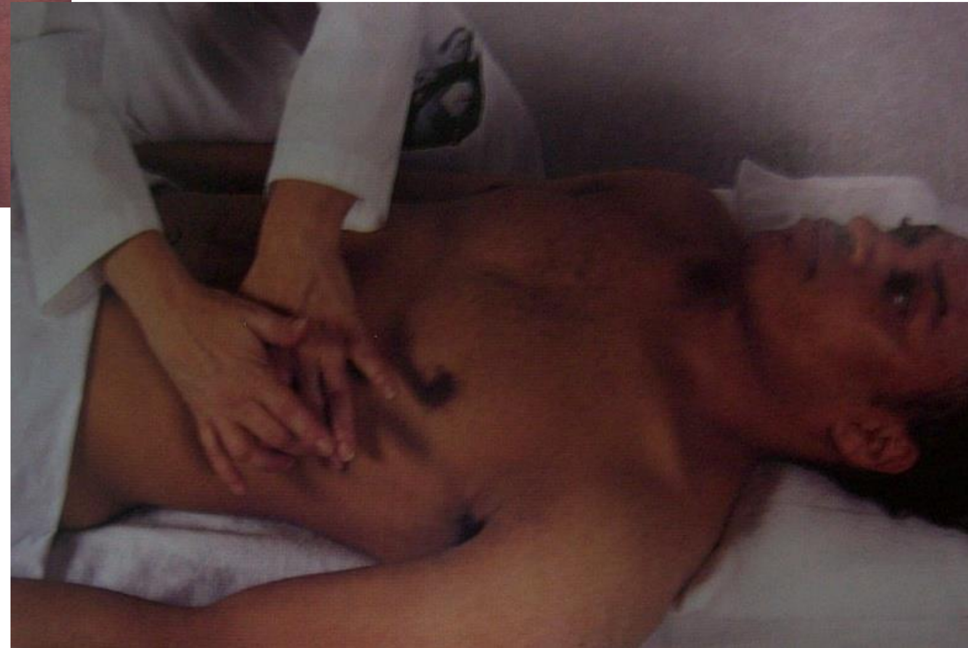
Percussion of the Abdomen



Dullness over distended bladder, fluid, mass, or liver

Hyperresonance over gas distention

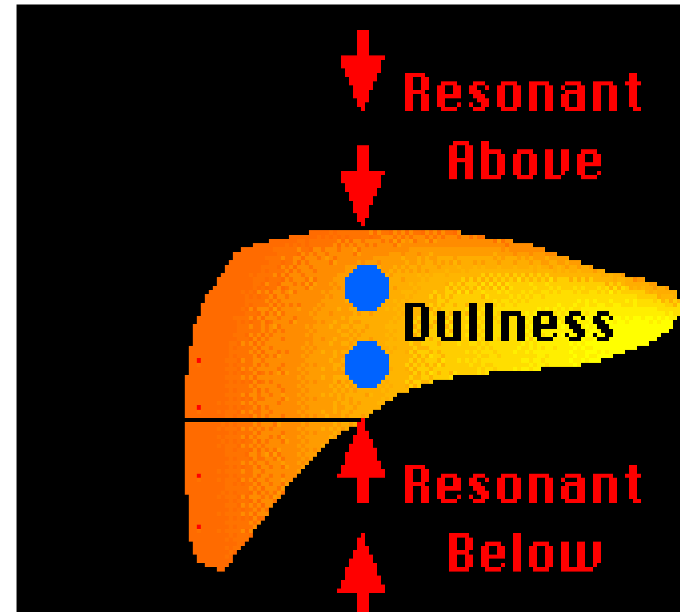


The Liver

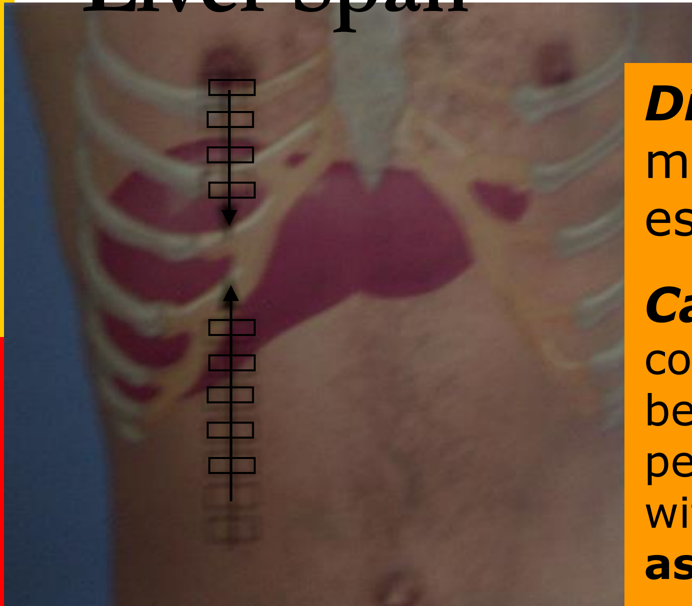
To evaluate **surface, consistency, & tenderness**

- **Liver span**: measure the height of liver in **midclavicular** line. Starting at a level **below the umbilicus** (**tympanic** area) percuss **upward** toward the liver (lower border of **dulness**).
- Next in the area of **lung resonance** & percuss **down** the interspace until the sound change to **dull**, mark the spot.
- measure the distance between two points: **4-8 cm in midsternal line**, **6-12 cm in Rt midclavicular** line.

- **Abnormal**: **Enlarged** liver span (**hepatomegaly**)
- **Confused detection**: dullness over lung in case of pleural effusion. Dullness pushed up in lower border detection, in case of ascites or pregnancy or gas distention.

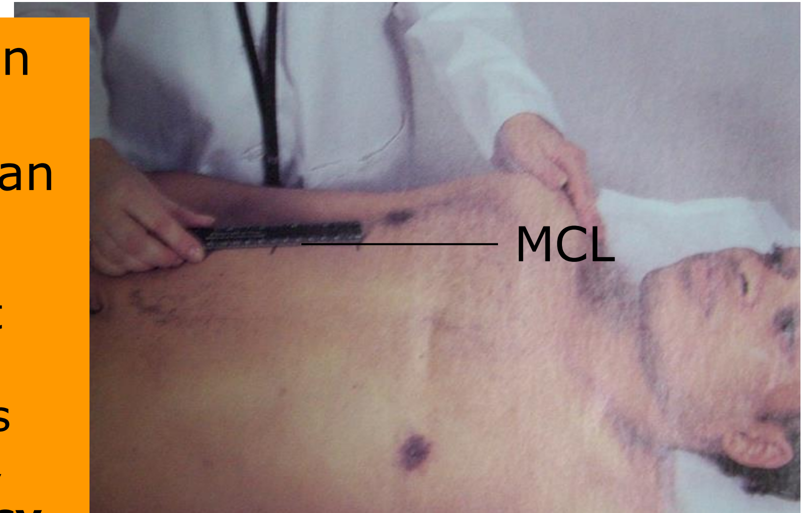


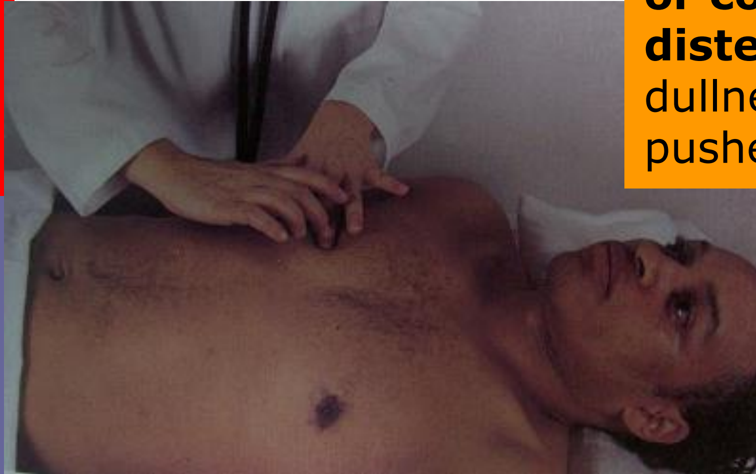
Liver Span

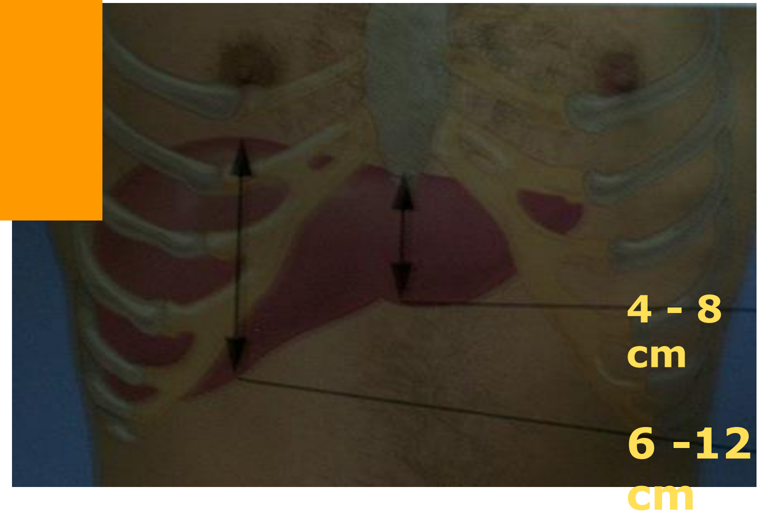


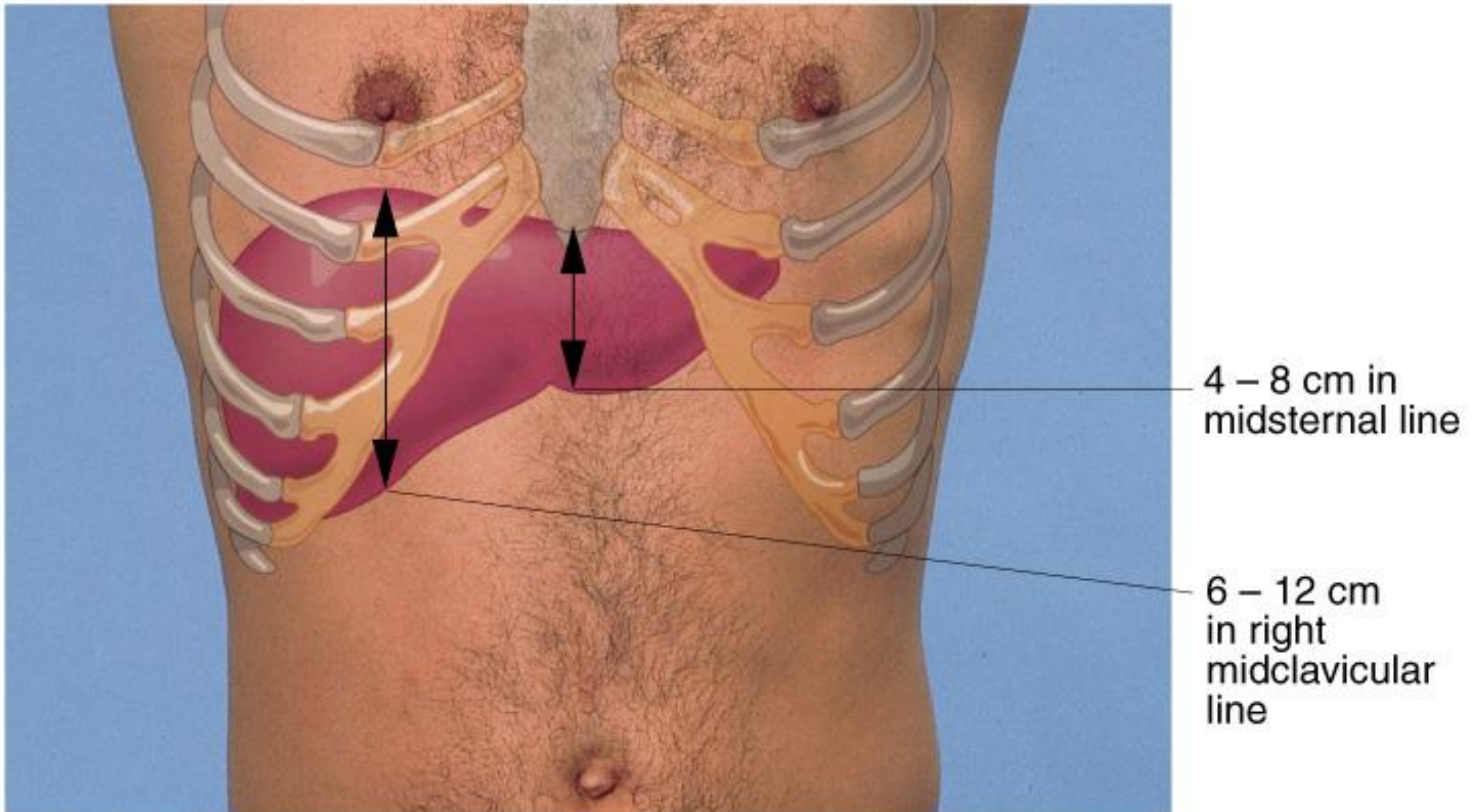
Direct percussion may be used to estimate liver span

Careful consideration must be taken when percussing patients with **emphysema, ascites, pregnancy, or colon gas distension** as dullness may be pushed up.









Normal liver spans

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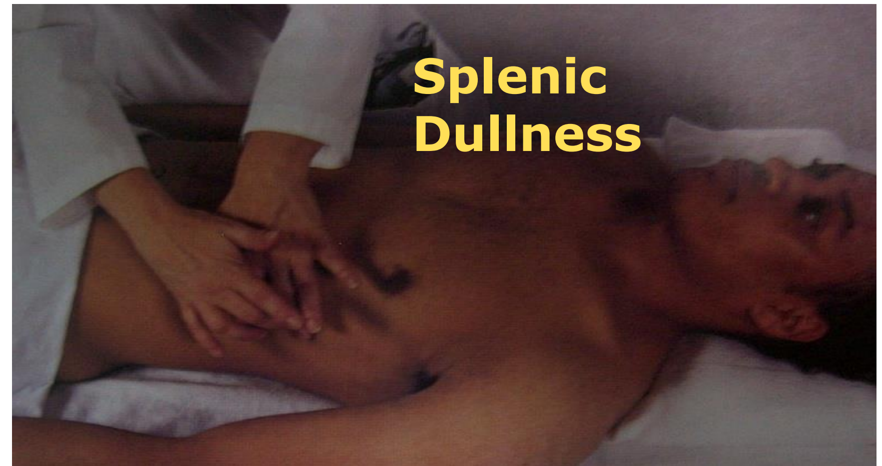
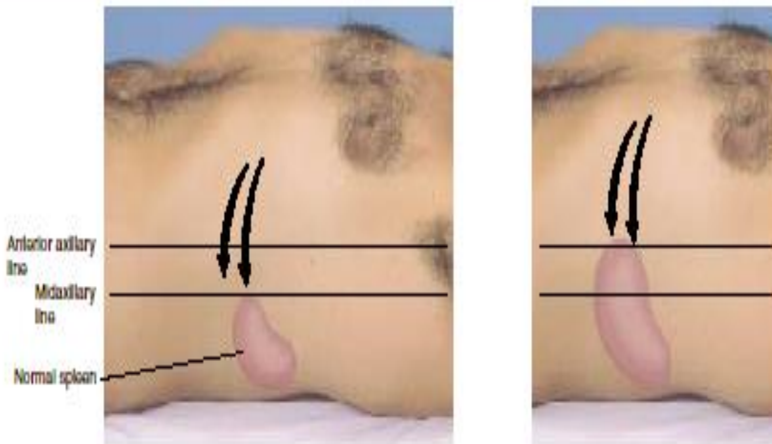
The Spleen

- Normally spleen is not palpable , and must be **enlarged three times** it's normal size to be felt.

Percussion:

To detect **splenomegaly** (enlarged spleen):





Dullness over **9th – 11th left ICS at <u>Midaxillary line</u>**

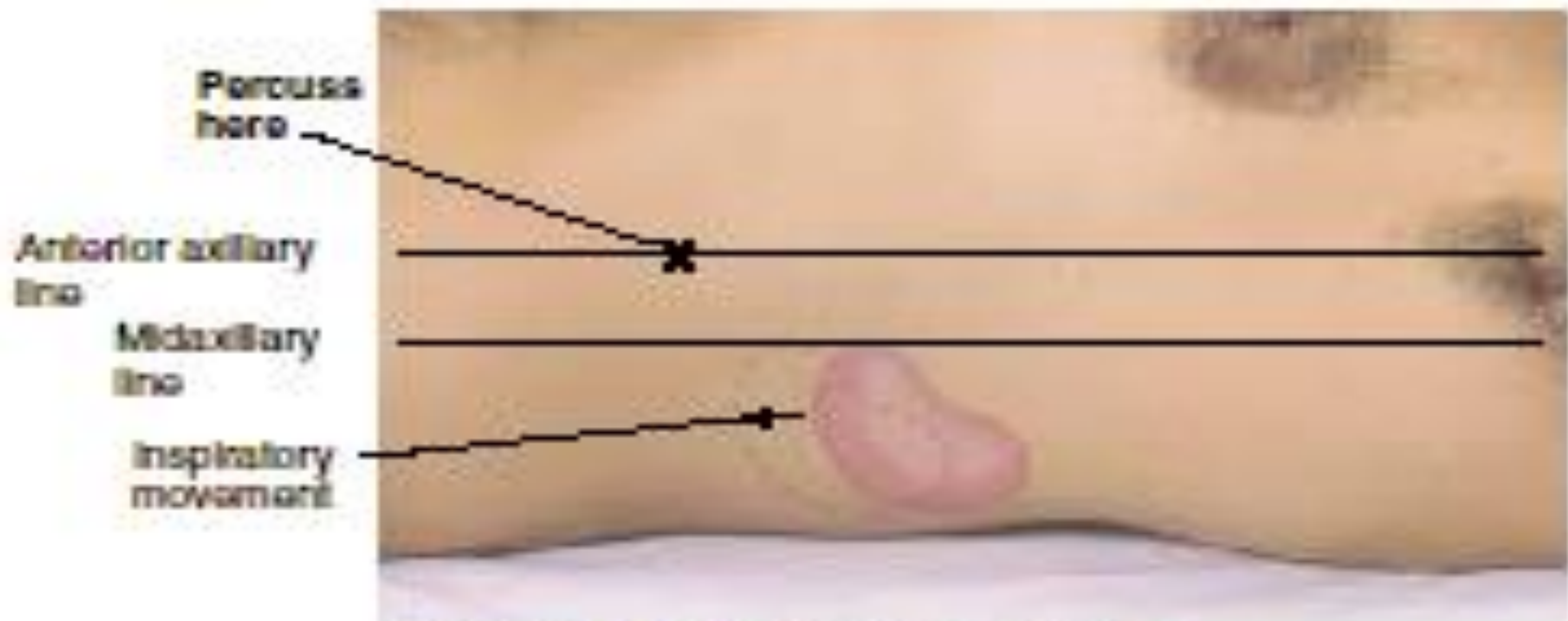
1)Abnormal: dullness at **<u>Lt *anterior*</u>** <u>axillary</u> line (**spleenomegaly)**

2)*positive spleen percussion sign*

positive splenic percussion sign:

Shifting from tympany to dullness with inspiration suggests an enlarged spleen

- *Check for a splenic percussion sign.* Percuss the lowest interspace in the lef anterior axillary line, as shown below. This area is usually tympanitic. Ther ask the patient to take a deep breath, and percuss again. When spleen siz is normal, the percussion note usually remains tympanitic.



NEGATIVE SPLENIC PERCUSSION SIGN

Palpating the Abdomen

- **Light Palpation**

  - Hand & forearm on a horizontal plane, with fingers together.
  - Ask the patient to **mouth-breathe**
  - **Normal finding**: feel for the **relaxation of abdominal muscles that accompanies exhalation**. **voluntary muscle guarding occurs** when patient is cold or ticklish especially during exhalation
  - ***Abnormal:***
    - Involuntary rigidity: a **constant hardness of muscles not relieved with exhalation;** occur due to **acute pain such in peritonitis.**
    - Rigidity, large masses, tenderness

- **Deep palpation**

Required **to identify abdominal masses** (note **location, size, shape, consistency, tenderness, pulsations & any mobility** with respiration or with examination)

  - Push down about **5-8 cm** clockwise
  - **Normally**, **mild tenderness** may occur when palpate **sigmoid** colon. Other than that No tenderness should be felt.

Assessment for peritoneal inflammation:

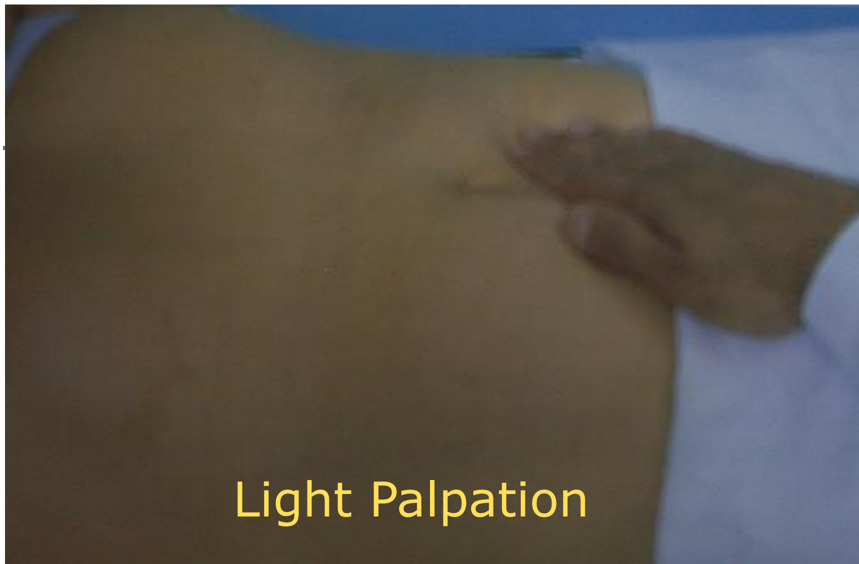
Abdominal **pain & tenderness** associated with **muscular spasm** indicate inflammation of the parietal peritoneum.

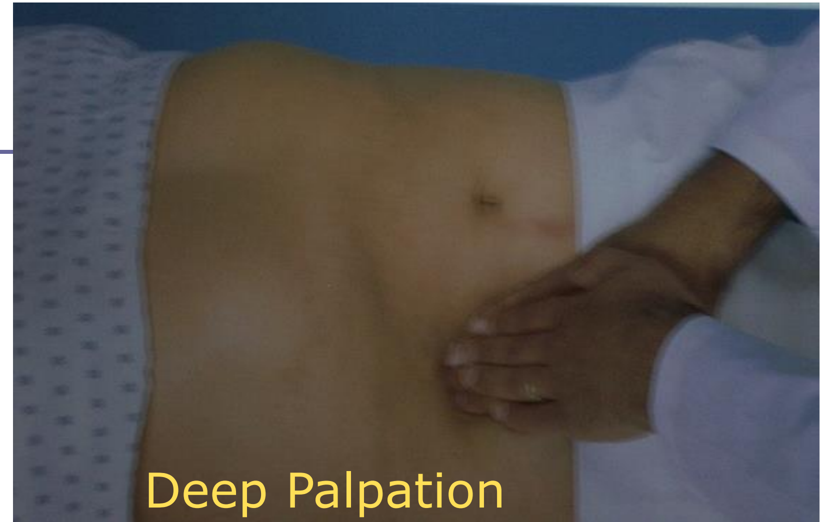
-first ask the pt. to **cough** & determine where the cough **produces pain.**

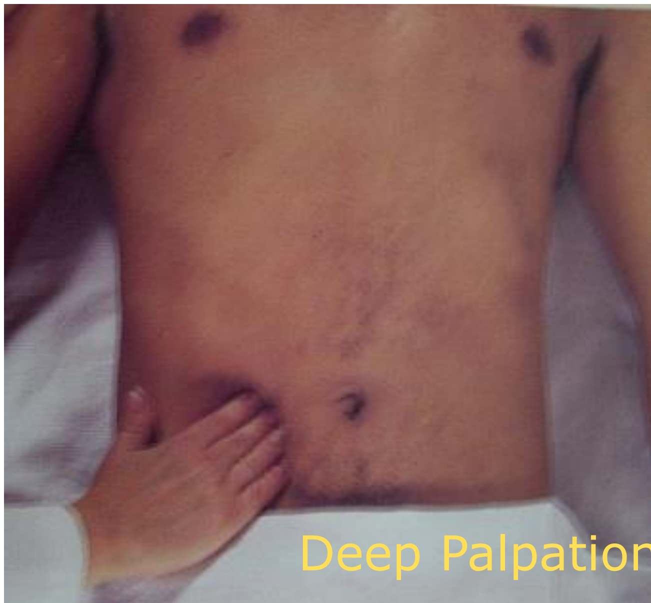
-then **palpate gently** with **one finger** to map tender area.

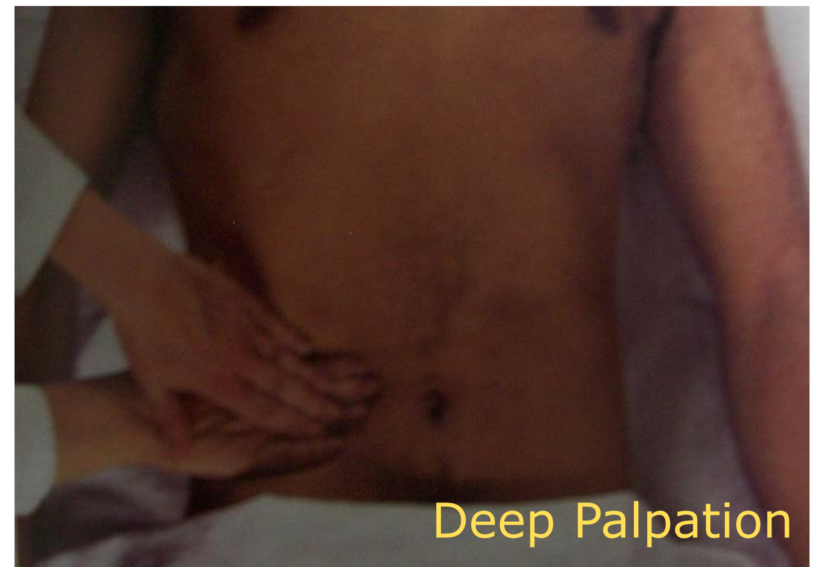
- **Rebound Tenderness**:
- Assess Rebound Tenderness when the person reports **abdominal pain** or when you elicit **tenderness** during palpation.
- push down slowly and **deeply**, then **left up quickly**.
- **Negative test** (Normal)--- No pain.
- **Positive test** (Abnormal) ----- Pain on release of pressure.
- **Reliable signed peritoneal inflammation**.

Palpation of the Abdomen









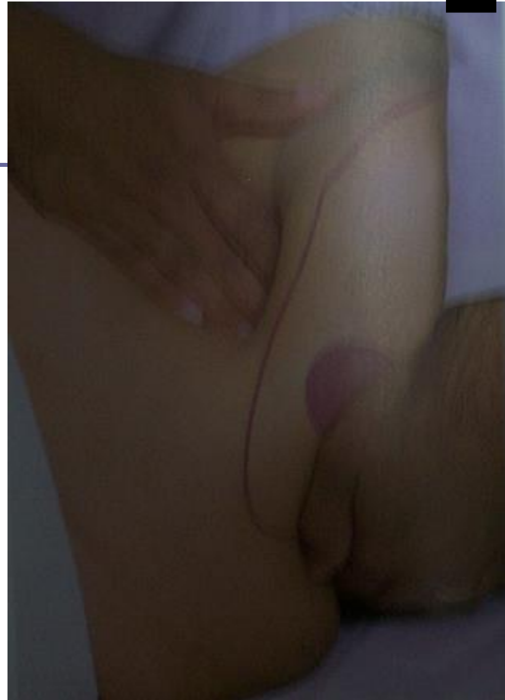
Liver palpation

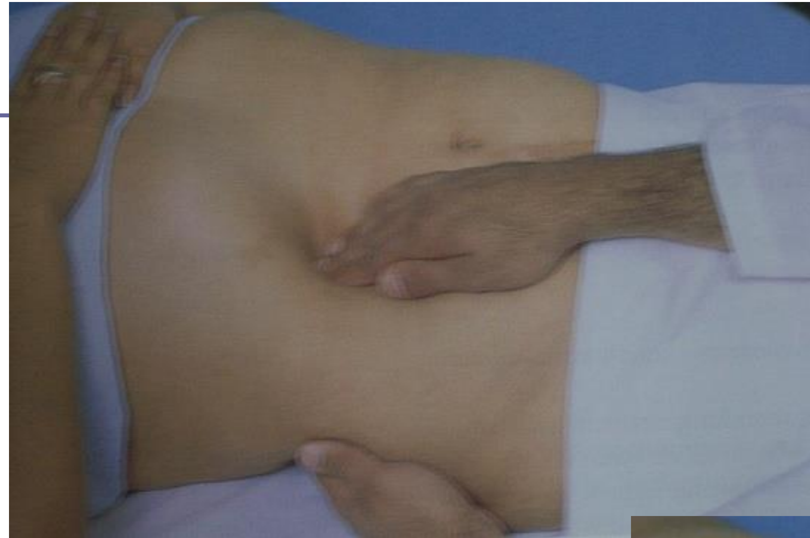
- Liver is palpated to:
  - help determine if it is enlarged (span is maybe more important for this)
  - determine its consistency
  - find nodules
  - detect pulsations (tricuspid regurgitation)

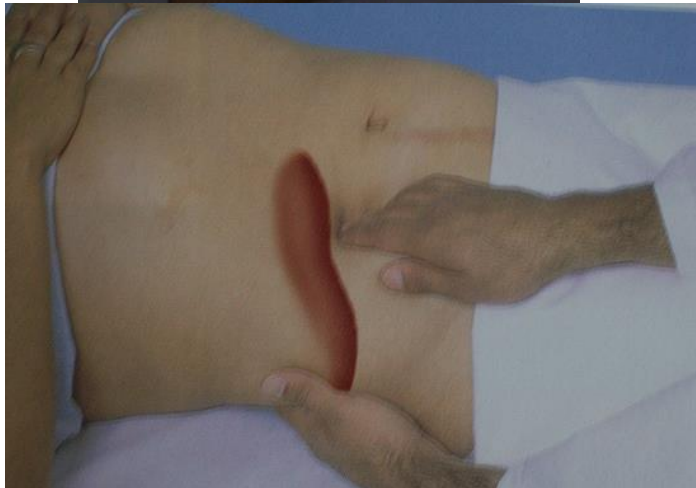
Liver Palpation

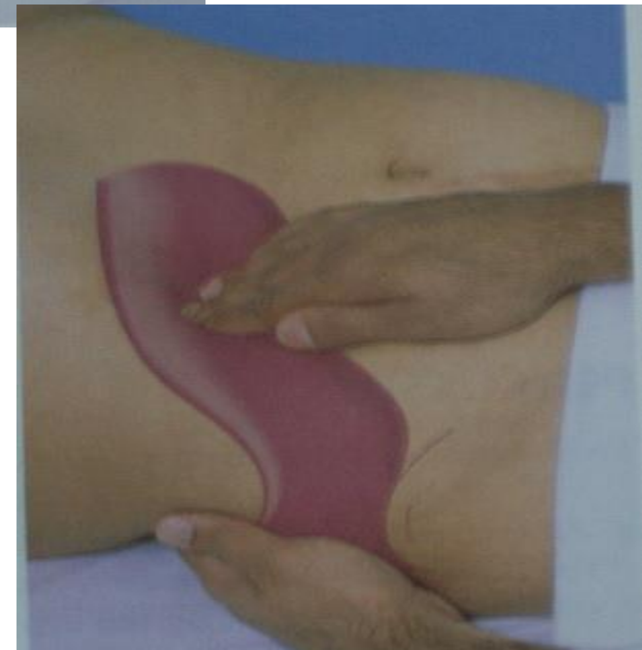
- Place your **LT** hand under the person's back parallel **11th and 12th** rib and **lift up** to support the abdominal contents, place your **RT hand on the RUQ** with fingers parallel to the **midline**, **Push down and under the RT costal margin.**
- Ask the person to take deep breath usually the edge of liver pump your finger tips
- On **inspiration,** the liver is palpable about **3 cm below the Rt costal** margin in MCL.
- **Normal liver edge is soft, regular, and smooth surface**.

Liver Palpation









Alternate Method Liver palpation

Hooking technique:

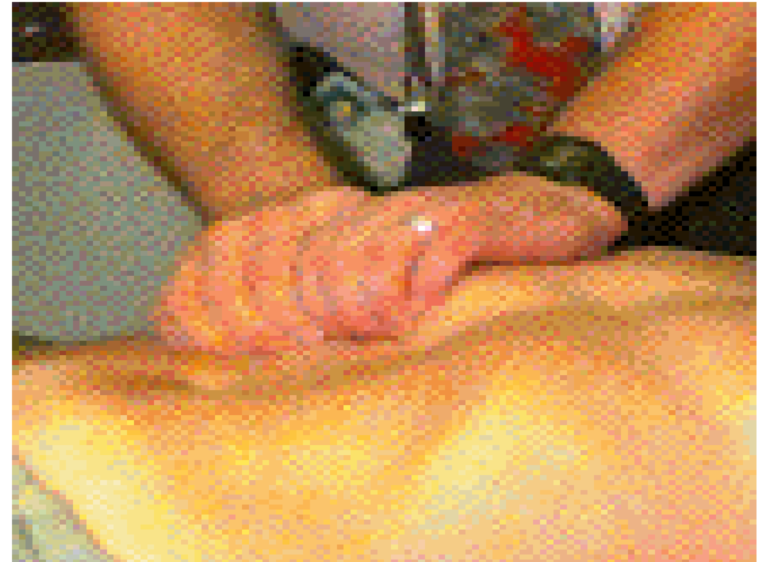
Used when the pt. is **obese**

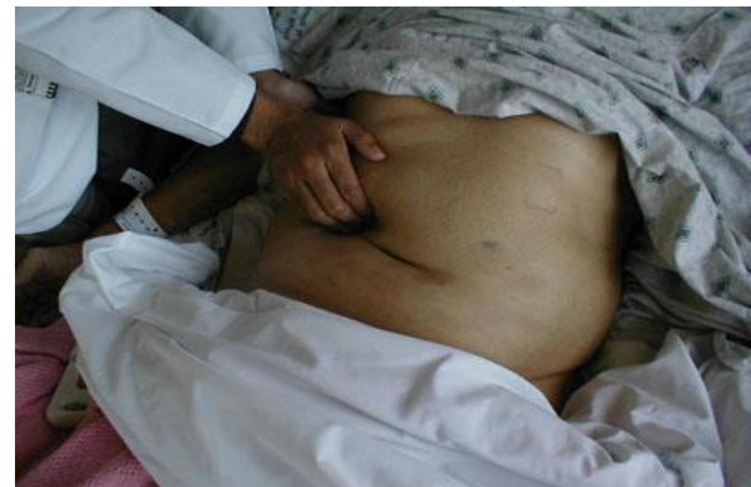
-Stand to the Rt.of pt's chest.

-place both hands, side
By side **below the border of liver dullness**. Then press "Hook" in with your fingers & up toward the costal margin.

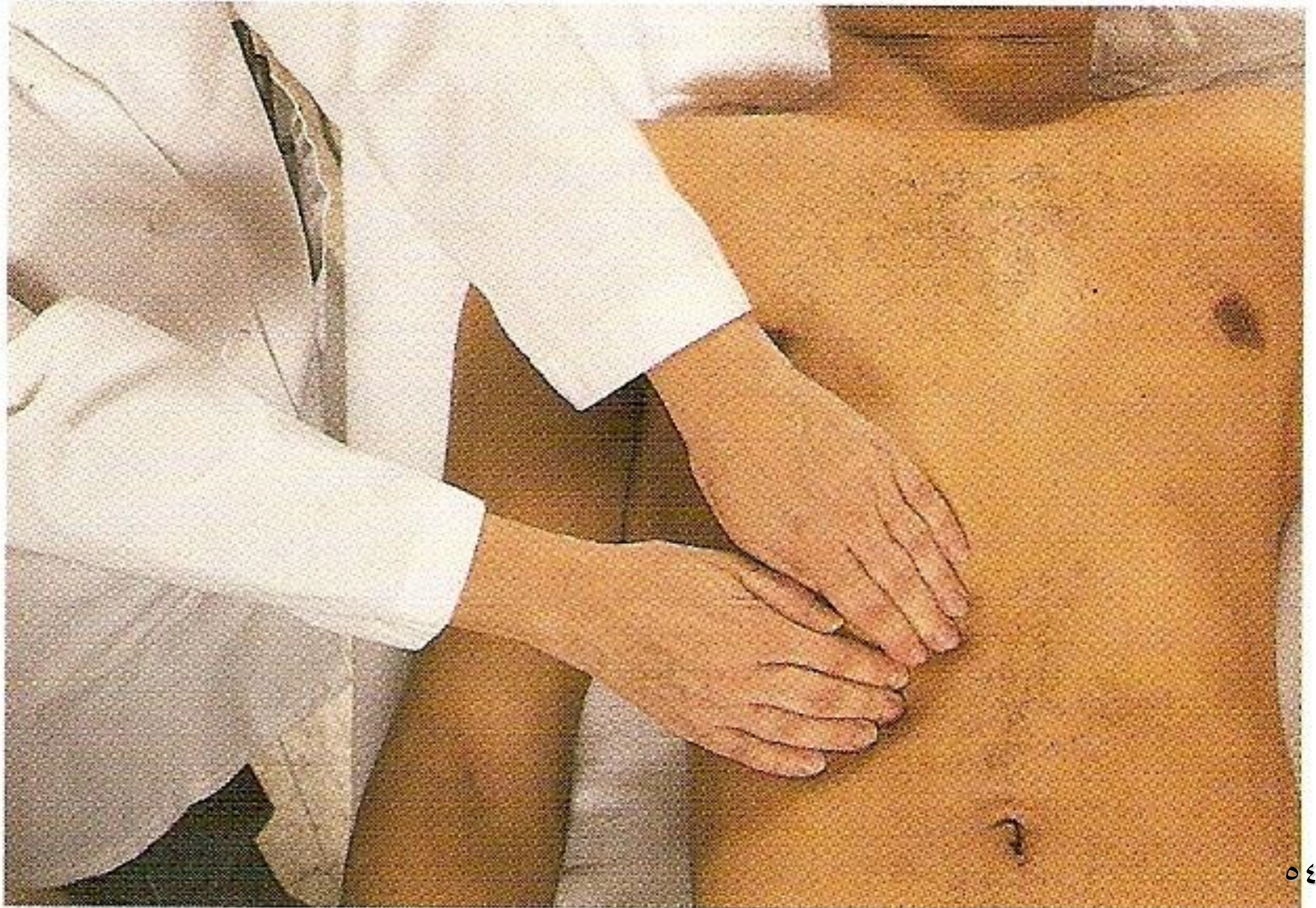
-ask the pt. to take deep breath

-Liver edge should be palpable. Normal liver edge is **soft, regular, and smooth surface**.





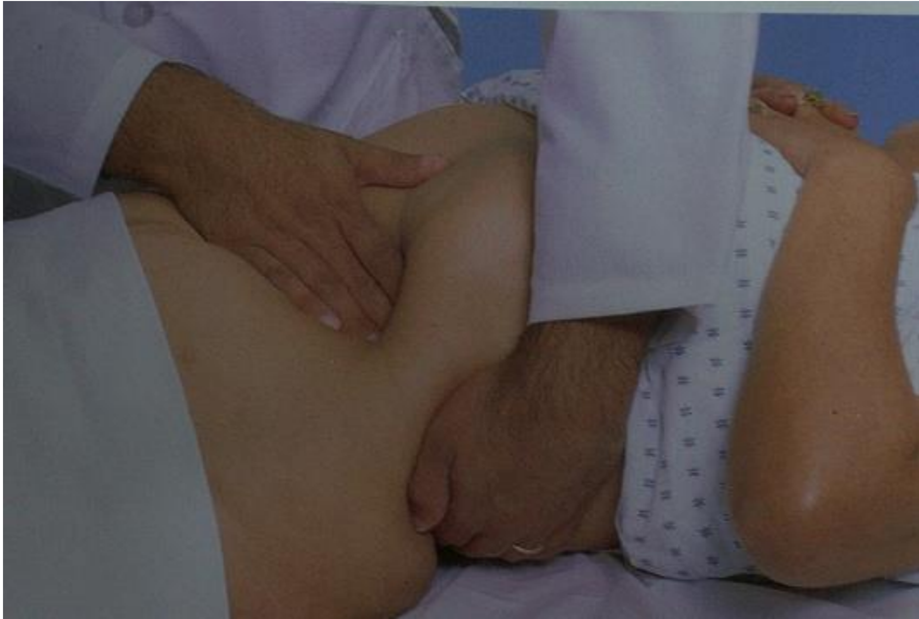
Hooking Technique

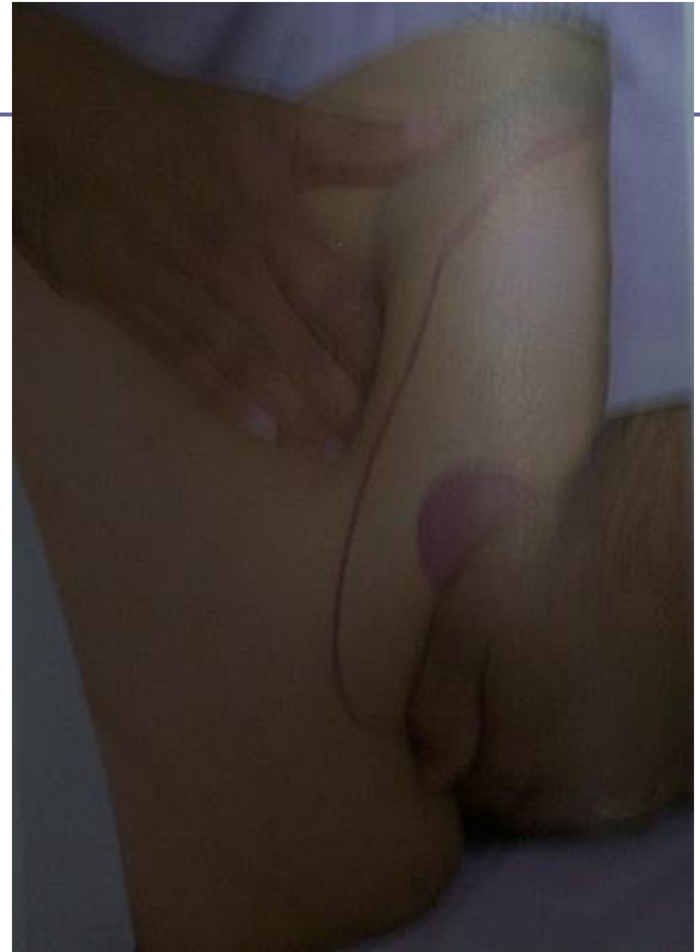


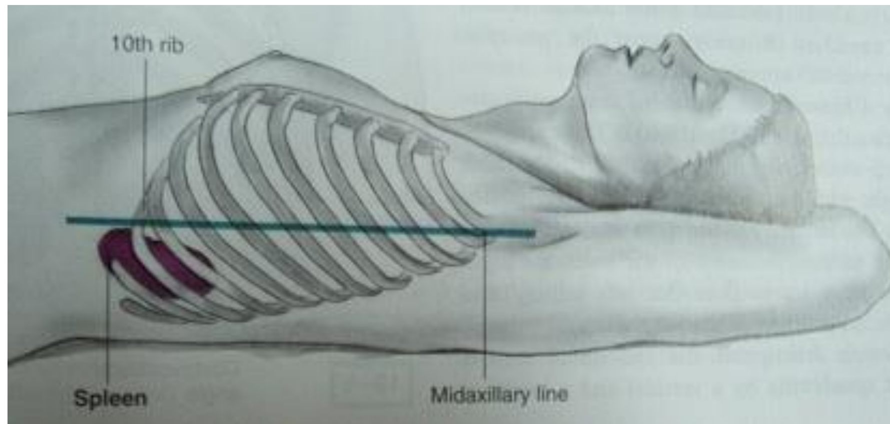
Spleen palpation

- Palpate **upwards toward spleen** with finger tips of right hand, starting **below left costal margin**, **press in toward the spleen**.
- Have the patient take a **deep breath.**
- Try to feel the edge of the spleen. Note any **tenderness**, assess the **splenic contour.**
- The **enlarged spleen** is palpable about **2 cm below the left costal** margin **on deep inspiration**

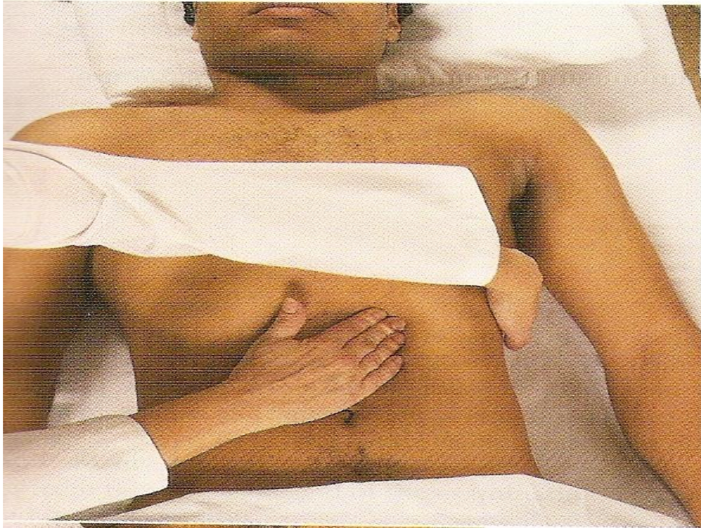
Splenic Palpation

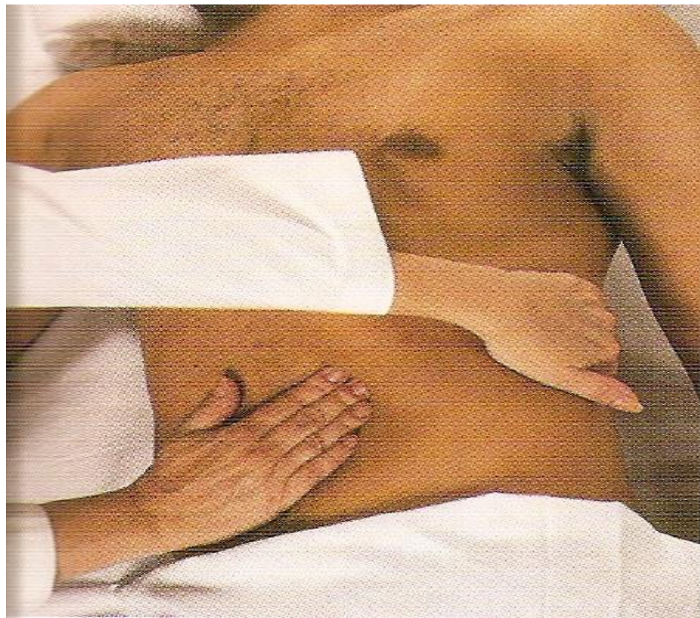






Spleen Palpation

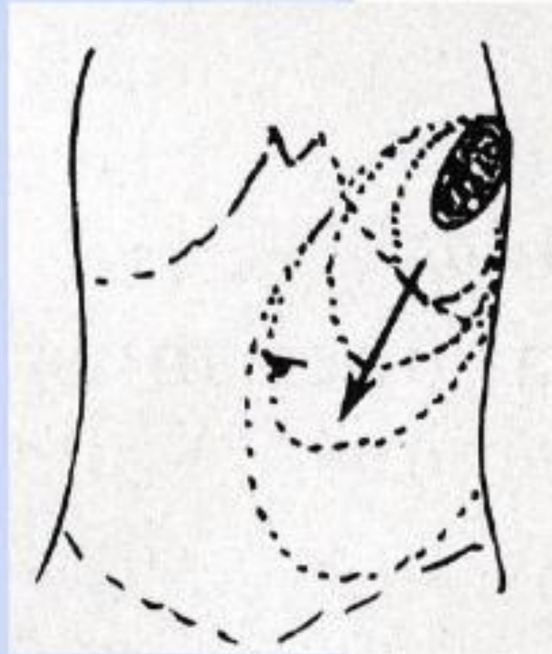




- *Repeat when the* **Pt. lying in the Rt. Side** with legs flexed at hips & knees. (to bring the spleen forward)

Spleen palpation

- When the spleen enlarges, it moves anteriorly and obliquely downwards into the abdomen.



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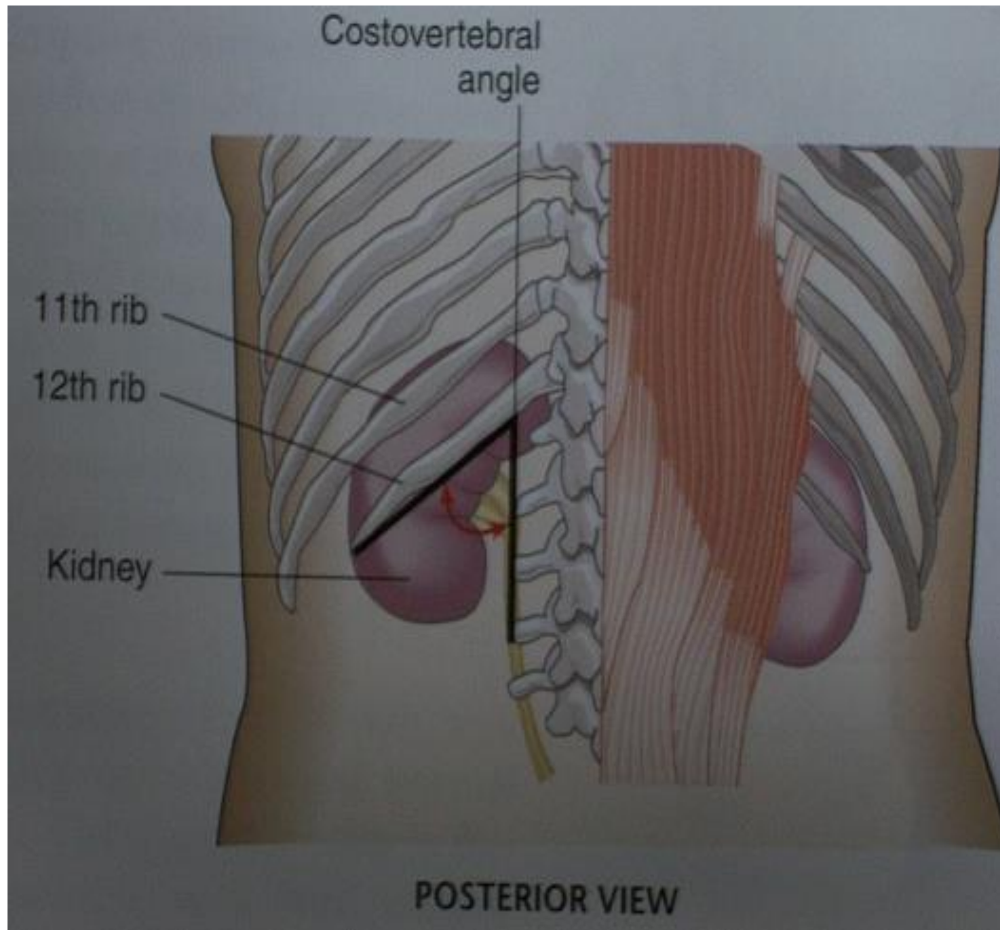
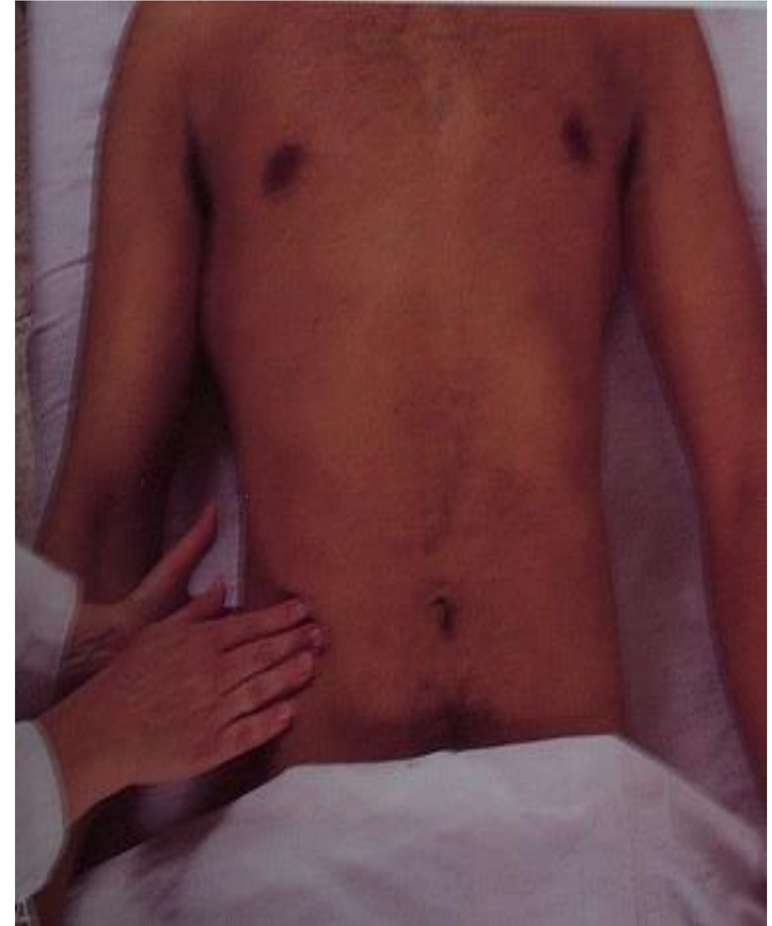
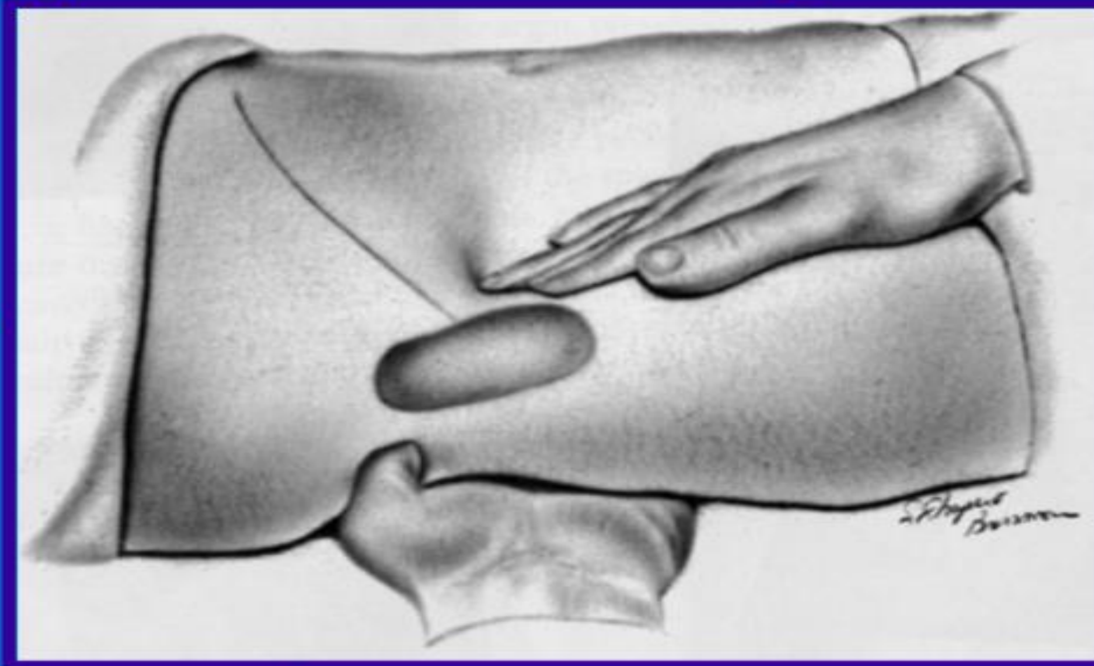
Palpation of the Kidney





Examination of Kidney

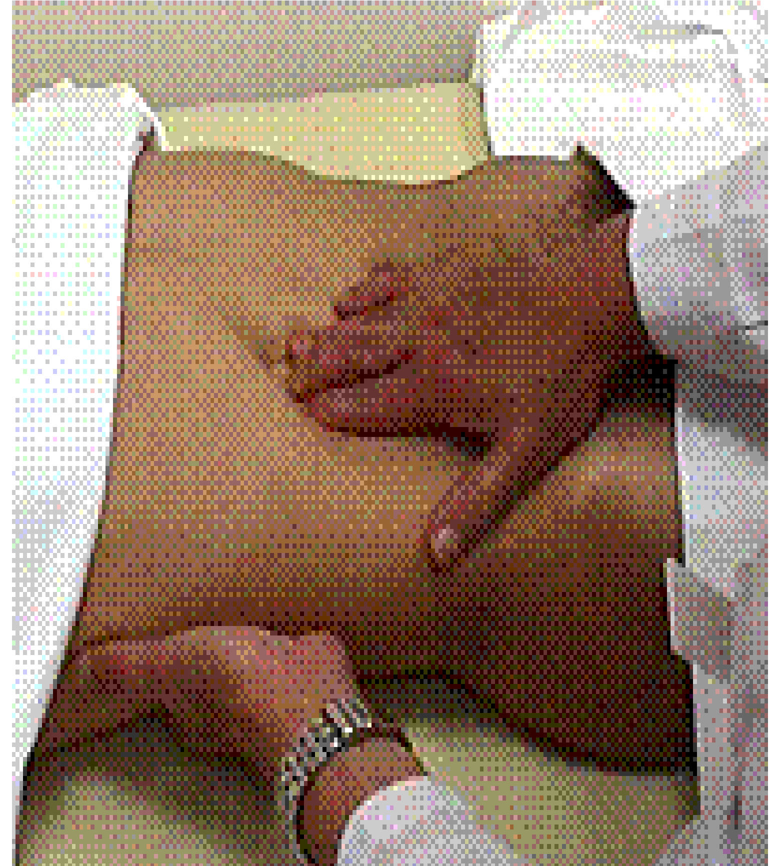


- Right kidney may be felt to slip between hands during exhalation

Examination of Kidney

Palpation of the **Rt. Kidney:**

- Return to the pt. Rt.side
- Use Lt. hand to lift from in back, & examiner Rt. Hand to feel **deep in the upper quadrant.**
- Patient take a deep breath.
- Feel **lower pole of kidney** and try to capture it between your hands.

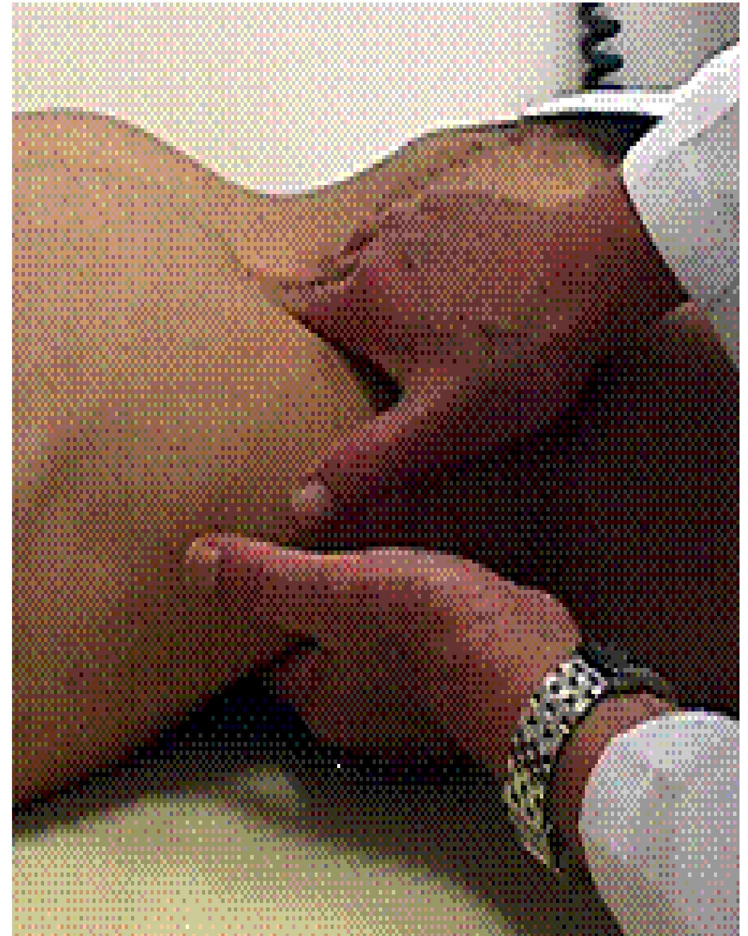


CONT...

- Place left hand posteriorly just below the right 12th rib. Lift upwards.
- Palpate deeply with right hand on anterior abdominal wall.

Normal: **Rt. Kidney may be palpable, in thin & well relaxed women**

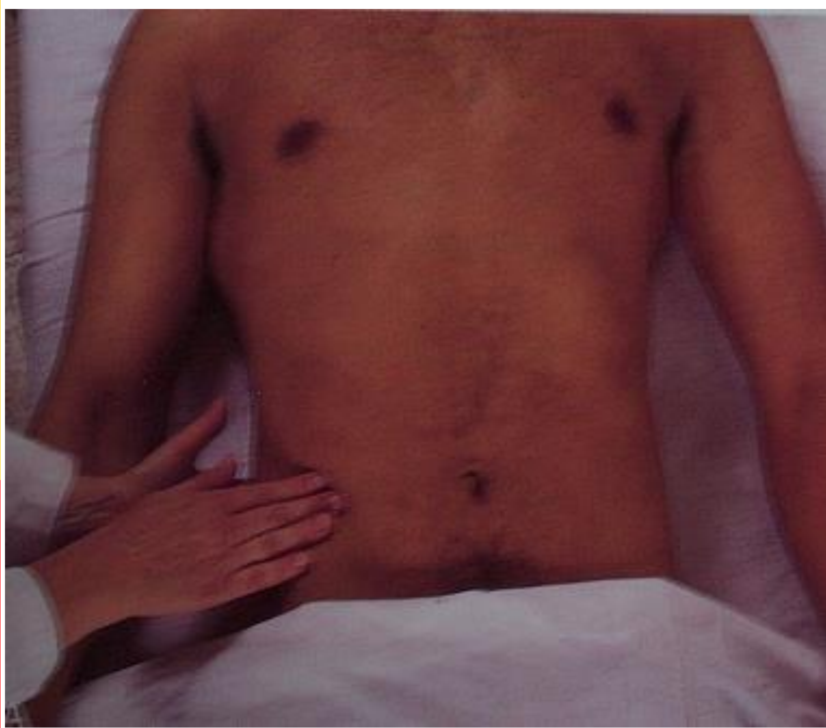
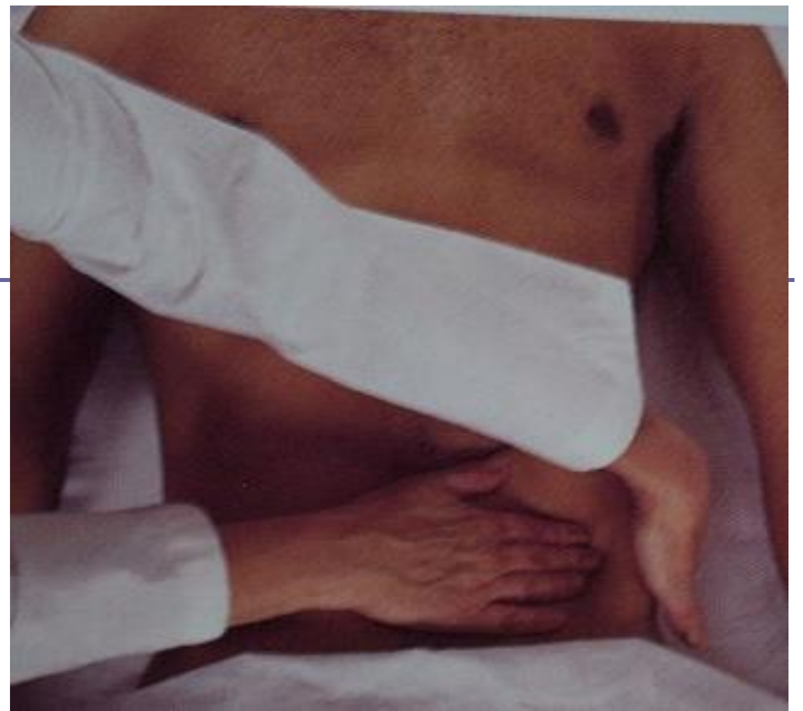
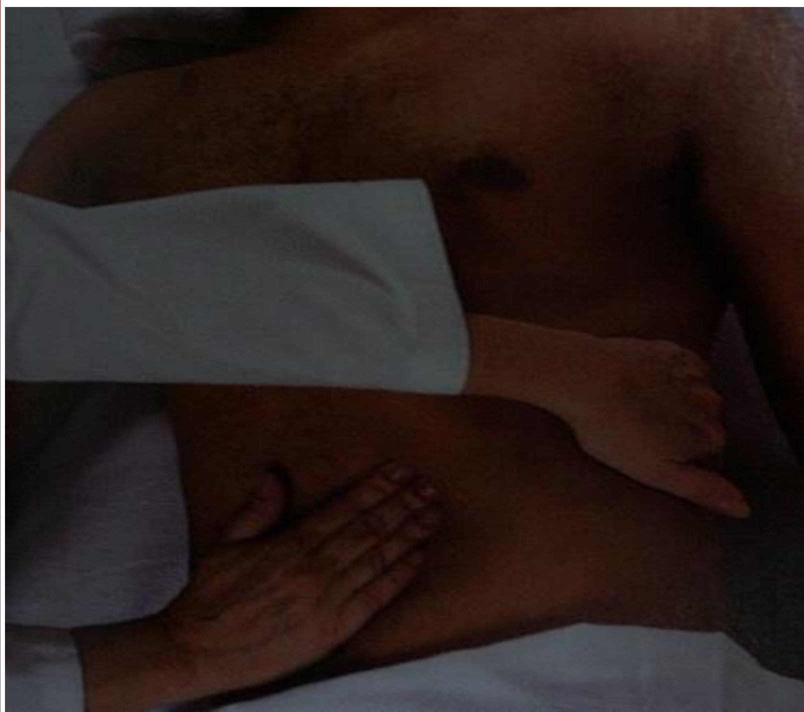
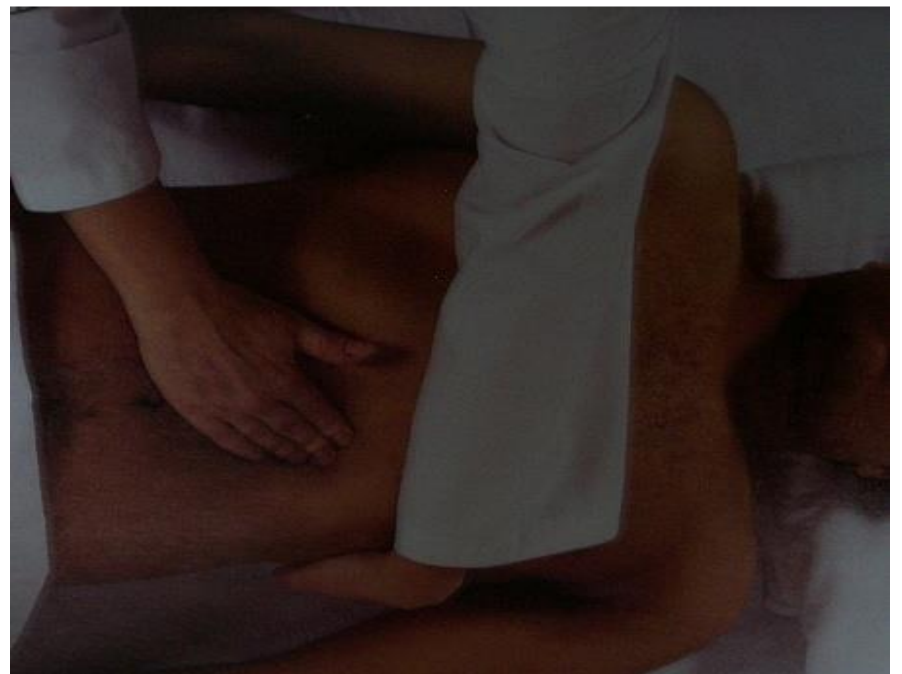
Lt. kidney is rarely palpable



The kidneys

Palpation of the left kidney

- Move to the patient's left side.
- Place your hands behind the pt. just below and parallel to the 12th rib with your fingertips just reaching the costovertebral angle.
- Lift, trying to displace the kidney interiorly
- Place your left hand gently in the LUQ, lateral and parallel to the rectus muscle
- Ask patient to take **deep breath**, at the peak of the inspiration, **press your left hand firmly and deeply** into the LUQ, just below the costal margin and capture the kidney between your two hands.
- Ask the patient to **breath and stop breathing** briefly, **slowly release the pressure and feel the kidney back** into expiration notice **size, contour, and tenderness**.

Kidney Palpation

- The lower of RT kidney will be **rounded , smooth mass solid** between the examiner fingers.

- The LT kidney (sits **1cm higher** than the RT kidney) is **not palpable normally**.

Assessing percussion tenderness of the kidneys:

- **Costo vertebral Angel Tenderness**:
- By using **fist** percussion **over the 12th rib at the costal vertebral angel.**
- Normal: **feels a thud but no pain.**
- **Abnormal**: sharp pain with inflammation of kidneys .

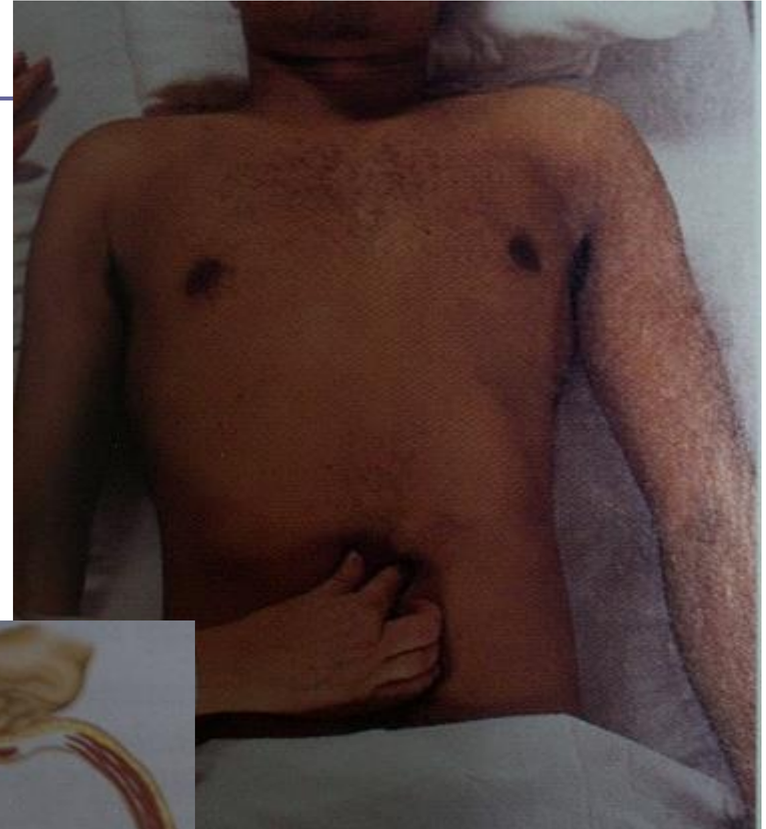
Palpation of Abdominal Aorta

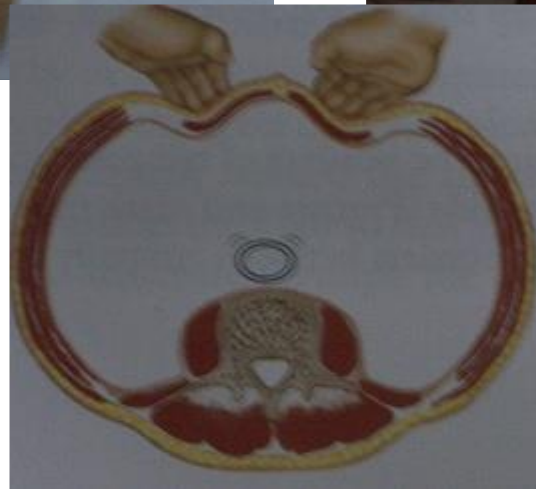
- By using **fingers and thump** to palpate aortic pulsation in **upper abdomen**, slightly to the **left of the midline**,

- **Normal** finding: **2.5 – 3cm wide.**
- **Abnormal** finding: widened or prominent lateral pulsation in case of **aortic aneurysm.**

Palpation of The Aorta

Not more than 3 cm wide (average 2.5 cm)





Special techniques

- Ascites
- Appendicitis
- Acute cholecystitis
- Ventral hernia
- Mass in abdominal wall

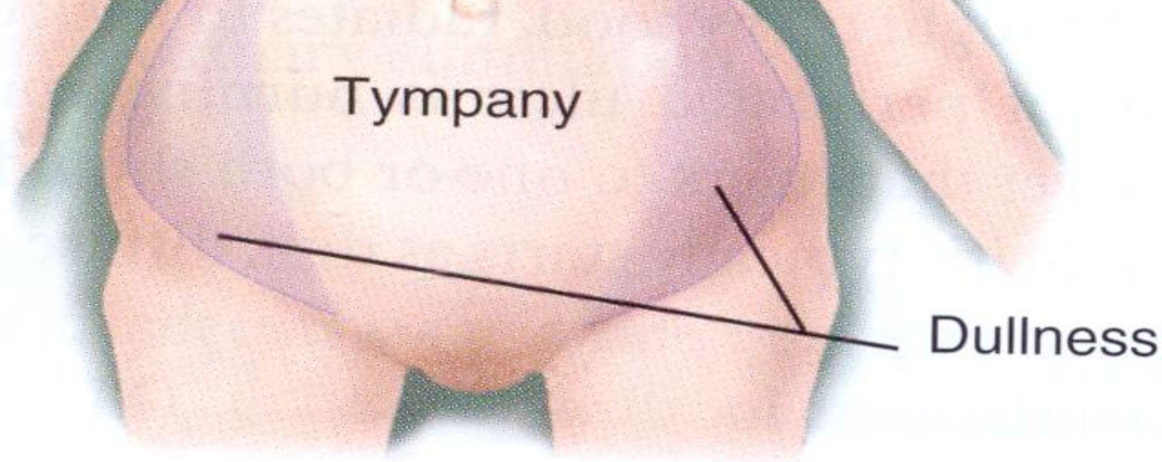
ASSESS POSSIBLE ASCITES

By :

1-Percusion

2-Test for shifting dullness

3-Test for a fluid wave



Ascites

Inspection. Single curve. Everted umbilicus. Bulging flanks when supine. Taut, glistening skin, recent weight gain, increase in abdominal girth.
Auscultation. Normal bowel sounds over intestines. Diminished over ascitic fluid.
Percussion. Tympany at top where intestines float. Dull over fluid. Produces fluid wave and shifting dullness.
Palpation. Taut skin and increased intraabdominal pressure limit palpation.

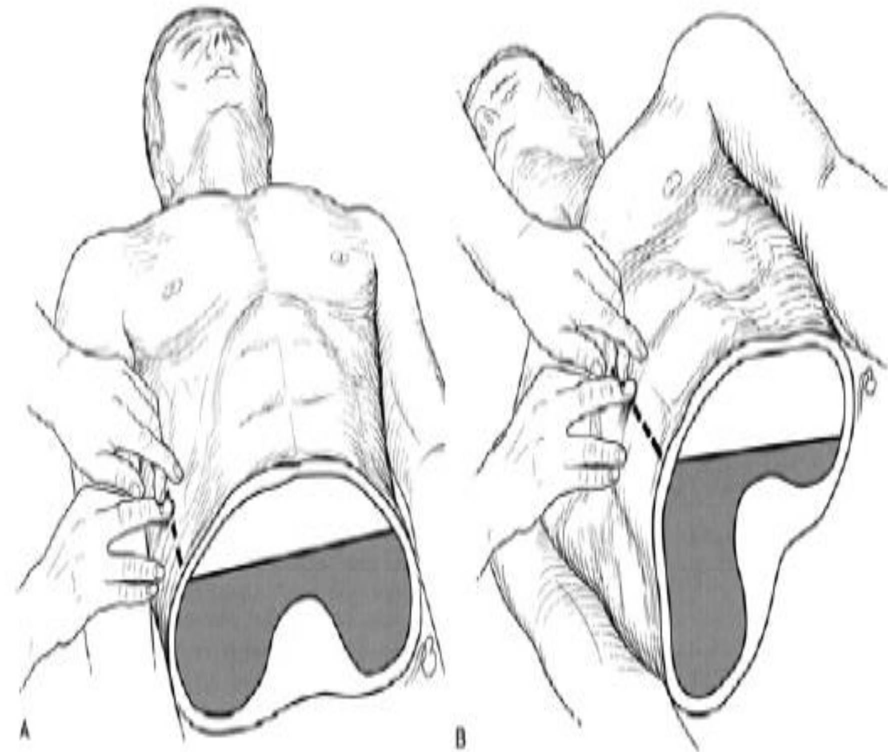
➢ Test for Shifting Dullness:

- In **supine position**, start percussion on the **top of the abdomen** (you will hear tympanic), by moving **down the side** the sound will change to dull(fluid), mark this spot.
- Then turn the patient onto **one side**, when start percuss, **the sound change from tympanic to dullness** but in this time start higher upward toward umbilicus.
- Note: (**shifting dullness positive with a large volume of fluid**).

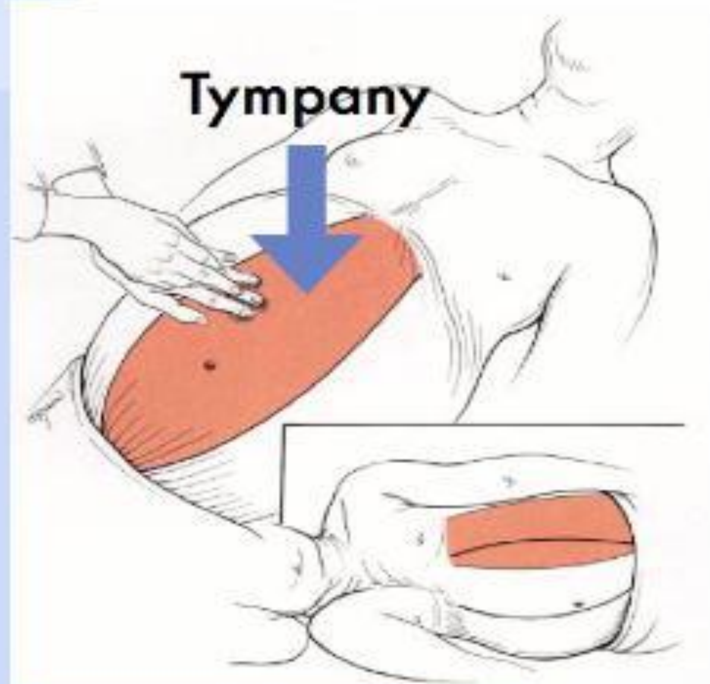
Examination for Shifting Dullness

Patient rolled slightly toward the examined side;

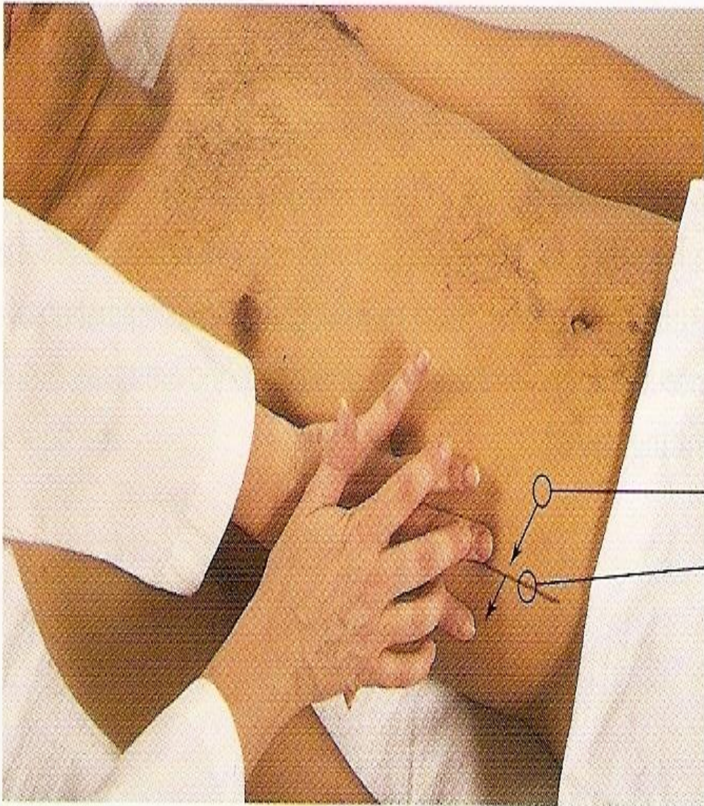
movement of the dull point medially is described as "**shifting dullness**" and suggests **ascites**

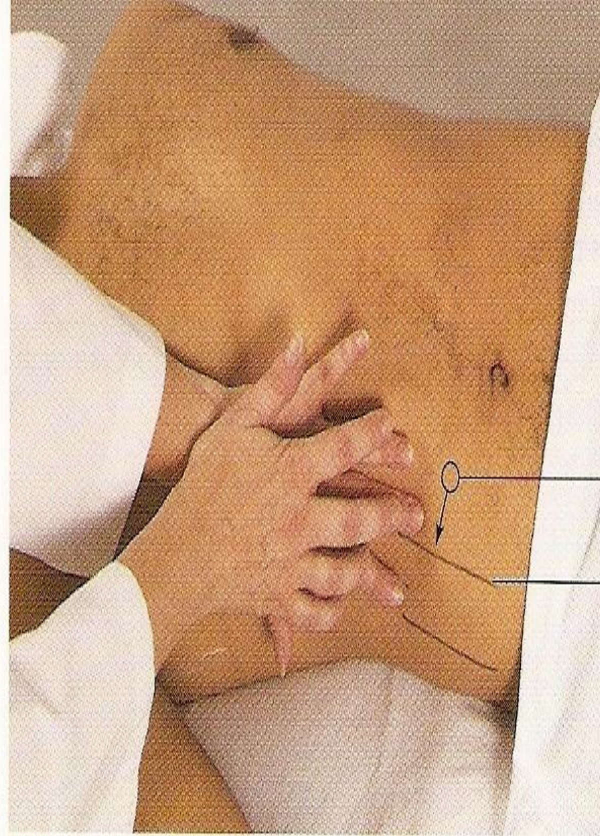


Shifting Dullness

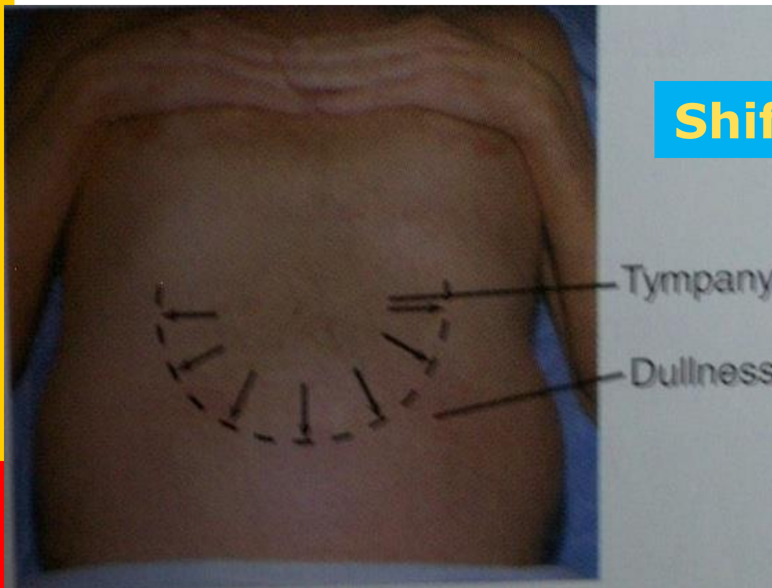


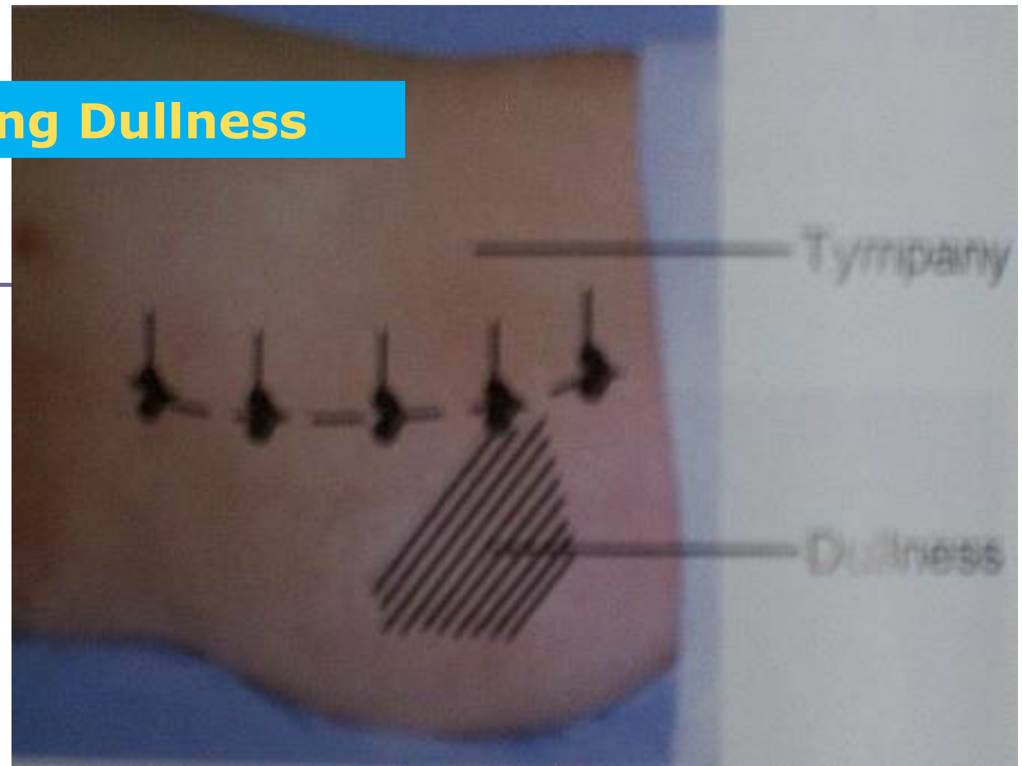
Shifting Dullness

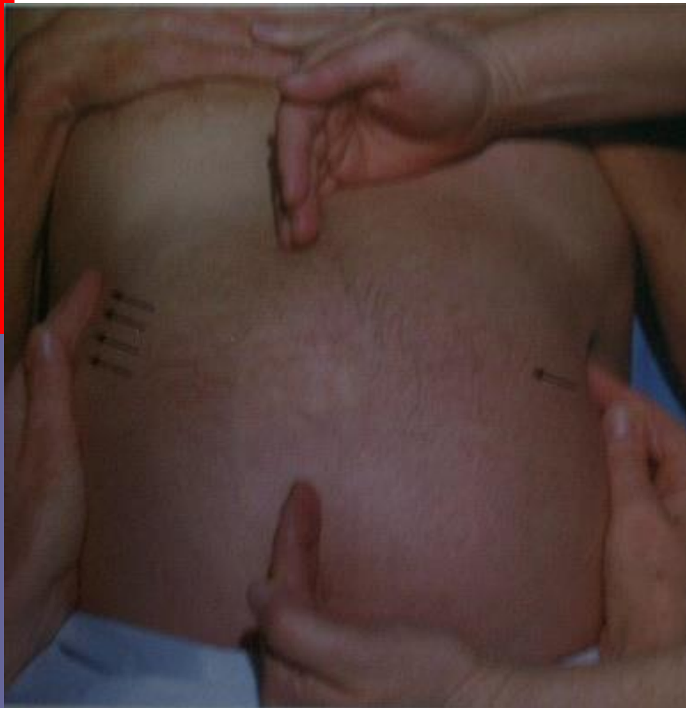

Tympany
Dullness


Tympany
Shifting level
of dullness

Shifting Dullness







Fluid Wave

- **Test for a Fluid wave:**

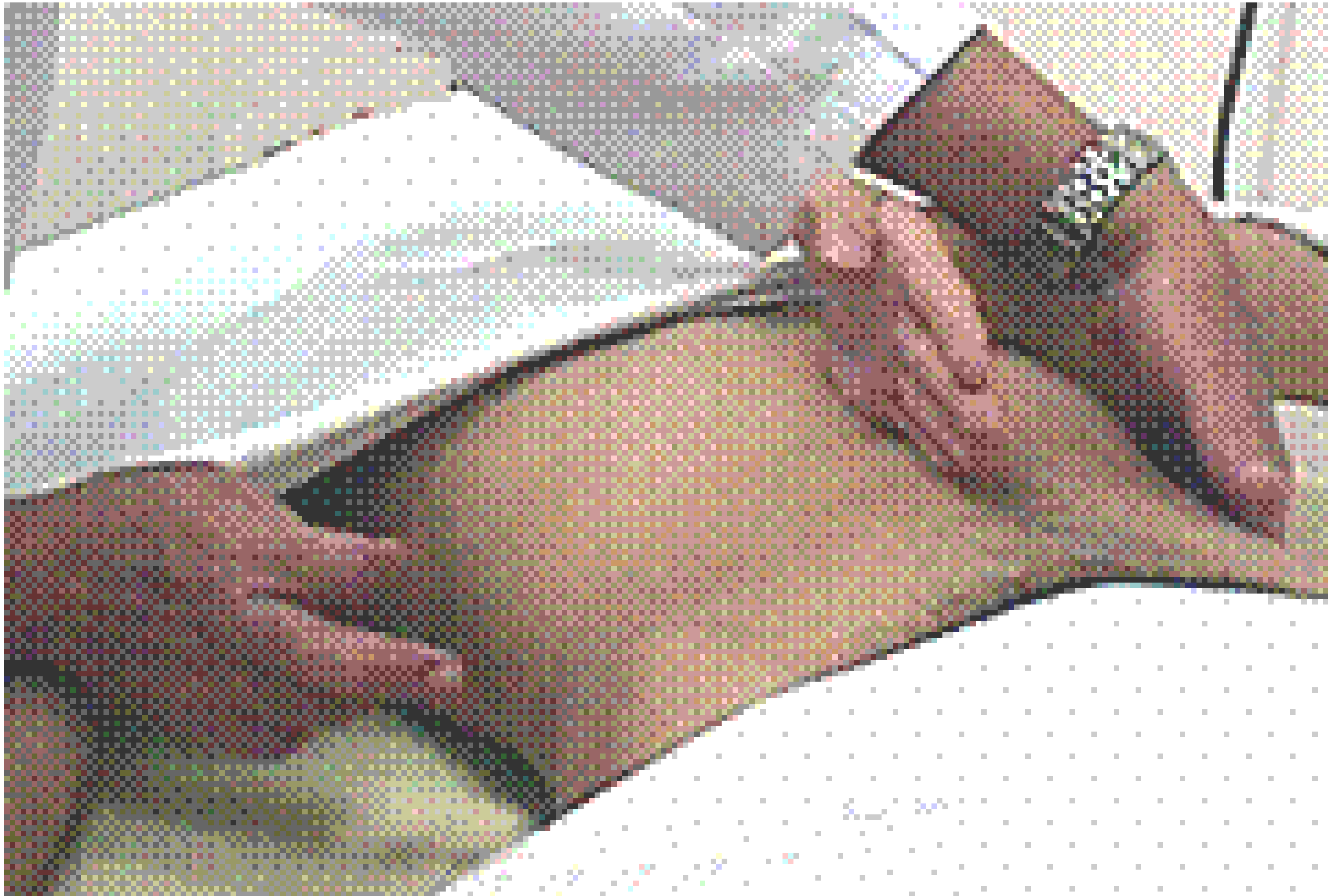
- Ask the pt. or another examiner to **press the edges of both hands firmly on the abdominal midline**

(to stop the transmission of a wave through fat).

- While you **tap one flank sharply** with your fingertips, feel in the **opposite flank for an impulse transmitted through the fluid.**

- **Normal**: negative
- If **ascites present** (**feeling of impulse)**
- If **gaseous present** (Feeling no change).

Fluid wave



ASSESS POSSIBLE ***APPENDICITIS***

Ask pt. to **point where the pain & ask pt to cough**, identify **local tenderness**, feel for **muscular rigidity**.

The pain of appendicitis begins near the umbilicus, then shifts to the RLQ where **coughing increase** it.

Additional techniques:

1-Rebound tenderness

2-Rovsing’s sign

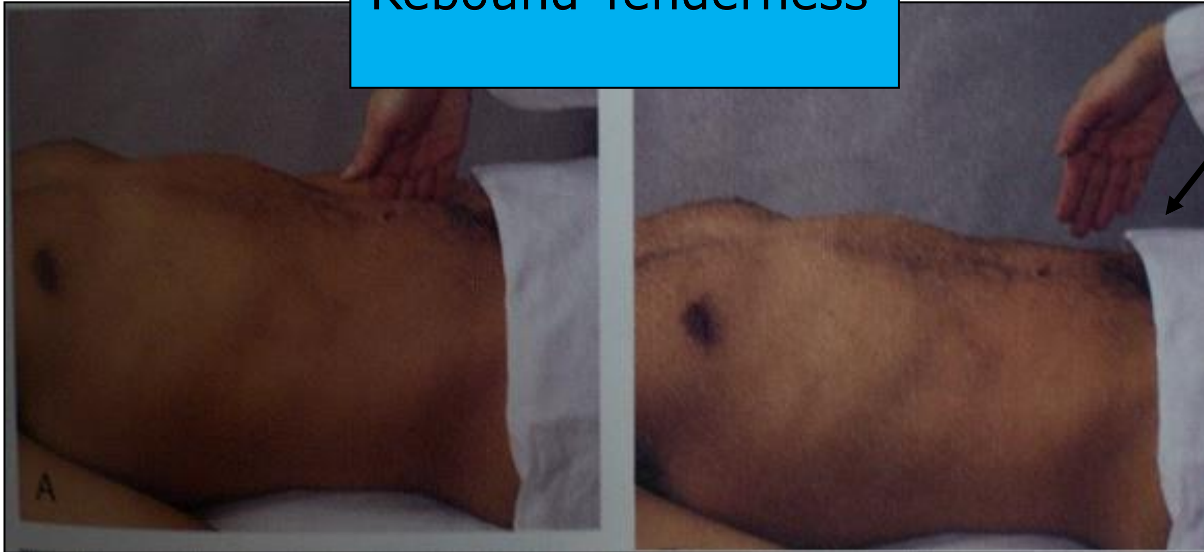
3-psoas sign

4-Obturator sign

5-Cutaneous hyperesthesia

Special Procedures

Rebound Tenderness



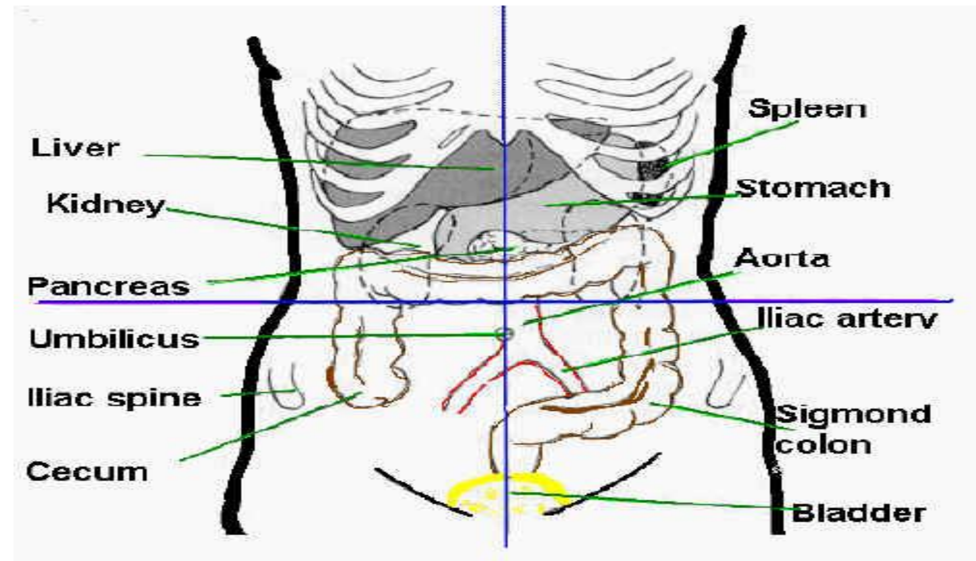
A negative (normal) response is no pain

Rovsing's Sign

- Pt. will experience RLQ pain when LLQ is palpated.

Referred rebound tenderness.

-Pain in the RLQ indicate **positive rovsing's sign**

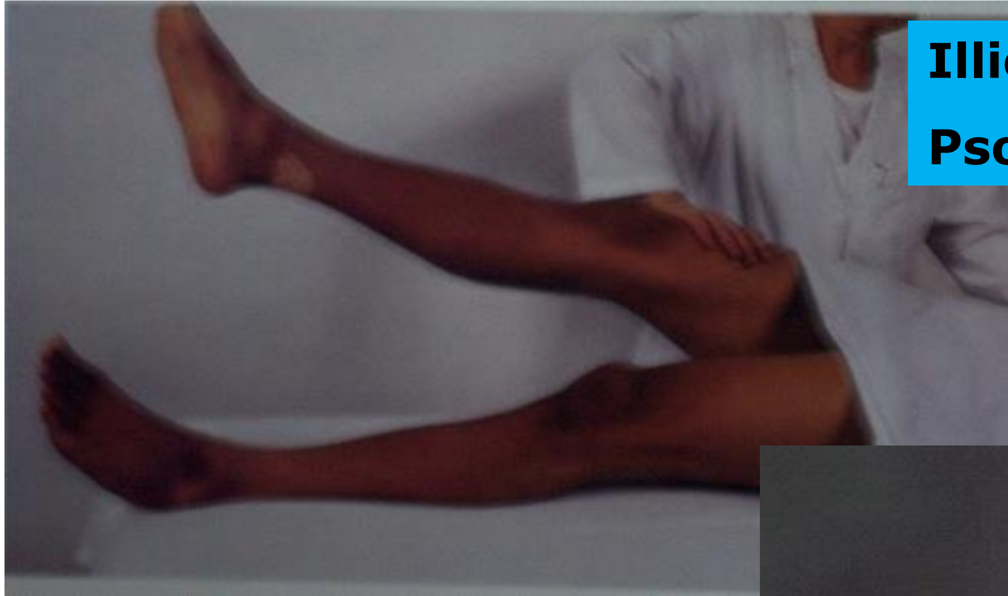


➢ **Illio Psoas Muscle Test: Psoas sign**

- Perform this test **when the acute abd. pain of appendicitis is suspected.**
- With pt. in **supine position**, lift the right leg straight up, flexing at the hip, then **push down** over the lower part of the right thigh as the pt. **tries to hold the leg up.**

- **Negative sign**---- Person feels no change.
- **Positive sign** ----- pain is felt in the RLQ

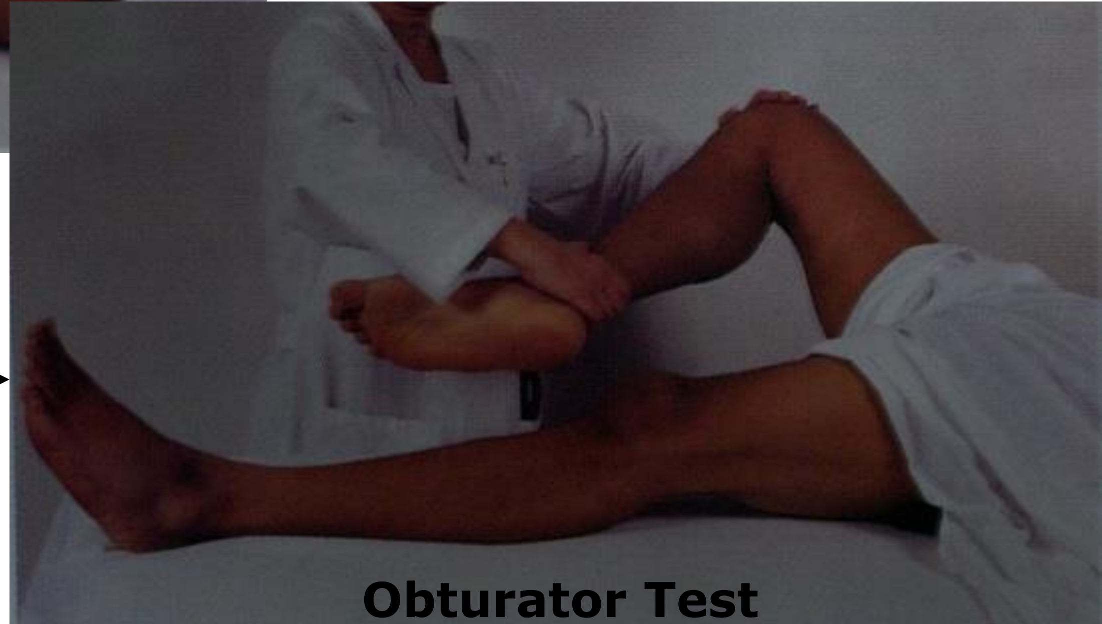
Special Procedures



Illiopsoas Muscle Test

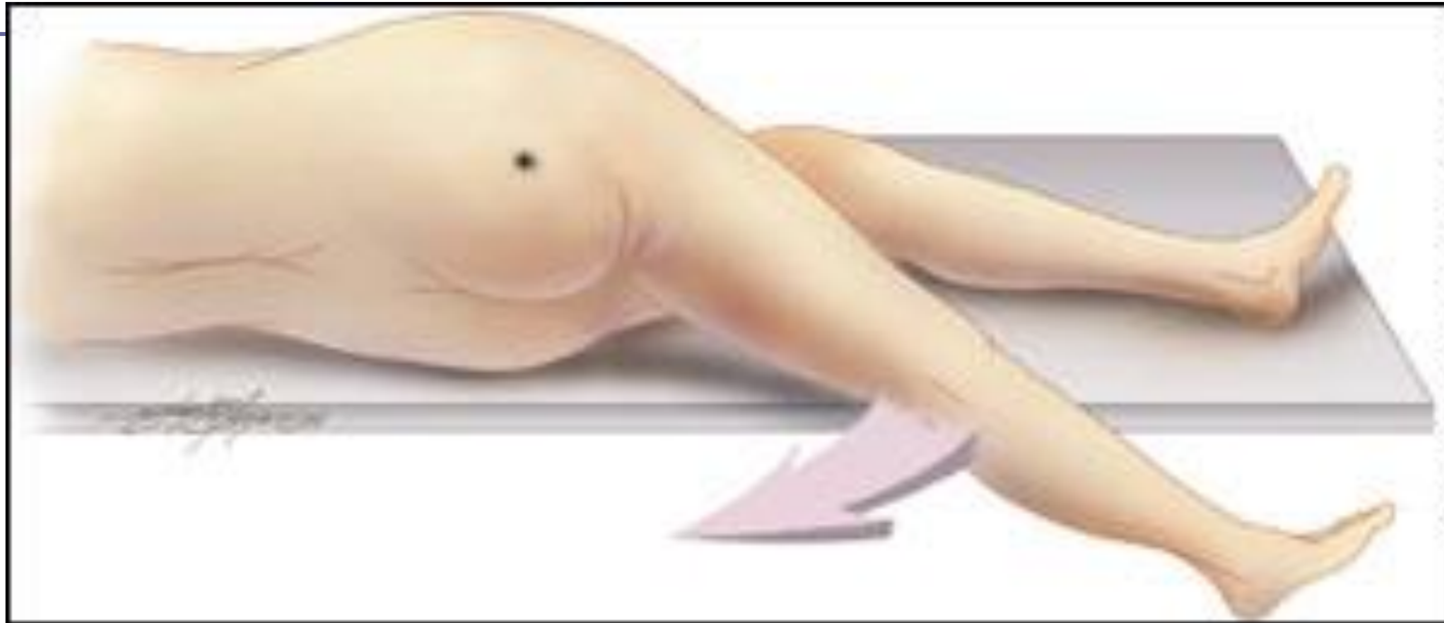
Psoas sign

A negative (Normal) Test is No Pain



Obturator Test

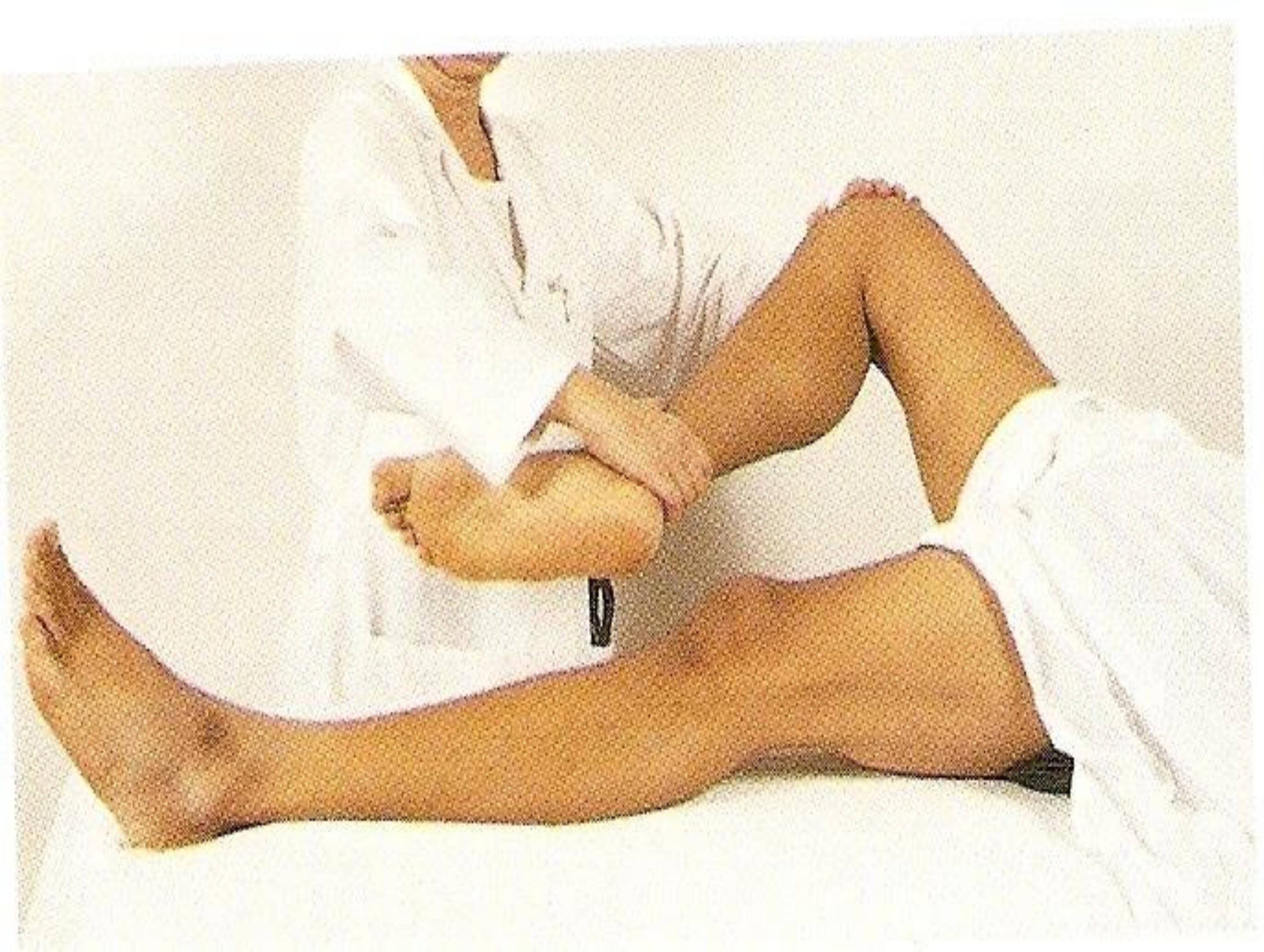
Ilio psoas Sign



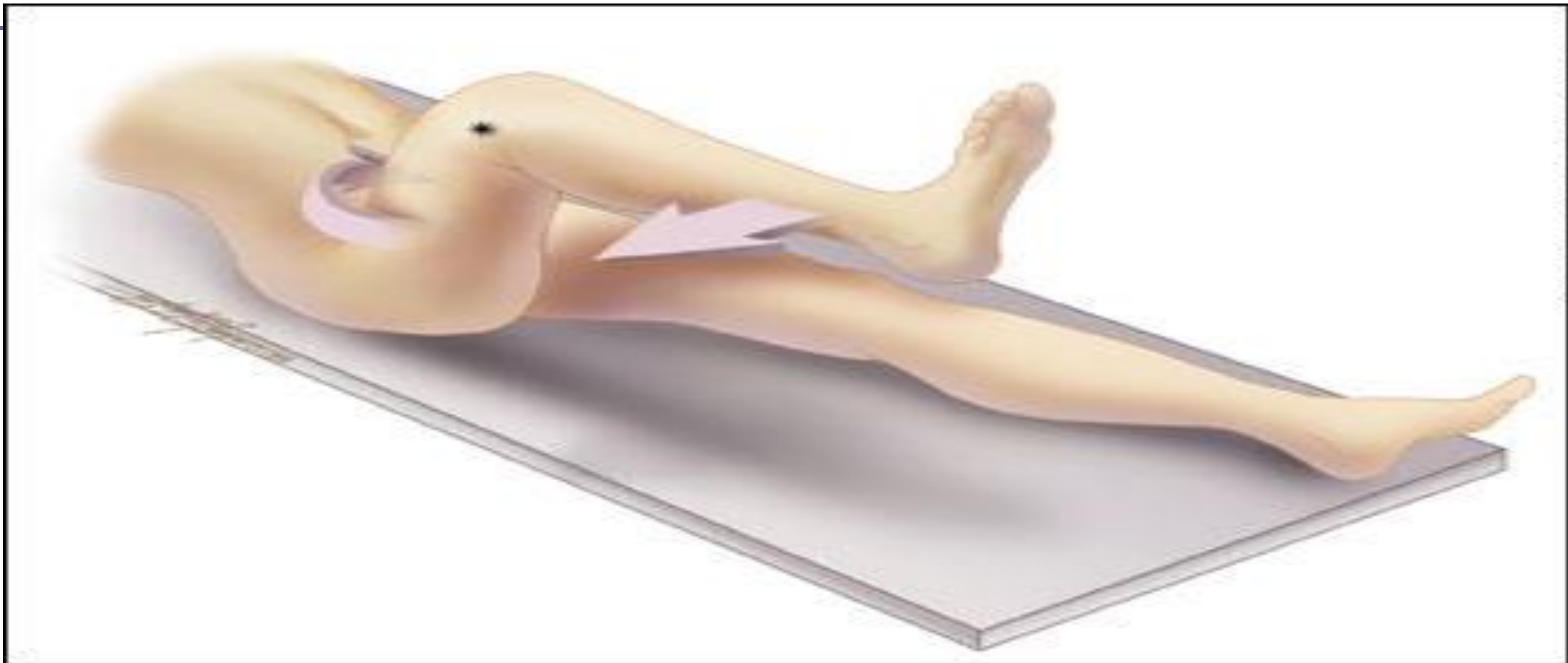
Patient can **lay on side** and extend leg at the hip or have patient lay **on back** and try to flex hip **against the resistance of examiner's hand on thigh**. If patient has an inflamed retro cecal appendix, this will produce **pain.**

Obturator test:

- With the pt. **supine**, lift the **RT leg**, **flexing at the hip and 90 degree at the knee.**
- **Hold the ankle** and **rotate** the leg internally and externally.
- **Negative sign**: No pain.
- **Positive sign**: Producing **pain (Perforated appendix)**



Obturator Sign



- **Internally rotate** right leg at the hip with the knee at 90 degrees of flexion. Will produce **pain if inflamed appendix** is in pelvis.

Test for cutaneous hyperesthesia:

-**pick up a fold of skin** between your thumb & index finger.

Normal: no pain

Localized pain - appendicitis

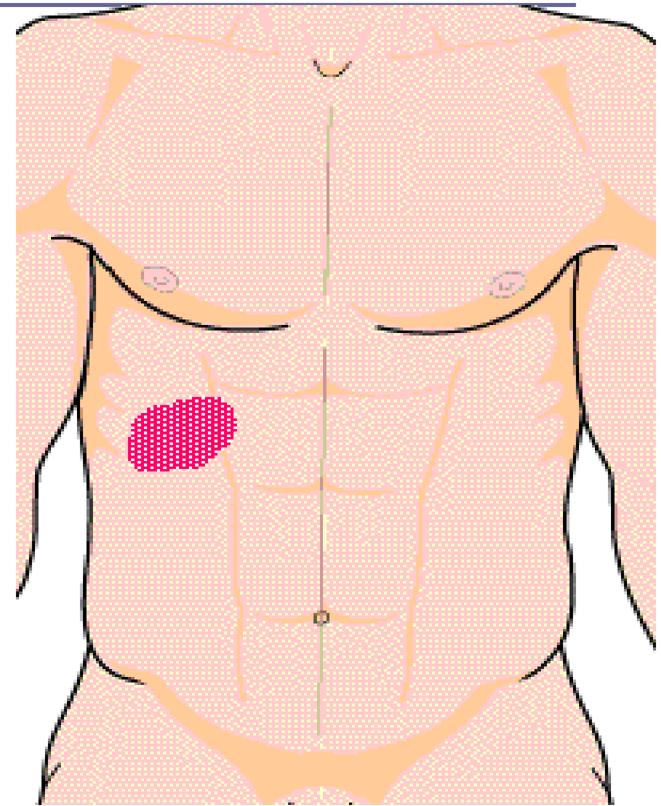
Murphy's Sign (acute cholecystitis)

1-Examiner's **hand is at middle inferior border of liver.**

2-Pt. is asked to take **deep inspiration**.

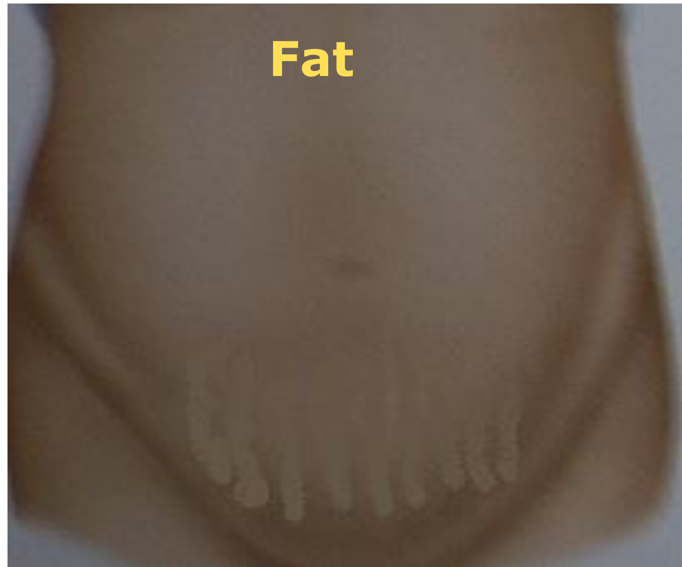
3- **Normally**: pt is able to complete the deep breath without pain.

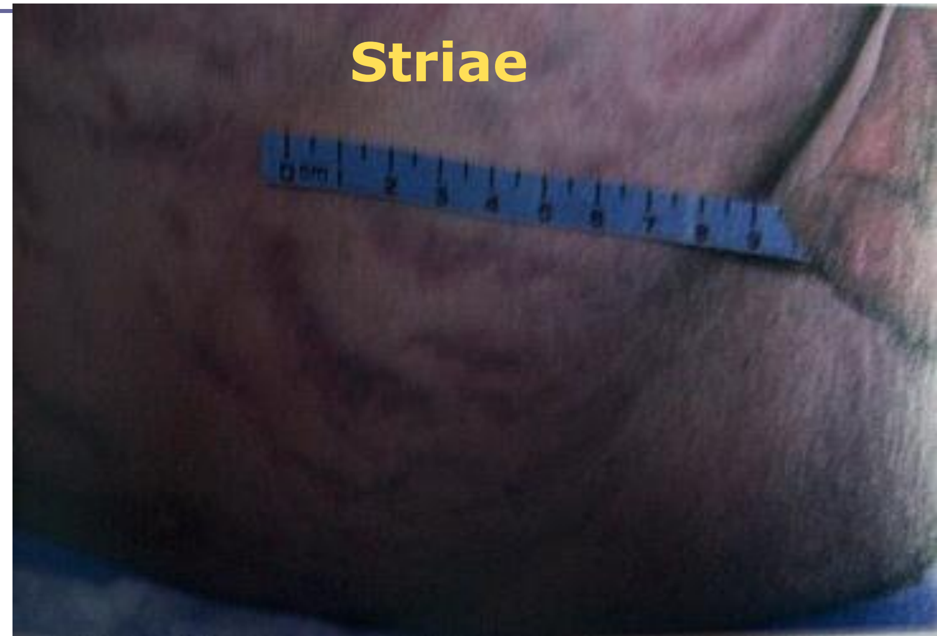
4-If **positive** pt. experience pain and will stop short of full inspiration

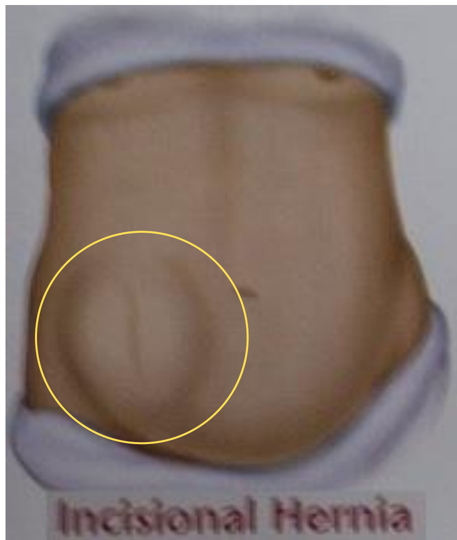


Hepatitis, subdiaphragmatic abscess, Cholecystitis

Common Abdominal Abnormalities

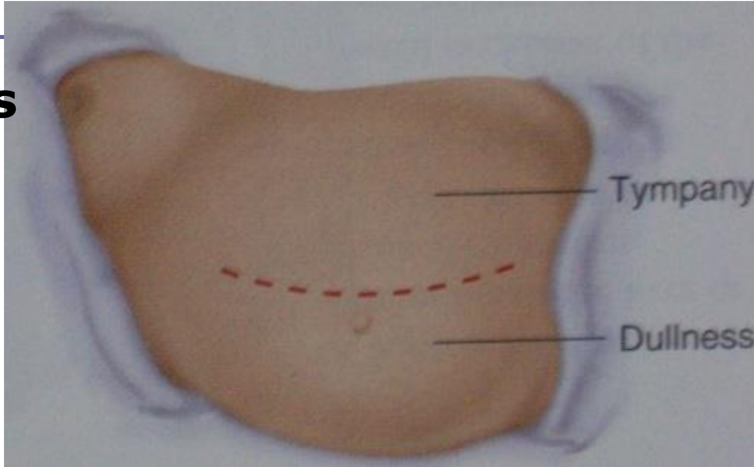


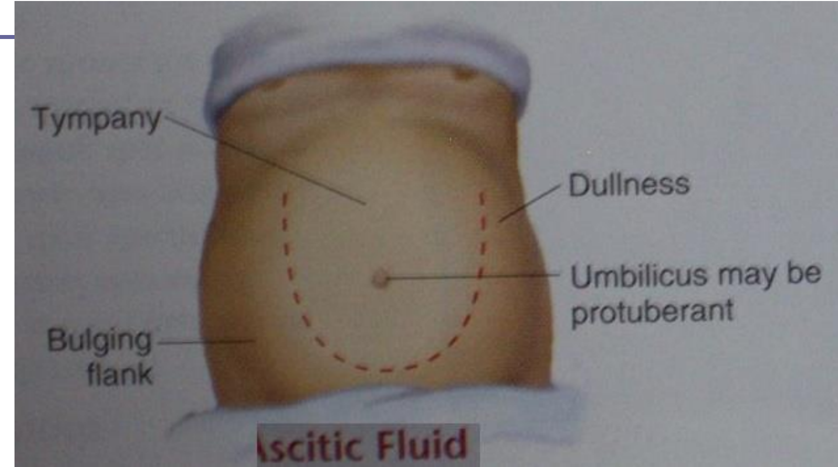




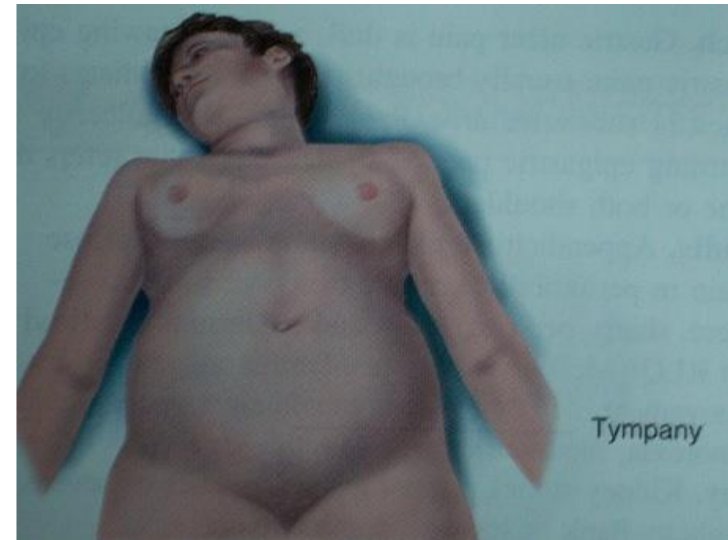
Common Abdominal Abnormalities

Ascites

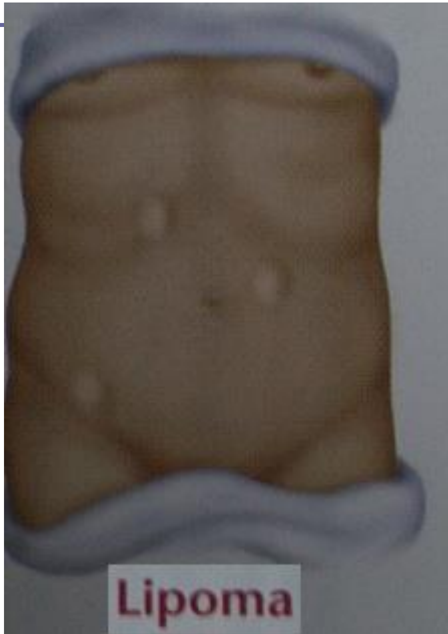


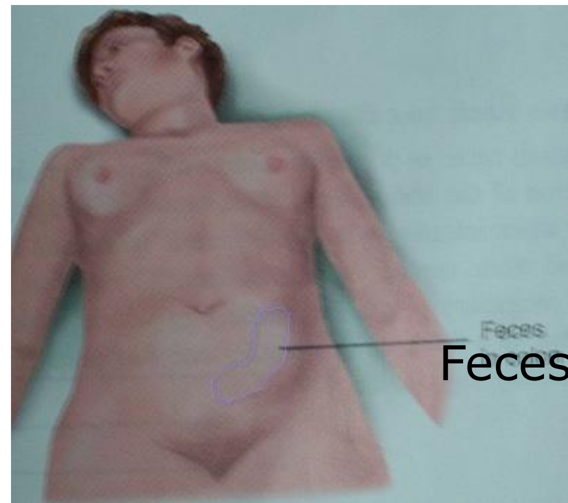


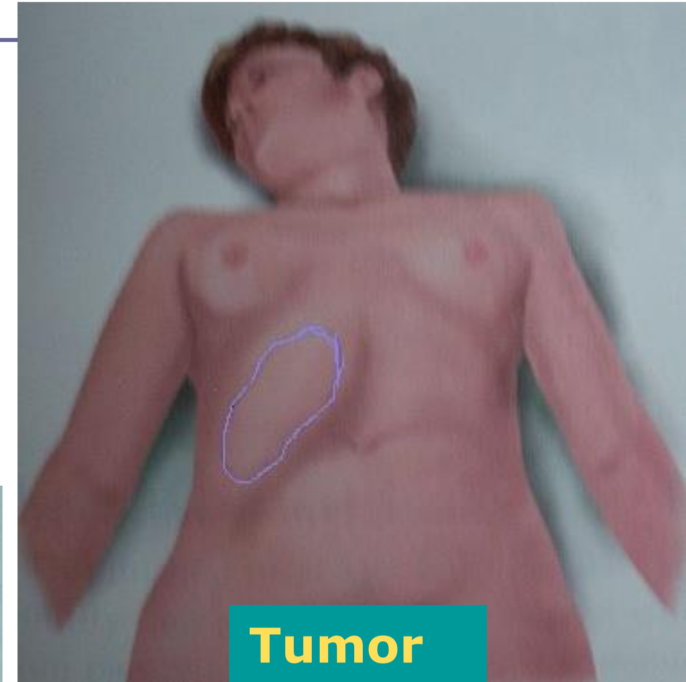
Gas

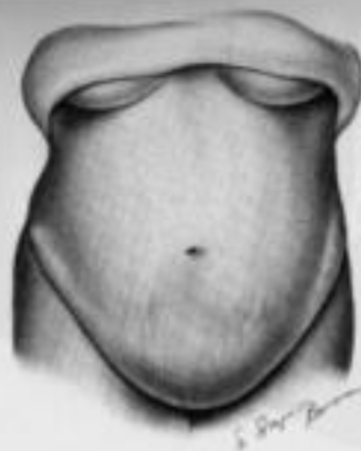


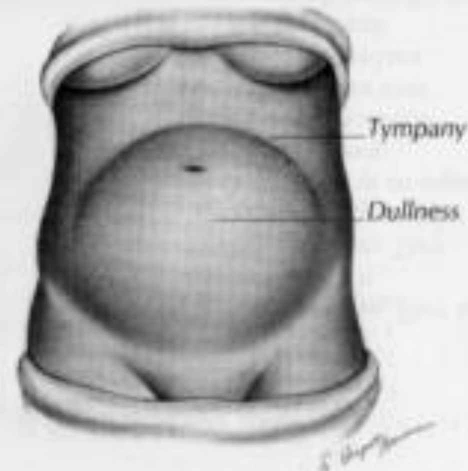
Common Abdominal Abnormalities











Fat

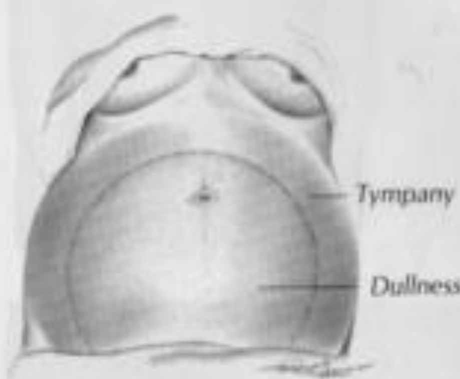
Fat is the most common cause of a protuberant abdomen and is associated with generalized obesity. The abdominal wall is thick. Fat in the mesentery and omentum also contributes to abdominal size. The umbilicus may appear sunken. The percussion note is normal. An apron of fatty tissue may extend below the inguinal ligaments. Lift it to look for inflammation in the skin fold or even for a hidden hernia.

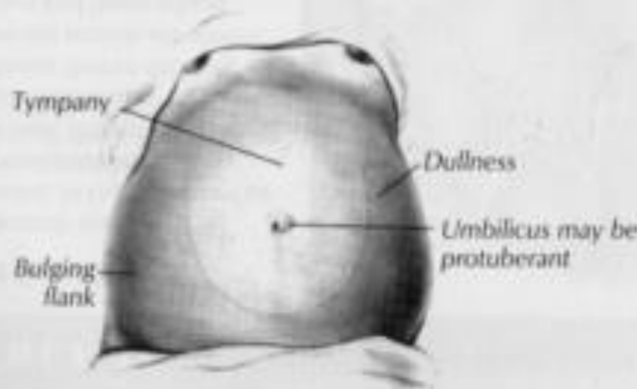
Gas

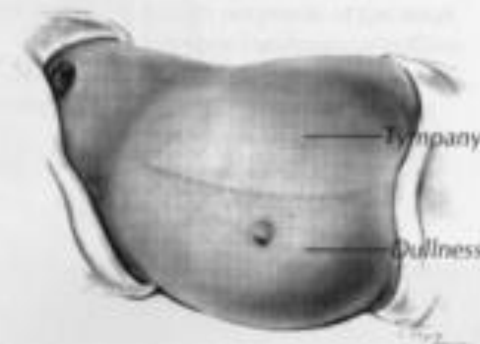
Gaseous distention may be localized, as shown, or generalized. It causes a tympanitic percussion note. Increased intestinal gas production due to certain foods may cause mild distention. More serious are intestinal obstruction and adynamic (paralytic) ileus. Note the location of the distention. Distention becomes more marked in colonic than in small bowel obstruction.

Tumor

A large, solid tumor, usually rising out of the pelvis, is dull to percussion. Air-filled bowel is displaced to the periphery. Causes include ovarian tumors and uterine myomata. Occasionally, a markedly distended bladder may be mistaken for such a tumor.







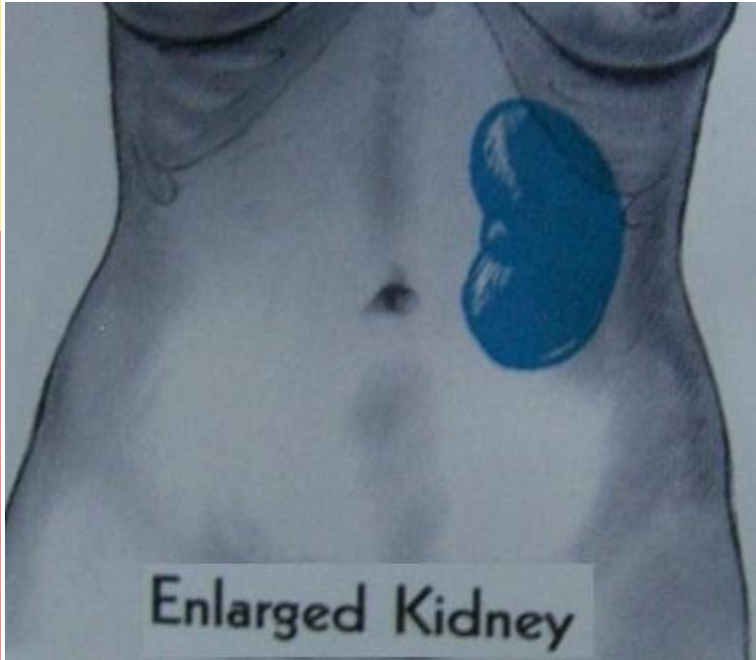
Pregnancy

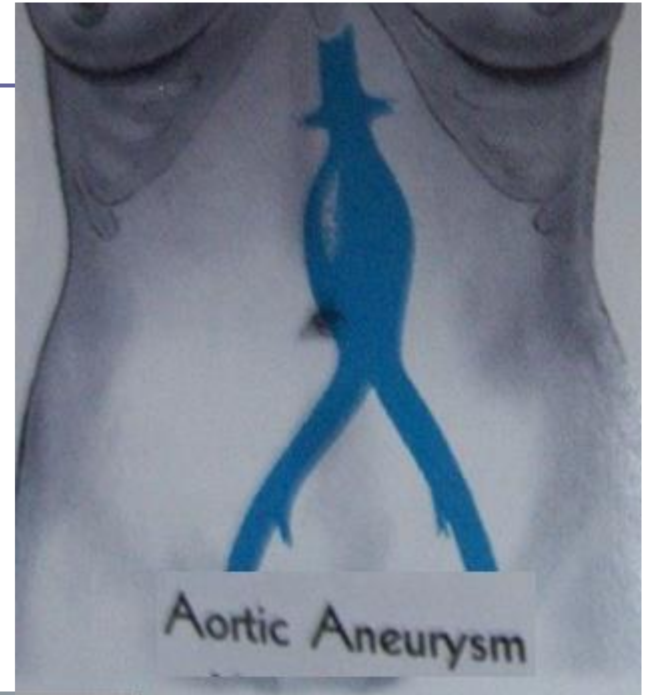
Pregnancy is a common cause of a pelvic "tumor." Listen for the fetal heart (see pp. 411–412).

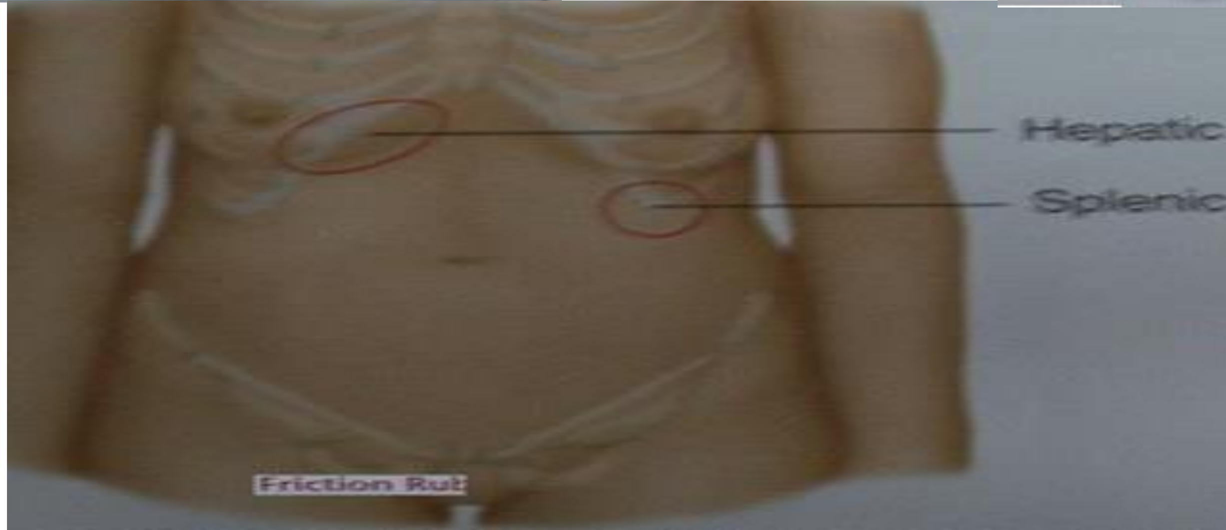
Ascitic Fluid

Ascitic fluid seeks the lowest point in the abdomen, producing bulging flanks that are dull to percussion. The umbilicus may protrude. Turn the patient onto one side to detect the shift in position of the fluid level (shifting dullness). (See pp. 350–351 for the assessment of ascites.)

Common Abdominal Abnormalities







Diagnostic Procedures
Barium Swallow

-**Is a test of the pharynx & esophagus done to detect tumors, strictures, ulcers, or other motility disorders.**

-The test done with pt in **upright position**, pt. swallow **barium sulfate** mixture & fluoroscopy is used to follow the passage of the barium down the esophagus

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Barium Enema or Lower GI series

- **-Is an x- ray visualization of large intestine: to** diagnose polyps, tumors, fistulas, obstruction, diverticula,& stenosis

-Procedure: rectal catheter is inserted & **barium** is instilled by gravity slowly then **films** are taken. Pt instructed to take deep breaths & anal sphincter closed.

-Follow up care; mild laxative or cleaning enema, assess stool, drink plenty of water.

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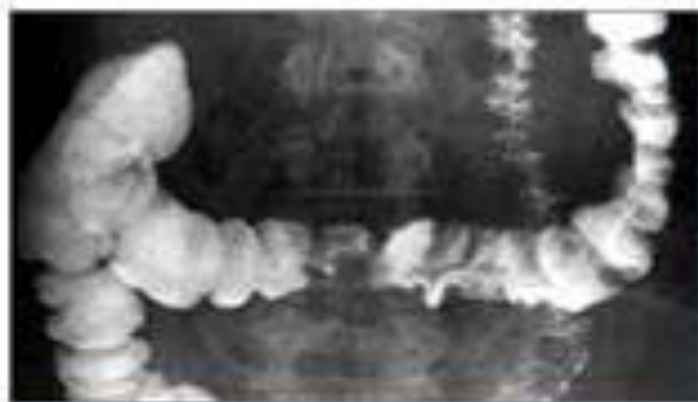
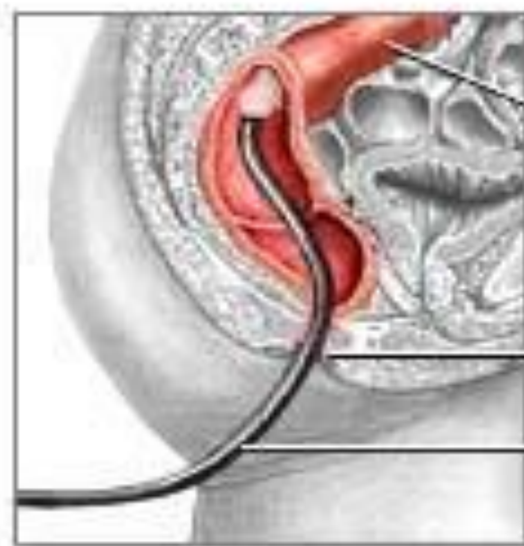
Barium liquid is instilled into the large intestine through the anus





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Diagnostic Procedures
Cholangiograghy

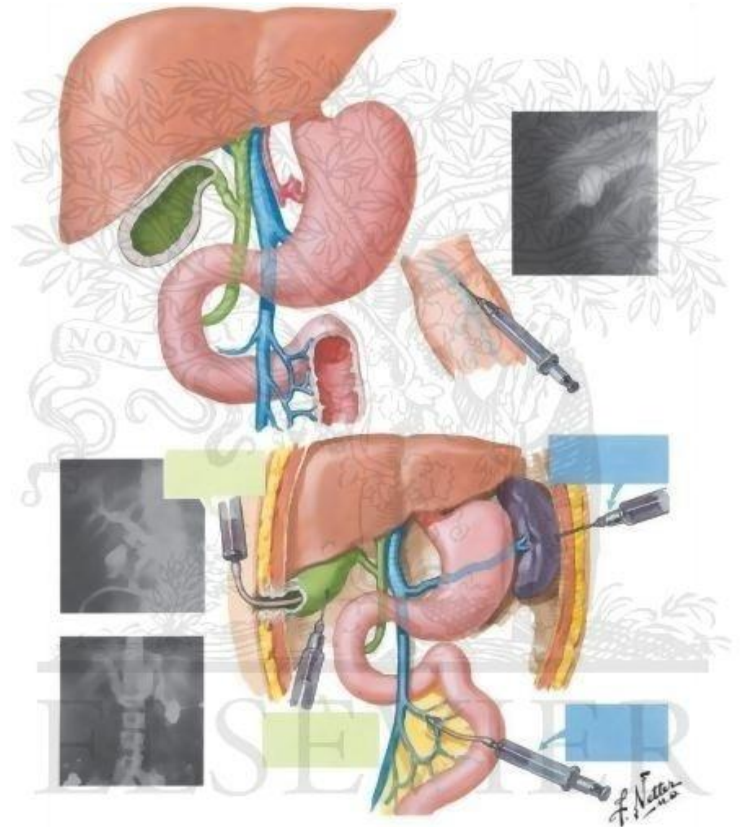
-Is **x-ray visualization of the biliary duct system with iodine dye**.

-Procedure:

pt **instructed to hold breath & a needle is inserted into liver under x-ray**

Visualization,

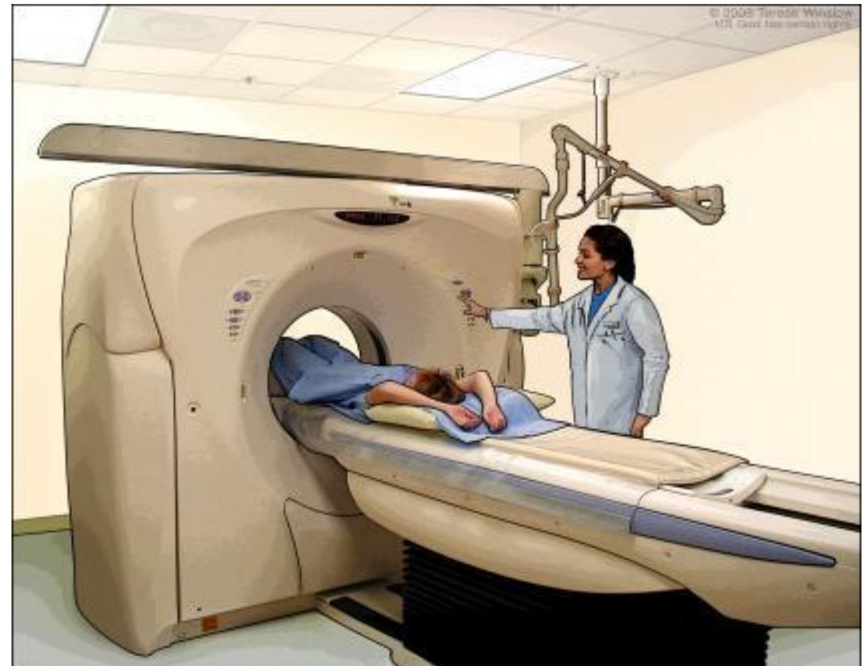
the **dye injected** as the needl is removed, **x-ray** Taken as dye reaches biliary duct.



Computed Tomography

-A **cross sectional x- ray** visualization that is used **to detect tissue densities & abnormalities in liver, pancreas, spleen, & biliary tract.**

-Procedure: pt should lie still & hold breath when asked.



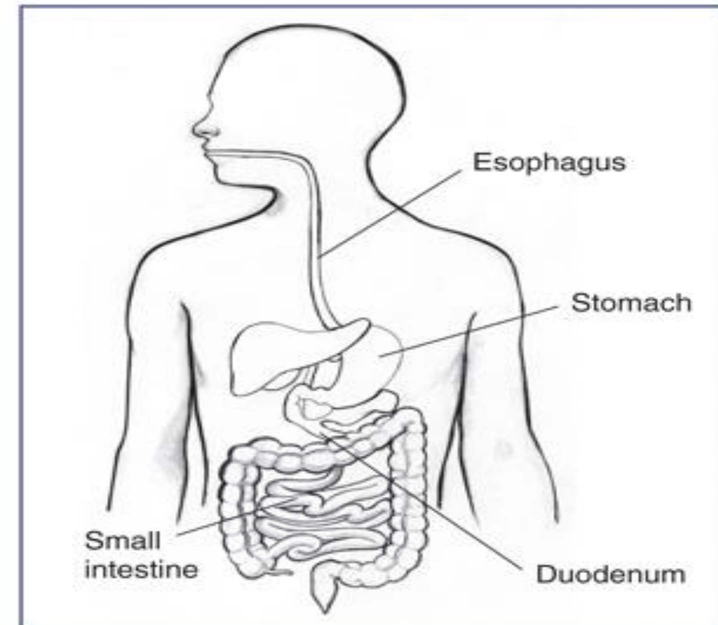
Endoscopy

Direct visualization of the GI tract using flexible fiberoptic endoscope.

Endoscopes of different sizes are used for different areas of the GI tract

Visualization of the esophagus, stomach, biliary system, & bowel is possible.

It is ordered : to evaluate bleeding, ulcerations, inflammation, masses, & Tumors. **Biopsy & cytological** Studies are possible if ? cancer



Upper GI Endoscopy

-Is visualization of **esophagus, stomach & duodenum**

-**Procedure:**

after taking medications, **pt is asked to swallow & a tube is passed** through mouth into esophagus (**neck hyperextend** during examination)

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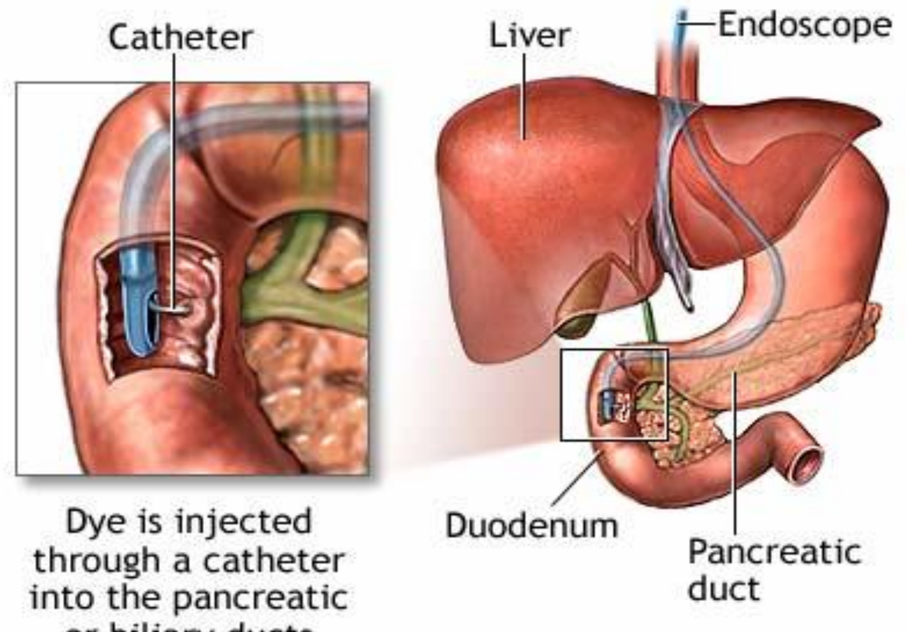
Cholangiopancreatography

-Includes **visual & radiographic** examination of **liver, gall bladder, & pancreas**

Procedure: same as upper endoscopy, except that the endoscope is **advanced farther** to the **duodenum & into the biliary tract**. **Contrast medium** is injected **& x-ray** are taken



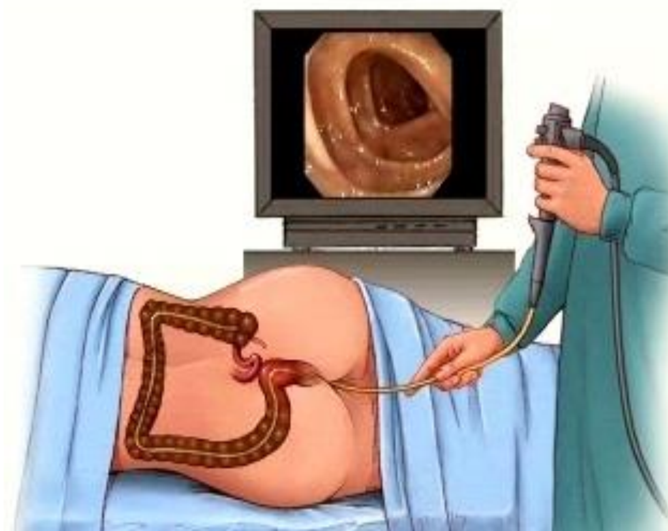
Dye is injected through a catheter into the pancreatic or biliary ducts

Colonoscopy

Is visual examination of the **entire large bowel**

Flexible fiberoptic endoscope passed through the rectum and advanced to visualize the large intestine

-**Procedure:** pt is placed in **left side with knees drawn up** while endoscope is passed through the bowel



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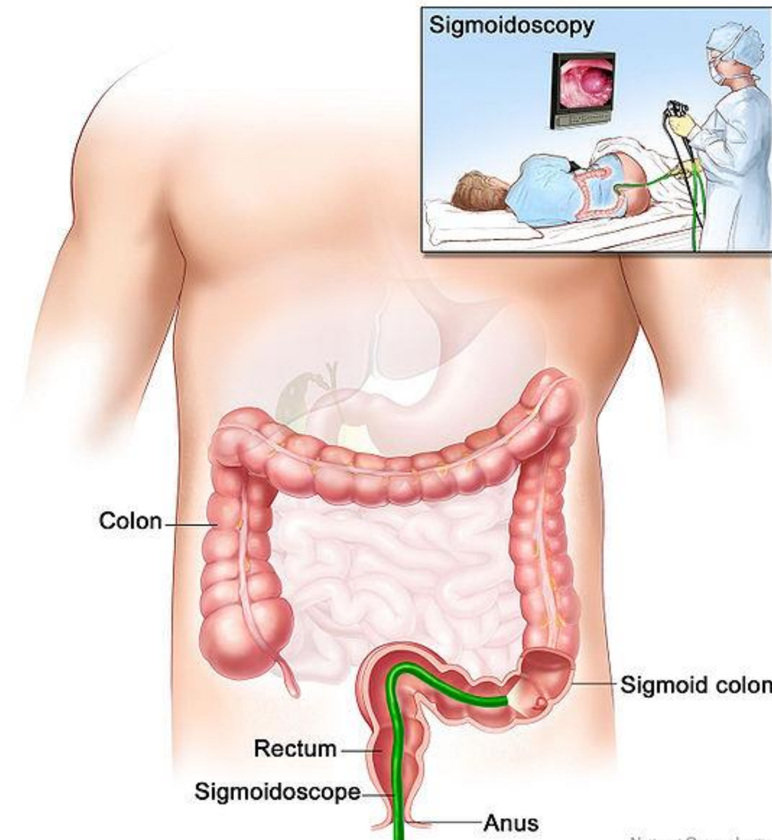
Sigmoidoscopy & Proctoscopy

-Is visual examination of **sigmoid colon,** and the later is visual examination of the **lower rectum & anal mucosa** (polyps, bleeding, tumors, and other defects

-**Procedure:**

pt placed on **left side in the knee chest position, sigmiodscope is passed first, the proctoscope is inserted next**



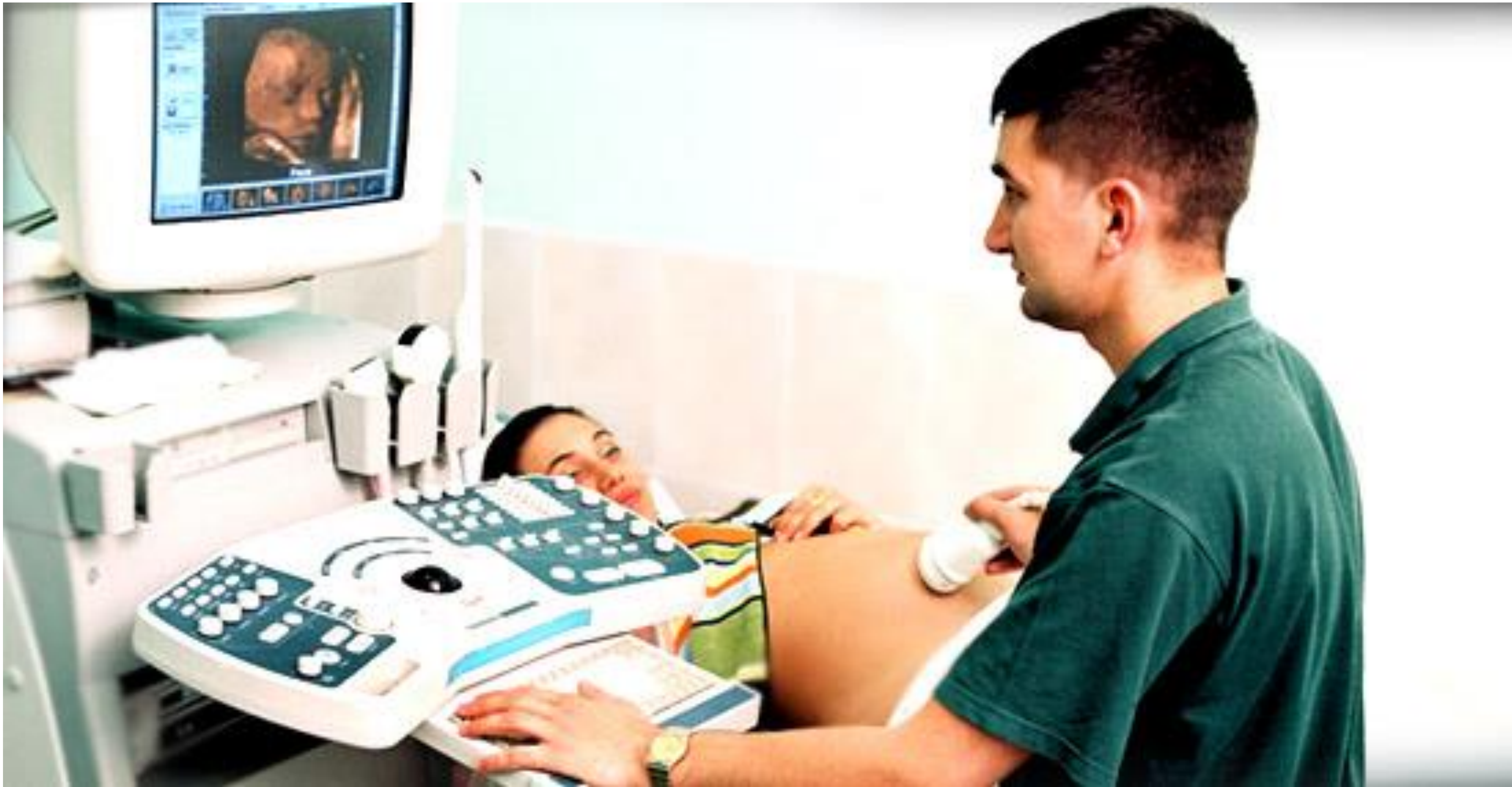
Ultrasonography

Is a technique in which **very high frequency inaudible vibratory sound waves are passed through the body**

Echoes of the sound waves are created **vary with tissue density changes.**

It is used to image **soft tissues; liver, spleen, pancreas, gall bladder, & biliary system.**

Procedure; pt lie in **prone or supine position**, **gel** is applied to the end of the transducer & on the area of abdomen under investigation, the **transducer** is moved back & forth over the skin until desired visualization are obtained.



Esophagogastroduodenoscopy) (EGD)

- Also known as EGD or **upper endoscopy**. A procedure that enables the examiner (usually a gastroenterologist) to examine the esophagus (the swallowing tube), stomach, and duodenum (the first portion

of small bowel) using
a **thin flexible tube**
(a "scope") that can
be **looked through**
or seen on a TV monitor

- An EGD is performed **to evaluate**, & sometimes to **treat**, such symptoms relating to the upper gastrointestinal tract as:

\- **pain** in the chest or upper abdomen

\- **nausea or vomiting**

- **Preparation :NPO**
- **Procedure**
  First, a "**topical" (local**) medication to *numb the gag reflex is given either by spray or is gargled.*
- *Patients ar*e usually **sedated** for the procedure (though not always) by injection of medications into a vein.
- The endoscopist then has the pt swallow the scope, which is passed through the upper gastrointestinal tract (GIT). The **lens or camera at the end** of the instrument allows the endoscopist to examine each portion of the upper GIT; **photos** can be taken for reference.

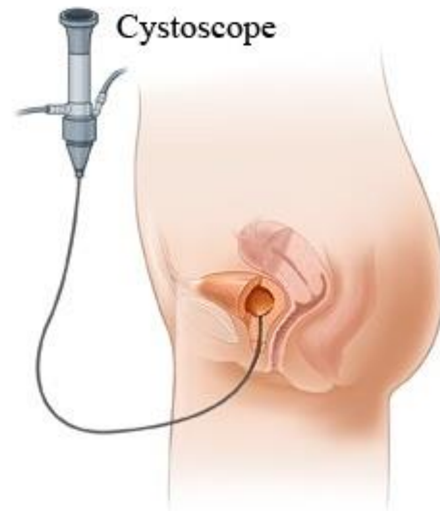
After care

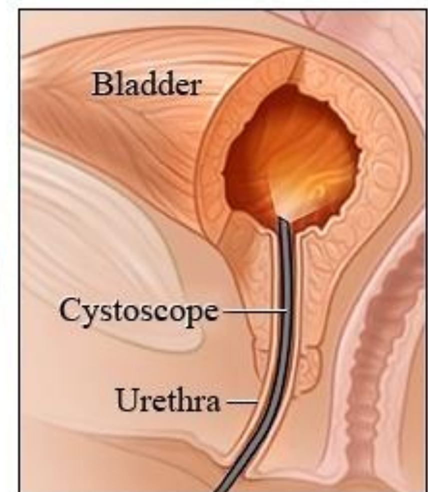
- Eating and drinking should be avoided until the local anesthetic has worn off in the throat & the gag reflex has returned(may take **2-4 hours).**
- To test if the **gag reflex** has returned, a spoon is placed on the back of the tongue for a few seconds with light pressure to see if the pt. gags.
- **Hoarseness and a mild sore throat** are normal after the procedure; the patient can **drink cool fluids or gargle** to relieve the soreness**.**
- assess **signs of perforation**

Cystoscopy (cystourethroscopy

- is a diagnostic procedure that uses a **cystoscope**, which is an endoscope especially designed

for urological use to examine **the bladder, lower urinary tract, and prostate gland**. It can also be used to **collect urine samples, perform biopsies, and remove small stones.**





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(Intravenous pyelogram) IVP

- Intravenous pyelography Imaging: An **imaging** study of the transitional **mucosa** of kidneys, ureter, and bladder after IV **injection of a radiocontrast** which concentrates in the urine; an IVP outlines the **renal pelvis, ureters, bladder**