Abdominal Examination

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Objective

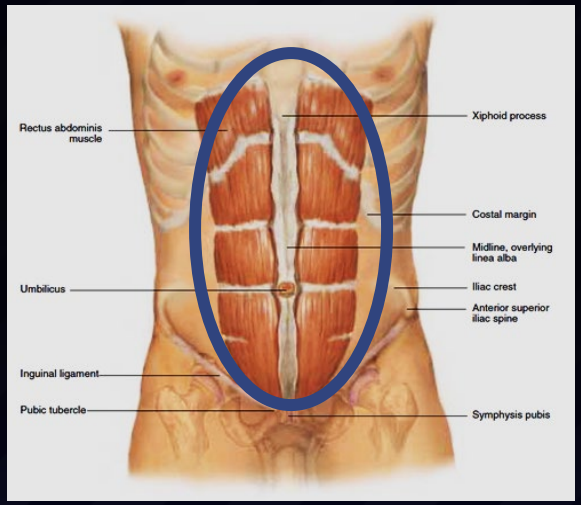
At the end of this unit, the student will be able to:

- Obtain Hx related to the abdomen.
- Perform an abdomen examination in the correct order: Inspection, Auscultation, Percussion, Palpation.
- Record subjective and objective findings obtained.

Anatomy & Physiology

Surface Landmarks:

- The abdomen is a large oval cavity extending from the diaphragm down to the brim of the pelvis.



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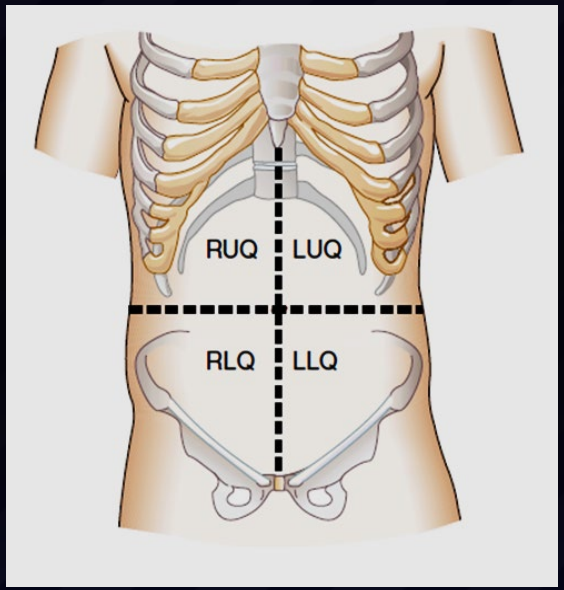
- The abdominal wall is divided in to four quadrants by a vertical and horizontal line bisecting the umbilicus (RUQ, RLQ, LUQ, LLQ).



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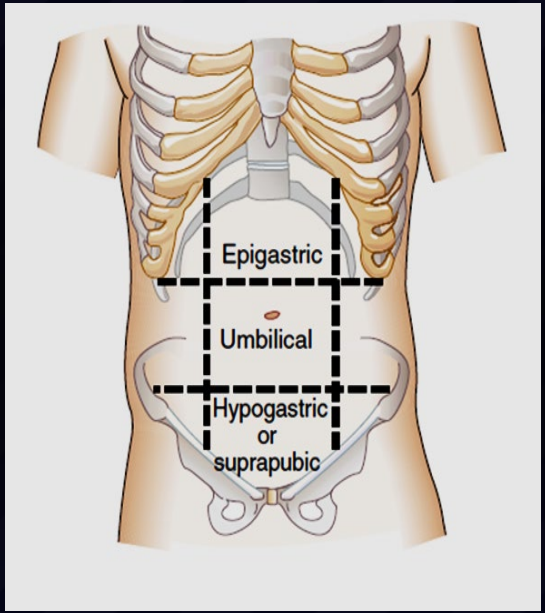
Another naming is also:

- **Epigastria** an area between the costal margins.
- **Umbilical** – Area around the umbilicus.
- **Hypo gastric or supra pubic** – Area above the pubic bone.



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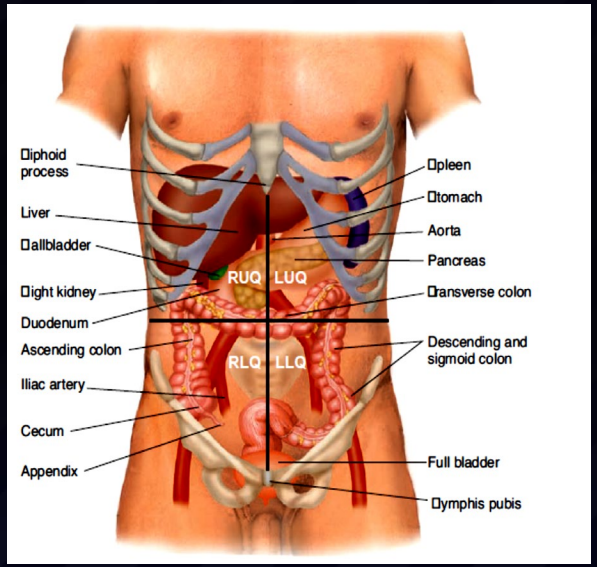
Right upper Quadrant which contains-

- Liver, gall bladder, duodenum, right kidney, hepatic flexure of colon, part of ascending and transverse colon.

Left upper quadrant which contains-

- Stomach, spleen, pancreases, left kidney, left adrenal gland, splenic flexure of the colon and part of transverse and descending colon.



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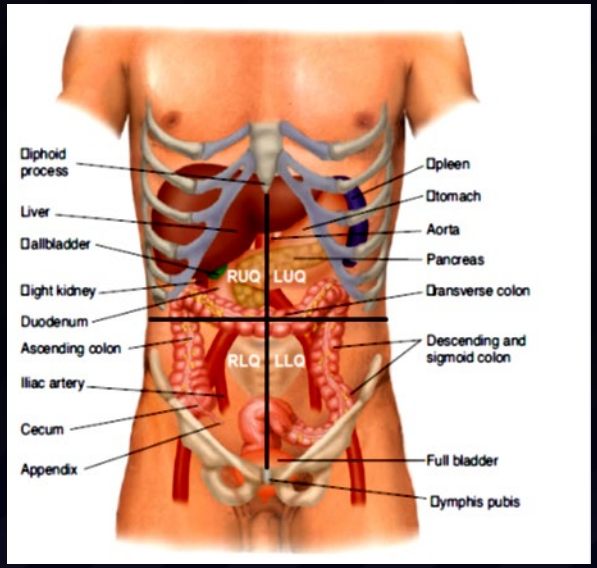
Right lower quadrant;

- Appendix, right ovary and tube, right ureter and right spermatic cord, distended bladder, cecum, portion of ascending colon, loops of small intestine

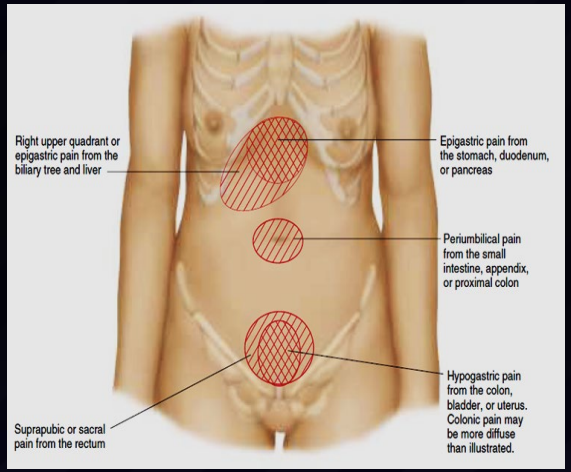
Left lower quadrant;

- Part of descending colon, sigmoid colon, left ovary and tube, left ureter, left spermatic cord,



Subjective Data

- Ask for abdominal pain (the most frequent), appetite, dysphagia, food intolerance, nausea, vomiting, bowel habits, rectal conditions and past abdominal surgery.



Equipment needed

- Stethoscope,
- Small centimeter ruler and
- Skin marking pen.

Method of examination

Steps for Enhancing Examination of the Abdomen

- The patient should have an empty bladder.
- Make the patient comfortable in a supine position, with a pillow for the head and perhaps another under the knees. Slide your hand under the low back to see if the patient is relaxed and flat on the table.
- Have the patient keep arms at the sides or folded across the chest. Often patients raise their arms over their heads, but this stretches and tightens the abdominal wall, making palpation difficult.
- Before you begin palpation, ask the patient to point to any areas of pain and examine these areas last.
- Warm your hands and stethoscope, and avoid long fingernails. You may need to rub your hands together or warm them up with hot water; you can also begin palpation through the patient's gown to absorb warmth from the patient's body before exposing the abdomen properly. Anxiety may make the hands cool, a problem that decreases over time.
- Approach slowly and avoid quick unexpected movements. Watch the patient's face closely for any signs of pain or discomfort.
- Distract the patient if necessary with conversation or questions. If the patient is frightened or ticklish, begin palpation with the patient's hand under yours. After a few moments, slip your hand underneath to palpate directly.

Objective Data

1. Inspection

- Inspects the contour/shape/, symmetry, umbilicus, skin, pulsation or movement and hair distribution.

Contour- stand on the right side and look down on the abdomen.

Cont…d

- See the profile from the rib margin to the pubic bone.
- The contour describes the nutritional state and normally ranges from flat to round

Abnormal: protuberant abdomen as in pregnancy, scaphoid (concave), and abdominal distension (the 7 F's- fat, fluid, faeces, foetus, foetal growth, fibroids, flatus)

Cont…d

- Symmetry- the abdomen should be symmetric bilaterally.
- Note any localized bulging, visible mass or asymmetric shape.

Umbilicus;

- Normally it is midline and inverted with no signs of inflammation or hernia.

Cont…d

- Umbilicus becomes everted and pushed upward with pregnancy, ascites, umbilical hernia, mass and Cullen’s sign.
- Skin:- striae-ascites, purple blue striae-Cushing's syndrome, spider nevi-liver disease, portal HTN, dilated vein-PHTN, ascites, cirrhosis, venacaval (inferior) obstruction.

Cont…d

- Pulsation or movement could be peristaltic waves or abdominal aorta.
- Marked pulsation could be aortic aneurysm, increased pulse pressure (HTN, thyrotoxicosis, aortic insufficiency) or increased peristaltic movement in intestinal obstruction.

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2. Auscultation

- Auscultate bowel sounds and vascular sounds.
- Auscultate abdomen next because percussion and palpation can increase peristalsis.
- Use the diaphragm end piece because bowel sounds are relatively high pitched.

Cont…d

- Hold the stethoscope lightly against the skin, pushing too hard may stimulate more bowel sounds.
- Begin in the RLQ at the ileocecal valve, because bowel sounds are always present here normally.

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Bowel sounds;

- Originate from the movement of air and fluid through the small intestine.
- They are high pitched gurgling occurring from 5-30 times before deciding bowel sounds are completely absent.
- Do not bother to count it.
- Judge for presence, hypoactive or hyperactive.

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- One type of hyperactive bowel sounds which is common is hunger or diarrhea which is hypeperistalsis known as “borborygmi” and perfectly “silent abdomen” is uncommon.
- You must listen for 5 minutes before saying absent bowel sounds.

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Abnormal

- Hyperactive sound are loud, high pitched, rushing, tinkling. Medication (Laxative) use, diarrhea, hunger.
- Hypoactive or absent sounds following abdominal surgery, peritonitis, LIO, or PI.

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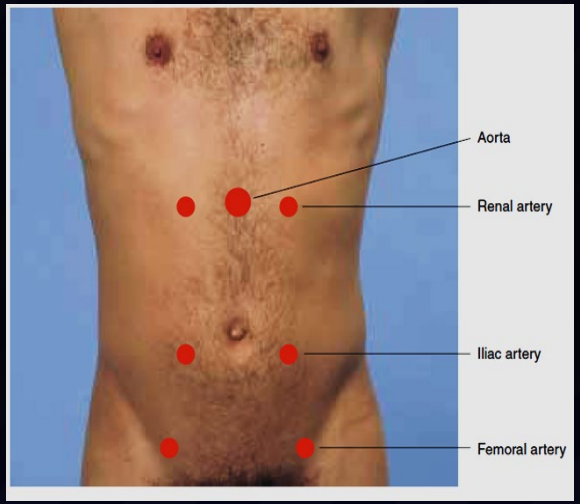
- Vascular sounds -note the presence of any vascular sounds or bruit. Using firmer pressure check over the aorta (1 inch from the umbilicus), renal arteries, iliac and femoral arteries, esp. with hypertensive case.
- Usually there is no such sound.



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3. Percussion

- Percuss for examination of general tympany, liver span and splenic dullness.
- Percuss to assess the relative density of abdominal contents to locate organs and to screen for abnormal fluid or masses.
- General tympany, first percuss lightly in all four quadrants to determine the prevailing amount of tympany and dullness.

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- Tympany should predominate because air in the intestine rises to the surface when the person is supine.
- Abnormal:- dullness occurs over a distended bladder, adipose tissue, fluid or a mass.
- Hyper resonance is present with gaseous distention.

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Liver span;

- Next percuss to map out the boundaries of certain organs.
- Measure the height of the liver in the right mid clavicular line (mid-way between the acromioclavicular and sternoclavicular joint).

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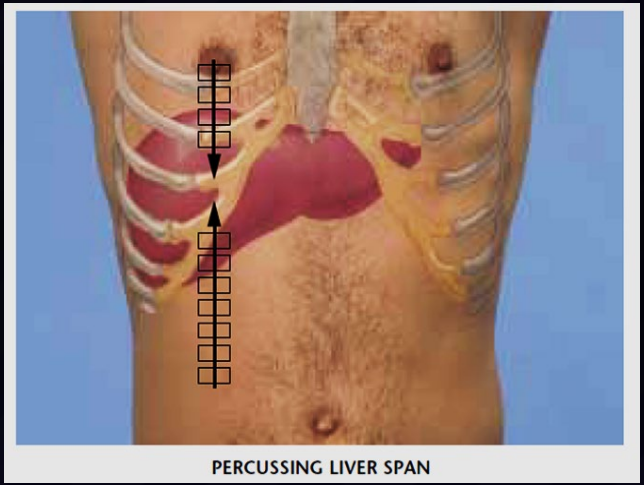
- Begin in the area of lung resonance, and percuss down the interspaces unit the sound changes to a dull quality. Mark the spot usually in the fifth intercostals space.
- Then find abdominal tympany, and percuss up in the mid clavicular line .
- Mark where the sound changes from tympany to a dull sound, normally at the right costal margin.



PERCUSSING LIVER SPAN

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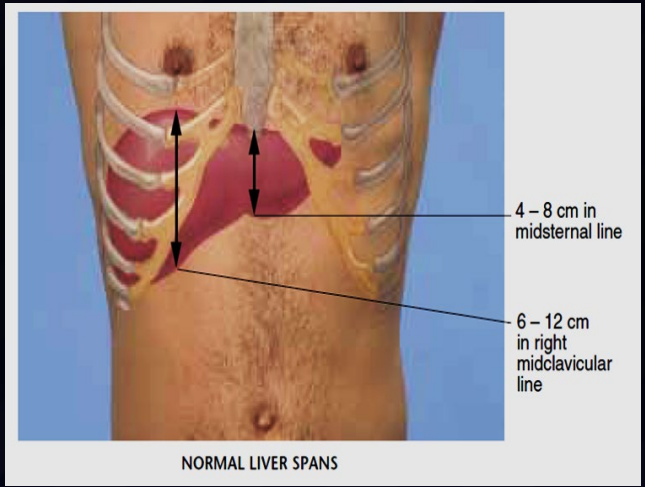
- Measure the distance between the two marks. The normal liver span in the adult ranges from 6-12cm.
- The height of the liver span correlates with the height of the person (tall longer liver; male - larger liver span than female of the same height).
- Abnormal enlarged liver span hepatomegaly.



NORMAL LIVER SPANS

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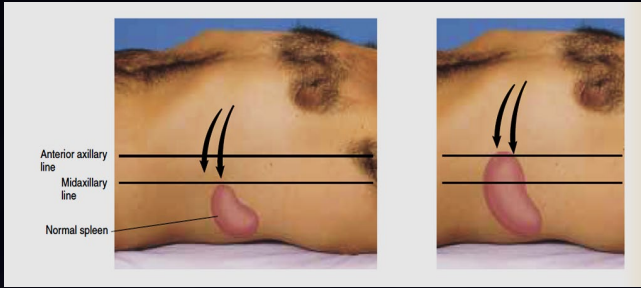
Splenic dullness;

- Located by a dull note from the 9th to 11th. intercostals space just behind the left mid axillary line.
- The area of splenic dullness normally is not wider than 7cm in the adult.



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- Now percuss in the lowest interspace in the left anterior axillary line.
- Tympany should result.
- Ask the person to take a deep breath. Normally tympany remains through full inspiration.

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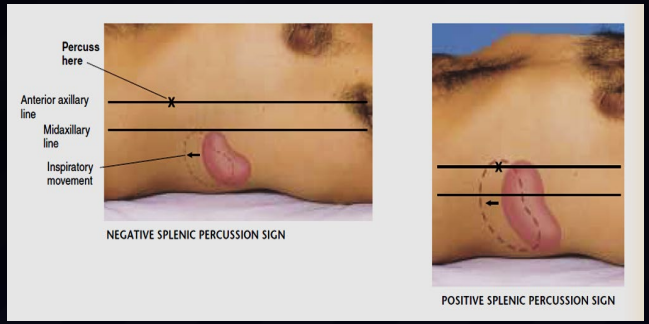
Abnormal:

- A change in percussion from tympany to a dull sound with full inspiration is a positive spleen percussion sign.
- Example:- Splenomegaly as in malaria, mononucleosis, trauma, or hepatic cirrhosis.



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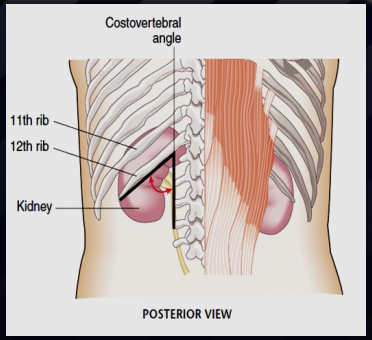
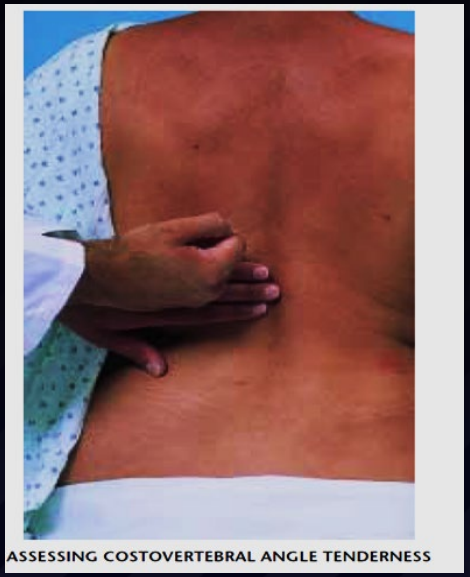
Costovertebral angle tenderness;

- To assess the kidney, place one hand over the 11th (left) or 12th (right) rib at the costovertebral angle on the back.
- Thump that hand with ulnar edge of your other fist. The person feels no pain.
- Abnormal: sharp pain occurs with inflammation of the kidneys.



POSTERIOR VIEW


ASSESSING COSTOVERTEBRAL ANGLE TENDERNESS

Cont…d

4. Palpation

- Palpate surface and deep area, liver edge, spleen and kidneys.
- Perform palpation to judge the size, location, consistency of certain organs and to screen for an abnormal mass or tenderness.

Cont…d

To enhance complete muscle (rectus abdominis) relaxation;

- Bend the person's knees.
- Keep your palpating hand low and parallel to the abdomen.
- Teach the person to breathe slowly (in through the nose and out through the mouth).

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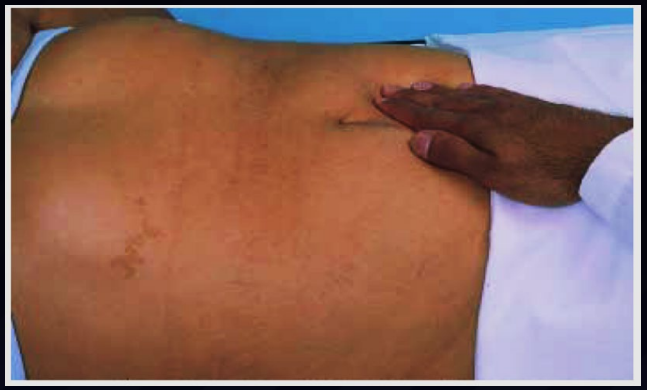
Use light and deep palpation

- Begin with light palpation.
- With the first fingers close together, depress the skin about 1cm.
- Make a gentle rotary motion sliding the fingers and skin together.



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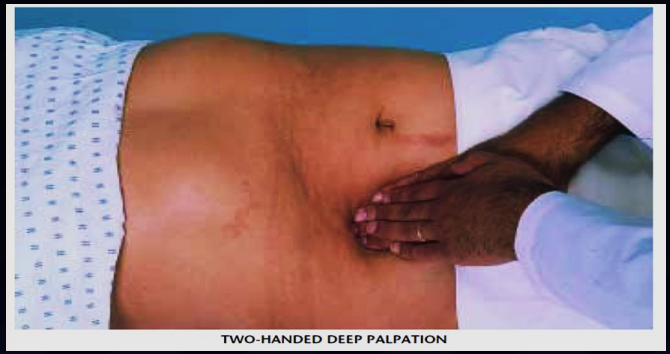
- Then lift the fingers and move clockwise to the next location around the abdomen.
- The objective here is not to search for organs but to form an overall impression of the skin surface and superficial musculature.
- **Abnormal**: involuntary rigidity is a constant board like hardness of the muscles as in peritonitis.

Cont…d

- In deep palpation push down about 5-8cm. Moving clockwise explore the entire abdomen.
- In case of very large or obese abdomen use a bimanual technique. Place your two hands on top of each other.
- The top hand does the pushing, the bottom hand is relaxed and can concentrate on the sense of palpation.



TWO-HANDED DEEP PALPATION

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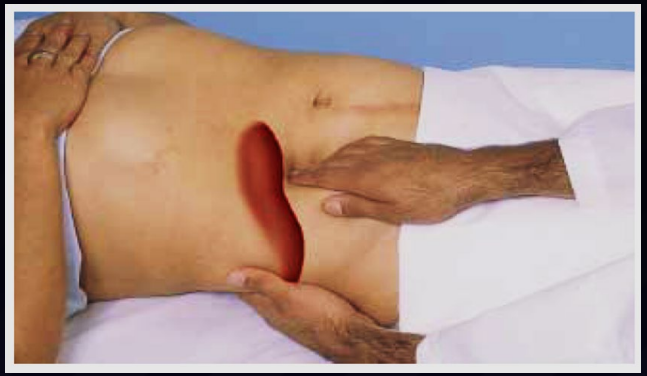
Liver;

- Place your left hand under the person back parallel to the 11th and 12th ribs and lift up to support the abdominal content.
- Place your right hand on the RUQ with fingers parallel to the midline.
- Push deeply down and under the right costal margin.



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- Ask the person to take a deep breath.
- It is normal to feel the edge of the liver bump your fingertips as the diaphragm pushes it down during inhalation.
- Often the liver is not palpable and you feel nothing firm.
- Abnormal liver palpated more than 1-2cm below the right costal margin is enlarged.

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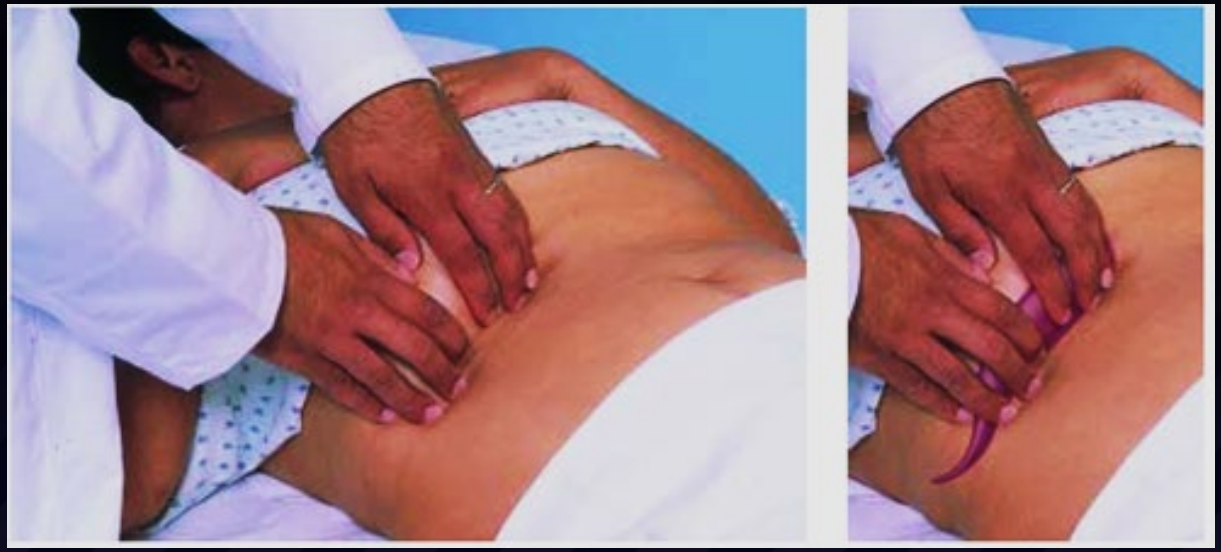
- Other technique to palpate the liver



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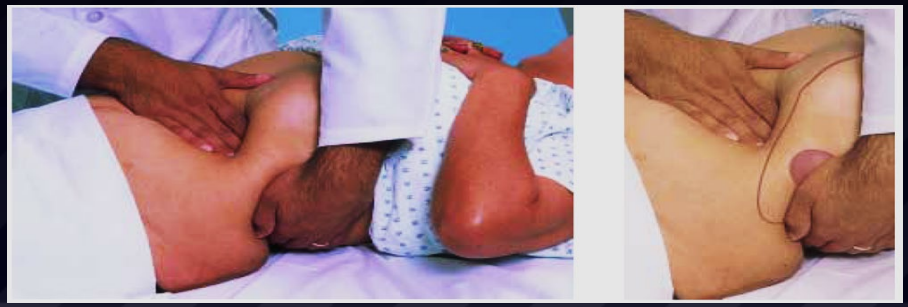
Spleen;

- Normally the spleen is not palpable and must be enlarged three times its normal size to be felt.
- Rich your left hand over the abdomen and behind the left side at the 11^{th} on 12^{th} ribs
- Lift up for support. Place your right hand obliquely on the LUQ with the fingers pointing to ward the left axillae and just inferior to the rib margin.



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- Push your hand deeply down and under the left costal margin and ask the person to take a deep breath you should feel nothing firm.
- When enlarged the spleen slides out and bumps your fingertips.
- It can grow so large that it extends in to the lower quadrant (2cm form costal margin on deep inspiration). When this condition is suspected, start low so you will not miss it.

Cont…d

- Abnormal: if you feel an enlarged spleen (COPD, portal hypertension, hematologic malignancies, HIV infection, and splenic infarct or hematoma, mononucleosis), refer the person but do not continue to palpate it is friable and can rupture easily with over palpation.

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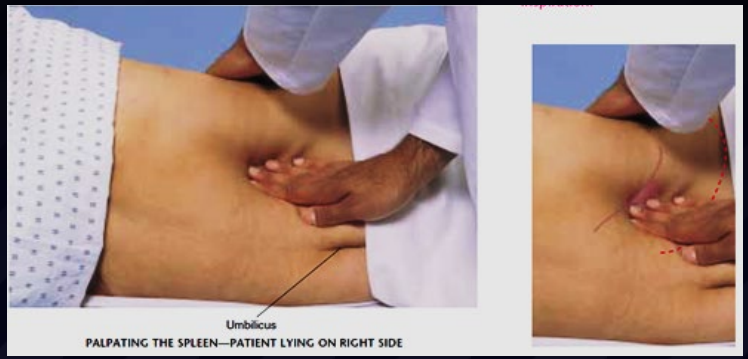
- Repeat with the patient lying on the right side with legs somewhat flexed at hips and knees. In this position, gravity may bring the spleen forward and to the right into a palpable location.



PALPATING THE SPLEEN—PATIENT LYING ON RIGHT SIDE

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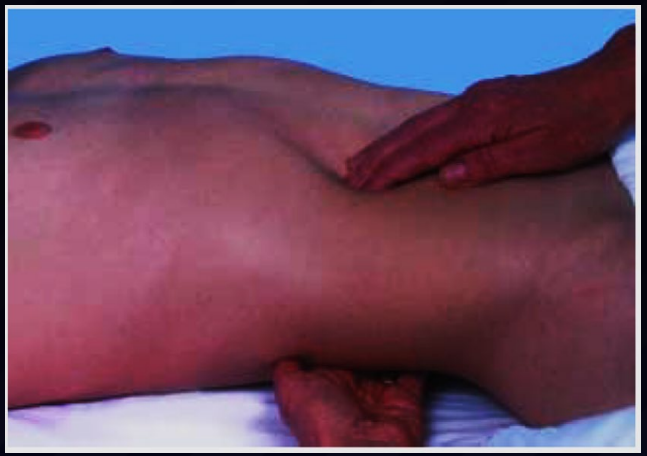
Kidneys;

- For the right kidney, place your hands together at the person's right flank.
- Press your two hands together firmly and ask the person to take a deep breath.
- In most people, you will feel no change.
- The left kidney sits 1cm higher than the right kidney and is not palpable normally.



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- Search for it by reaching your left hand across the abdomen and behind the left flank for support.
- Push your right hand deep in to the abdomen and ask the person to breath deeply.
- You should feel no change with inhalation.

Special Procedures

1. Rebound tenderness (Blumberg's sign);
   - Done with abdominal pain or tenderness during palpation.
   - Choose a site away from the painful area.
   - Hold your hand 90 degrees or perpendicular to the abdomen.

Cont…d

- Push down slowly and deeply, then lift up quickly. Not advisable (appendicitis)
- A normal or negative response is no pain on release of pressure. +ve- peritonitis accompany appendicitis.
- Do at the end of the examination because it causes sever pain and muscle rigidity.

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2. Inspiratory arrest (Murphy's sign);
   - Normally, palpating the liver causes no pain.
   - In a person with inflammation of the gall bladder or cholecystitis, pain occurs.
   - Hold your fingers under the liver border.
   - As the descending liver pushes the inflamed gallbladder on to the examining hand, the person feels sharp pain and abruptly stops inspiration mid way.

Cont…d

3. Iliopsoas muscle test;
   - Perform this test when acute abdominal pain or appendicitis is suspected.
   - With the person supine, lift the right leg straight up, flexing at the hip; then push down over the lower part of the right thigh as the person tries to hold the leg up. When the test is negative, the person feels no change.
   - Abnormal: pain in the right lower quadrant indicates appendicitis.

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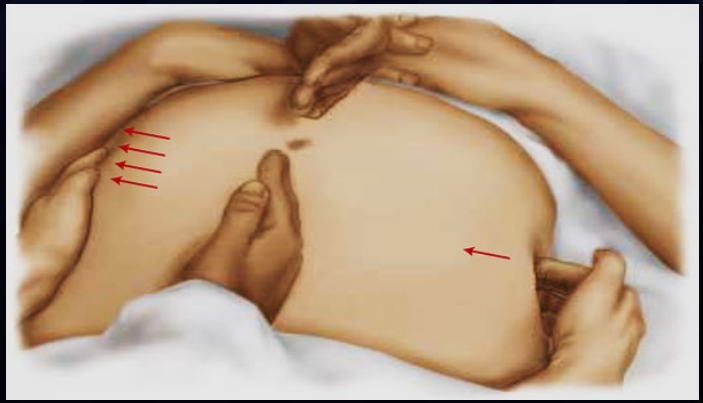
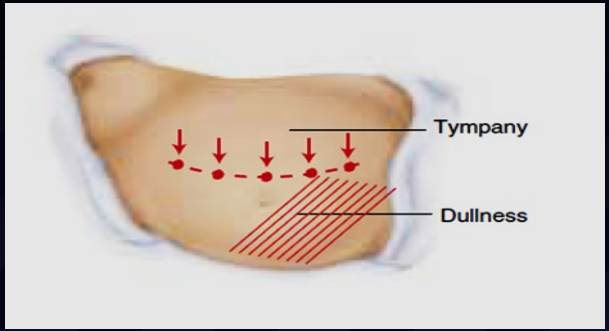
4. Obturator Test;
   - When appendicitis is suspected with the person supine, lift the right leg, flexing at the hip and 90 degrees at the knee.
   - Hold the ankle and rotate the leg internally and externally.
   - Negative or normal response is no pain.

Cont…d

5. Fluid wave/thrill and shifting dullness;
- Done when ascites is suspected.
- Percuss abdomen for general tympany.
- Mark in the area where tympany changed to dullness.
- Then ask the client to turn side and percuss again.
- Normal: No change of tympany sound.
- Abnormal: tympany will be changed to dullness.





Sample Recording

Subjective:

Ato Hailu a 40 year old unemployed male client states good appetite with no recent change, no dysplasia, no food intolerance, no pain, no nausea or vomiting. Has no Hx of abdominal disease, injury or surgery. Diet recall of last 24 hrs listed at the end of Hx.

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Objective Data

- Inspection -abdomen flat, symmetric with no apparent mass. Skin smooth, no striea, scars or lesions.
- Auscultation- bowel sounds present, no bruits.

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- Percussion- tympany in all 4 quadrants, liver span 8cm in the Rt mid clavicular line, splenic dullness at 10^{th} intercostals space in left mid-axillary line.
- Palpation- abdomen soft, no organomegally, no masses, and no tenderness.

Nursing Diagnosis

- Constipation related to immobility as manifested by absence of passing stool in the last 3 days.
- Diarrhea related to inflammatory process as manifested by increased frequency of bowel movement.

Thank you for your attention !!!