In The Name of

(A PROJECT OF NEW LIFE COLLEGE OF NURSING KARACHI)

UNIT 05:

ASSESSMENT OF THE ABDOMEN, ANUS & RECTUM

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Objectives.

- By the end of the unit, learner will be able to:
- Discuss the pertinent health history questions necessary to perform the assessment of abdomen, anus & rectum.
- Describe the specific assessment to be made during the physical examination of the abdomen.
- Practice assessment skills of abdomen.
- Discuss component of a rectal examination.
- Documents finding.
- List the changes in abdomen that are characteristics of aging process.

General Considerations

- The patient should have an **empty bladder**.
- The patient should be lying supine on the exam table and appropriately draped.
- The examination room **must** be quiet to perform adequate auscultation and percussion.
- **Watch the patient's face** for signs of discomfort during the examination

General Considerations

- Disorders in the chest will often manifest with abdominal symptoms. It is always wise to examine the chest when evaluating an abdominal complaint.
- Consider the inguinal/rectal examination in males. Consider the pelvic/rectal examination in females.

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

Structure and Function

- Surface landmarks
  - Borders of abdominal cavity
  - Abdominal muscles
- Internal anatomy (viscera)
  - Solid viscera
    - Liver
    - Pancreas
    - Spleen
    - Adrenal glands
    - Kidneys
    - Ovaries
    - Uterus

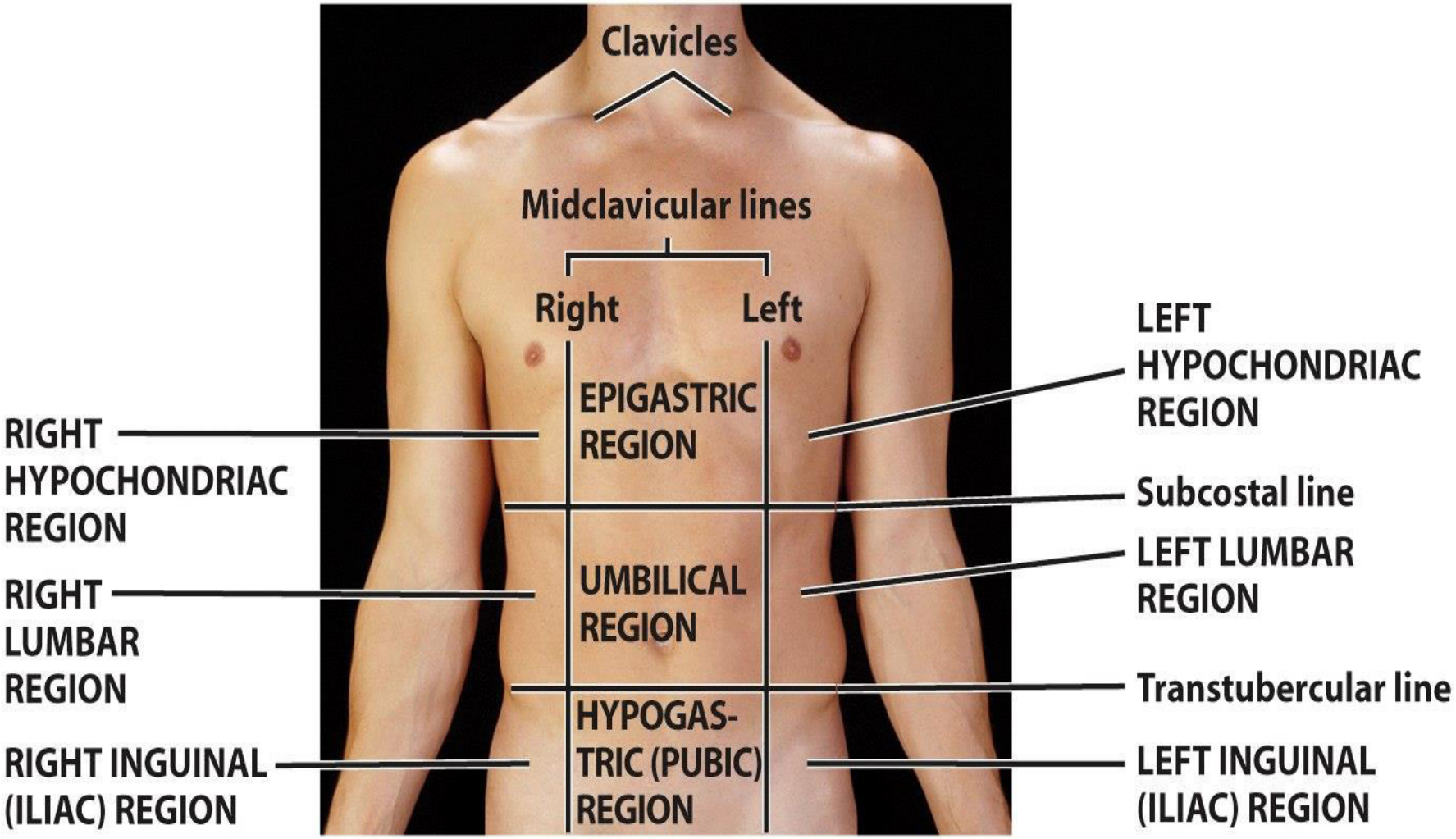
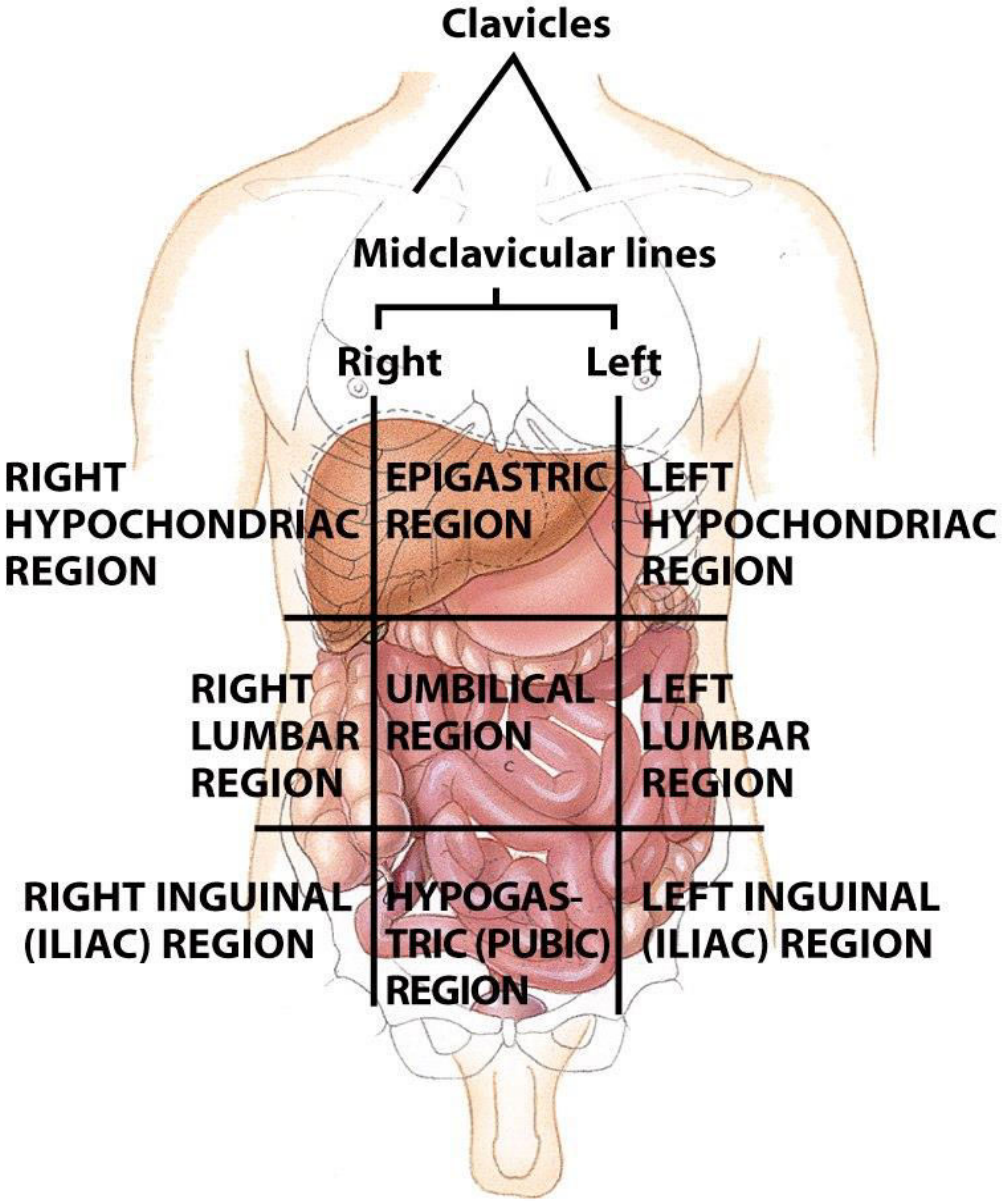


Figure 1-12a Principles of Anatomy and Physiology, 11/e



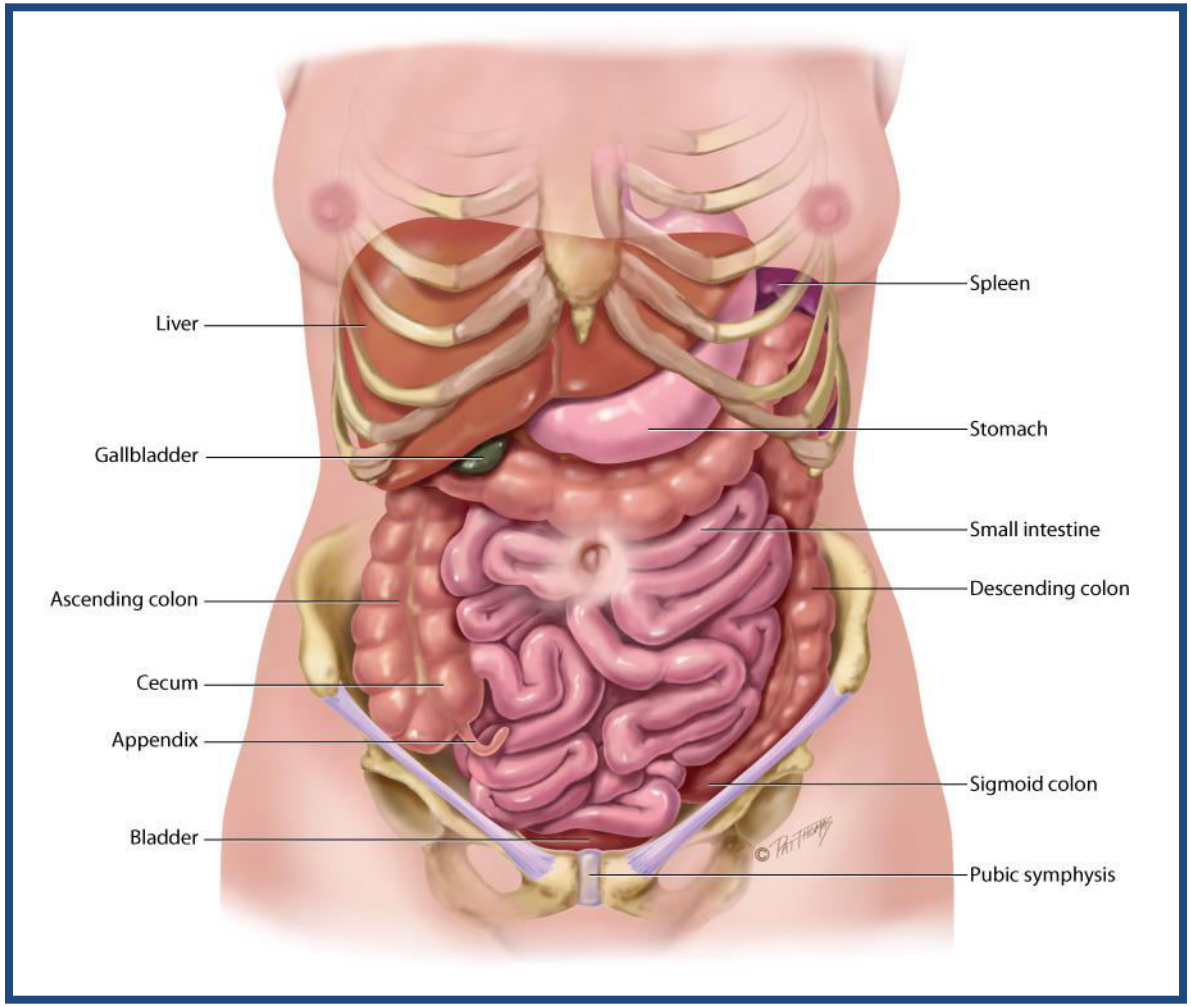
Anterior view showing location of abdominopelvic regions

Figure 1-12b Principles of Anatomy and Physiology, 11/e

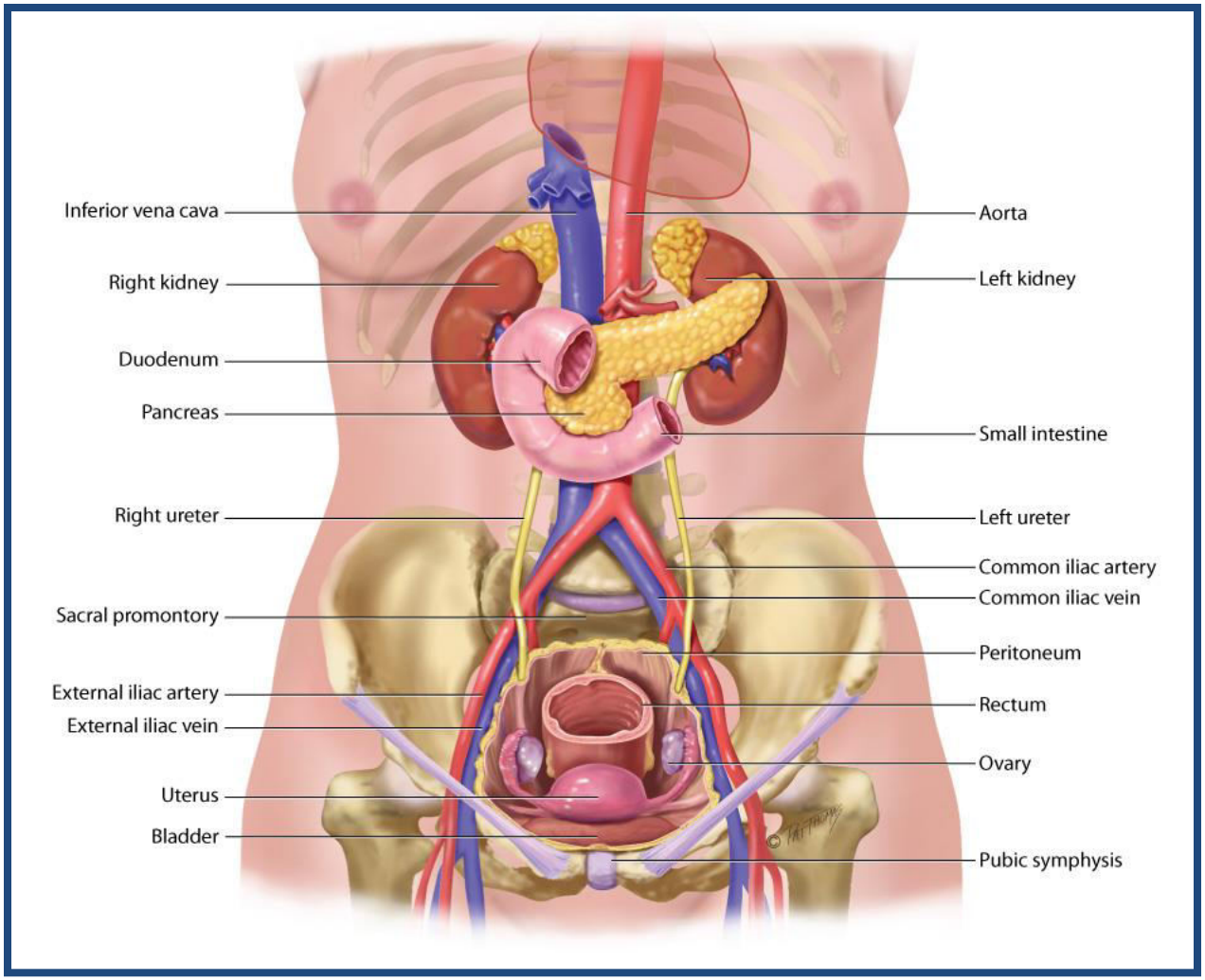
Structure and Function
(cont.)

- Internal anatomy (viscera) (cont.)
  - Hollow viscera
    - Stomach
    - Gallbladder
    - Small intestine
    - Colon
    - Bladder

Internal Anatomy

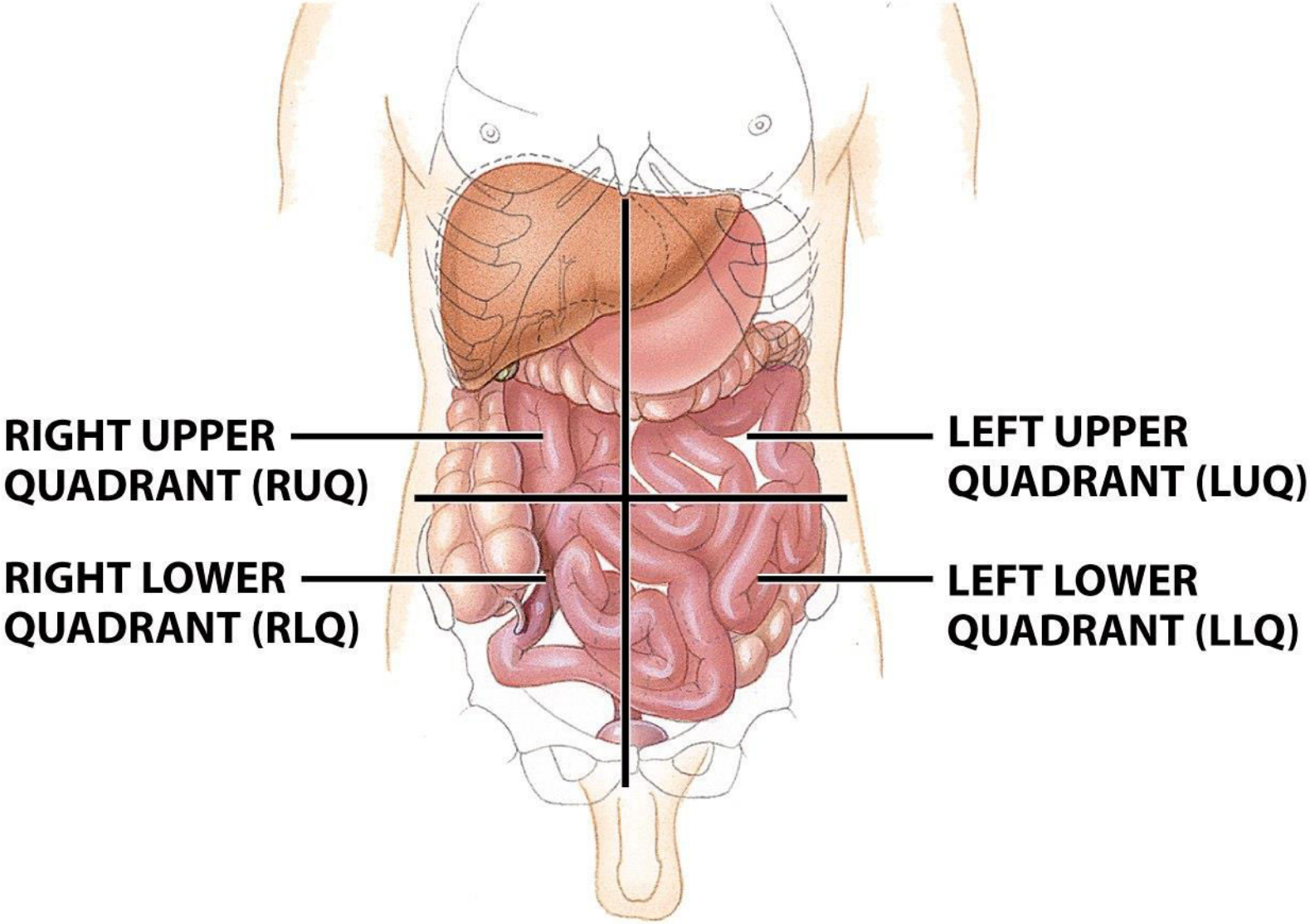


Deep Internal Anatomy



Structure and Function
(cont.)

- Abdominal wall divided into four quadrants
  - Right upper (RUQ)
  - Left upper (LUQ)
  - Right lower (RLQ)
  - Left lower (LLQ)

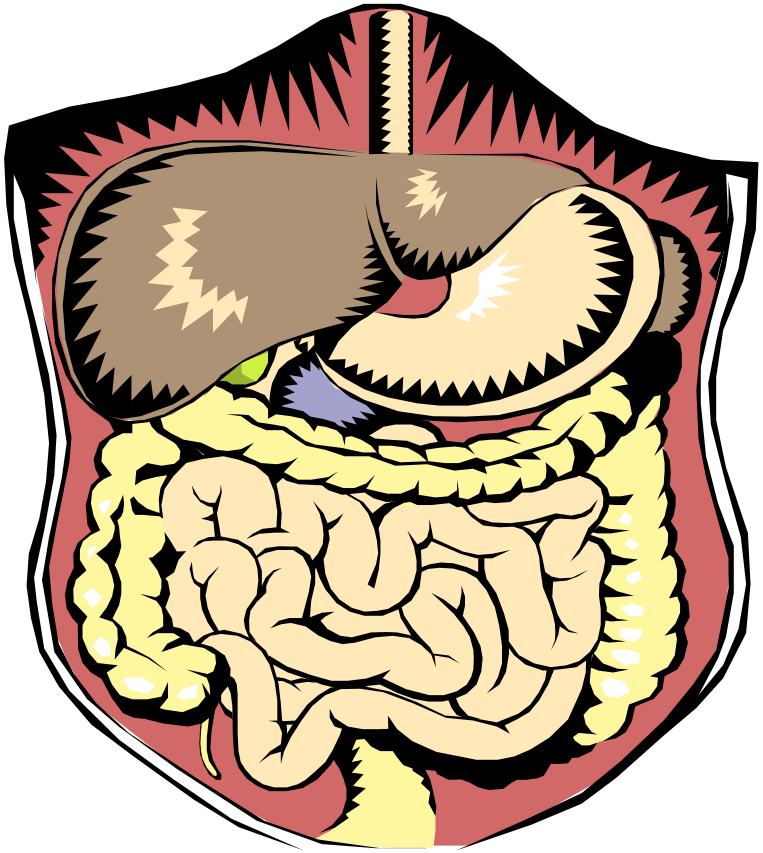


Anterior view showing location of abdominopelvic quadrants

Figure 1-12c Principles of Anatomy and Physiology, 11/e

Location! Location! Location!

- **RIGHT UPPER QUADRANT(RUQ)**
- Liver
- Gallbladder
- Duodenum (small intestine)
- Head of Pancreas
- Right kidney and adrenal
- Hepatic flexure of colon
- Part of ascending and transverse colon



Location! Location! Location!

- **LEFT UPPER QUADRANT(LUQ)**
- Left lobe of liver
- Stomach
- Spleen
- Left kidney and adrenal
- Body of pancreas
- Splenic flexure of colon
- Parts of transverse and descending colon

Location! Location! Location!

- **RIGHT LOWER QUADRANT(RLQ)**
- Cecum
- Appendix
- Section of the ascending colon
- Right ovary
- Right Fallopian tube
- Right ureter
- Right spermatic cord
- Part of uterus (If enlarged)

Location! Location! Location!

- **LEFT LOWER QUADRANT (LUQ)**
- Sigmoid Colon
- Part of descending colon
- Left Ovary
- Left fallopian tube
- Left ureter
- Left spermatic cord
- Part of uterus(If enlarged)

Subjective Data—Health History Questions

- Appetite
- Dysphagia
- Food intolerance
- Abdominal pain
- Nausea/vomiting, Regurgitation
- Bowel habits
- Abdominal history
- Medications
- Nutritional assessment

Subjective Data—Health History Questions

- Heartburn
- Rectal bleeding
- Hemorrhoids
- Previous surgery
- Weight gain or loss

Objective Data—The Physical Exam

- Preparation
  - Lighting and draping
  - Measures to enhance abdominal wall relaxation
- Equipment needed
  - Stethoscope
  - Small centimeter ruler
  - Skin-marking pen
  - Alcohol swab

PREPARATION

- Equipment - stethoscope, marking pen, ruler, paper for documentation
- Patient lie on back, pillow under head, knees slightly flexed
- Empty bladder
- Short fingernails
- Proper light
- Privacy maintain e.g. side screen

SEQUENCE OF ASSESSMENT

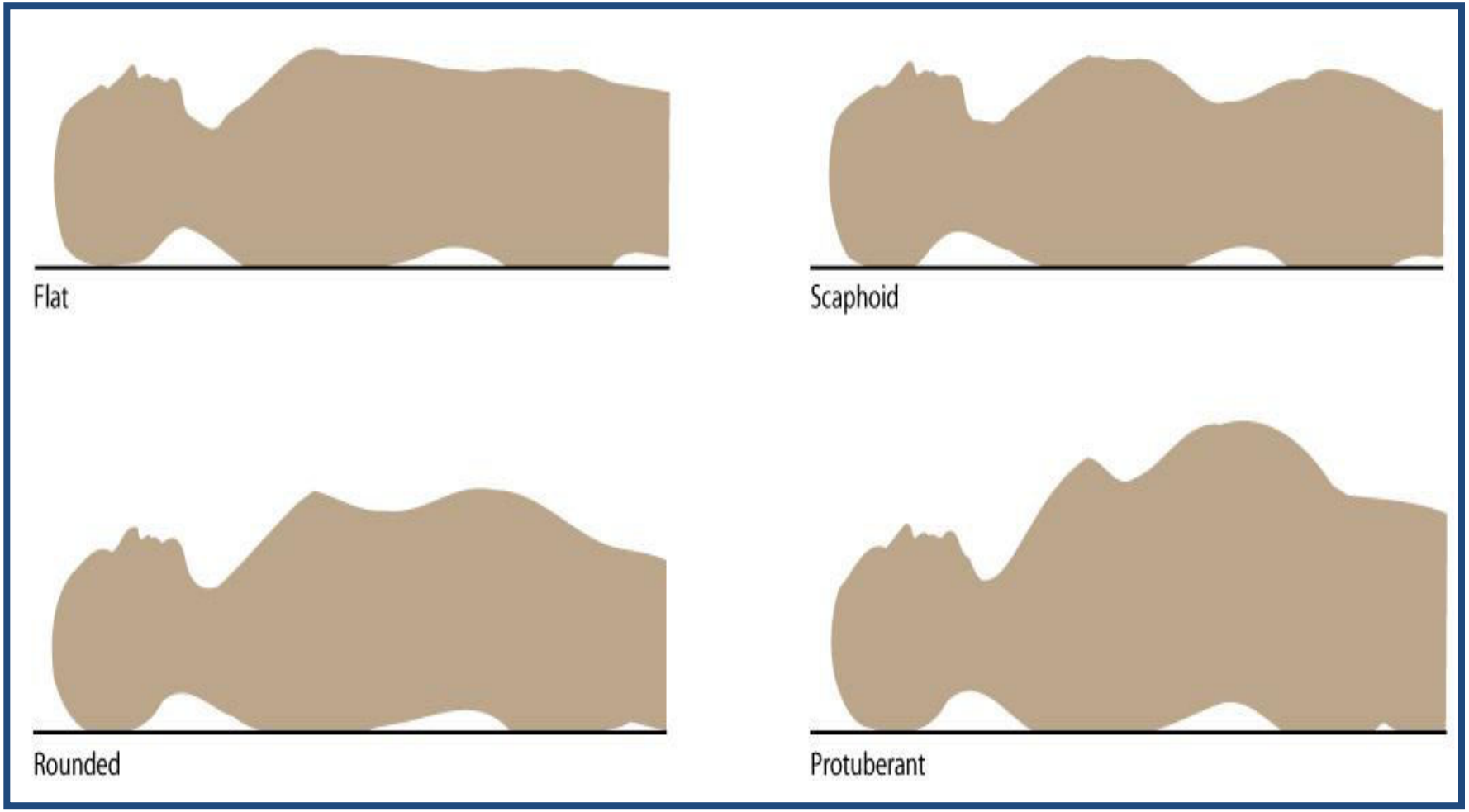
- INSPECTION
- AUSCULTATION
- PERCUSSION
- PALPATION

Objective Data—The Physical Exam (cont.)

Inspect the abdomen:

- Contour
- Symmetry
- Umbilicus
- Skin (Pigmentation, Lesions, Striae (elevated/depressed), Turgor
- Pulsation or movement
- Hair distribution
- Demeanor

Contour



INSPECT ABDOMINAL CONTOUR

Objective Data—The Physical Exam

(cont.)

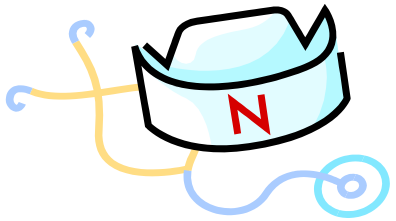
Auscultate the abdomen:

- Bowel sounds
- 5-35/min
- Increased, decreased, absent bowel sounds.
- Borborygymus
- Silent abdomen
- Vascular sounds (bruits)

Percuss the abdomen:

- General tympany
- Liver span
  - Usual technique
  - Scratch test
- Splenic dullness
- Costovertebral angle tenderness
- Special procedures
  - Fluid wave
  - Shifting dullness

AUSCULTATION



- Active bowel sounds 5-35/min
- Hypoactive 4/min or less (K^+, Paralytic Ileus, Chronic use of Laxative)
- Hyperactive 35 or more /min (Dysentery, Diarrhea, Early sign of Intestinal Obstruction).
- Bruits (blowing sound)
  - Aorta
  - Renal
  - Iliac
- Friction rub (Obstruction two layers of organs rubbing each other).

GUT SOUNDS

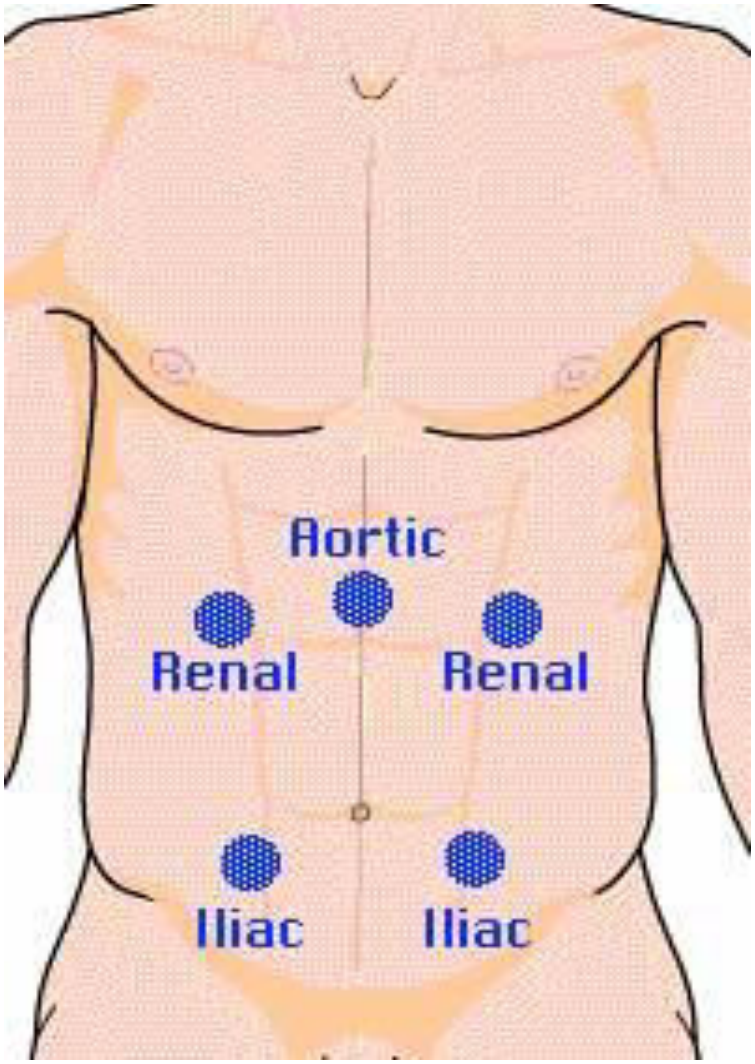
- Use the **diaphragm** of your stethoscope to listen to gut sounds
- **Normal** gut sounds are gurgling, 5 to 35 per minute
- **Borborygmi** (Rumbling sounds caused by gas moving through the intestines (stomach "growling“) are loud, easily audible sounds. They are normal, too.
- **High pitched** , Tinkling (raindrops in a barrel) sounds are a sign of early intestinal obstruction
- **Succussion splash, A** loud sound like splashing water, is often heard without a stethoscope as the patient moves from side to side. It occurs when the abdomen is filled with air or fluid and indicates delayed gastric emptying from an obstruction or gastric dilatation.

GUT SOUNDS

- **Decreased sounds:** (none for a minute) are a sign of decreased gut activity. Gut sounds may be markedly decreased after abdominal surgery; abdominal infection (peritonitis) or injury.
- **Absent Sounds** : (no sounds for 5 minutes) are a bad sign. They can be caused by longer-lasting intestinal obstruction, intestinal perforation or intestinal (mesenteric) ischemia or infarction.

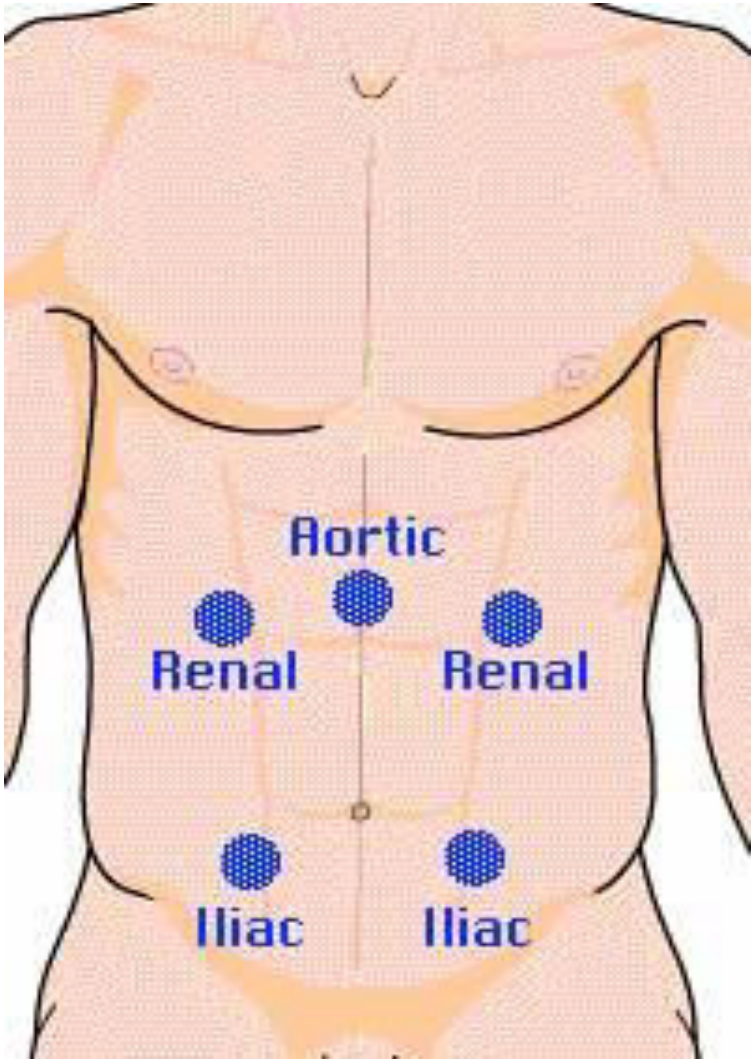
BRUITS SOUNDS

- (A sound, especially an abnormal one. A bruit may be heard over an artery or vascular channel, reflecting turbulence of flow) OR VENOUS HUMS.
- Use the bell of your stethoscope to listen for bruits:
- **Aortic bruits:**
- Are heard in the epigastrium. They may be a sign of abdominal aortic (a sac formed by localized dilatation of the wall of an artery, a vein)

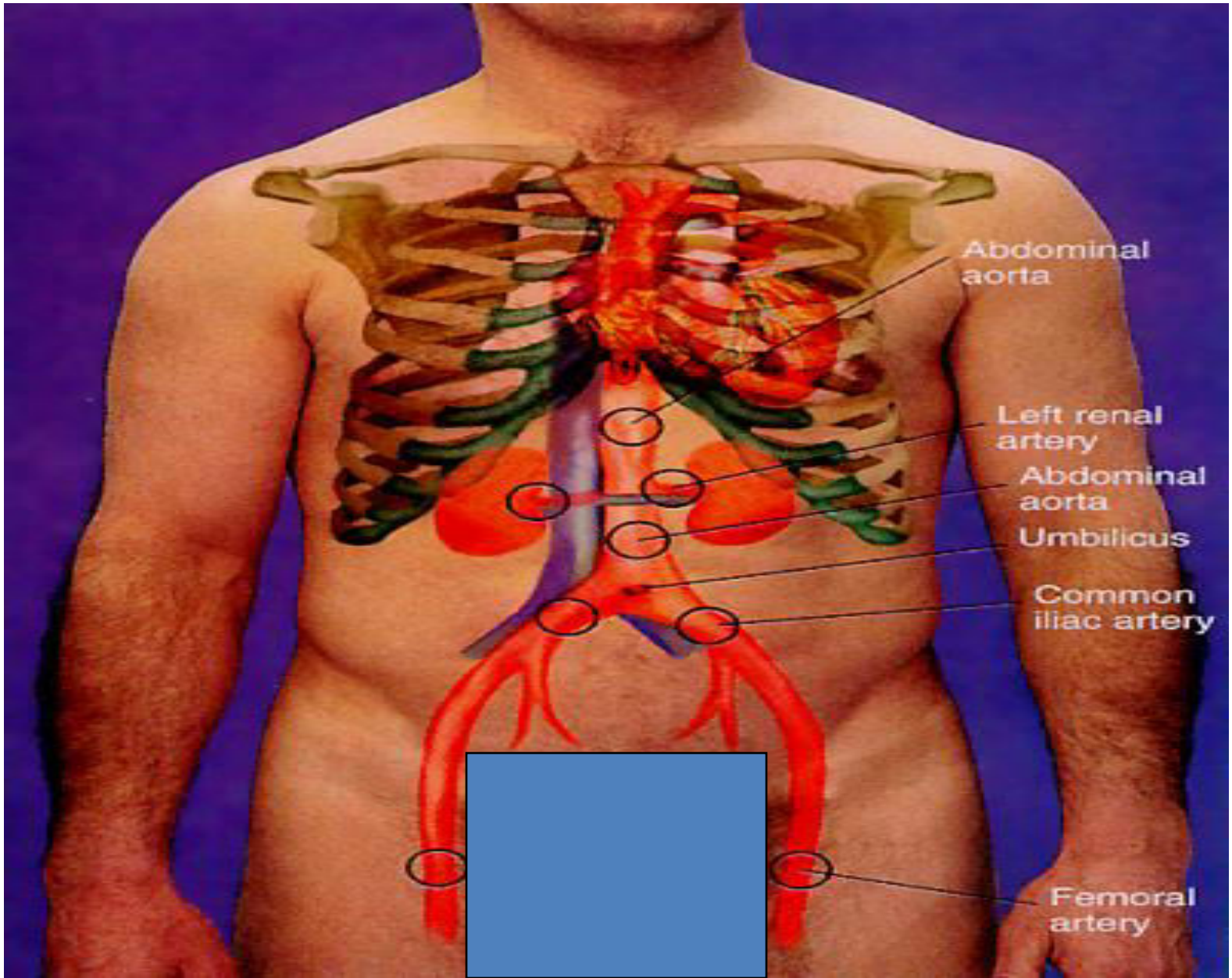


BRUITS SOUNDS

- **Renal artery bruits:**
- Are in each upper quadrant. They may be a sign of renal artery stenosis (A narrowing), which is a potentially treatable cause of hypertension.
- **Iliac/femoral bruits:**
- Are in the lower quadrants. They may be a sign of peripheral atherosclerosis



AUSCULTATION FOR BRUITS



PERCUSSION

- To determine the size of solid organs and presence of masses, fluid and gas
- Tympanic sound
- Percuss in all four quadrants
- Percuss for liver
- Percuss for spleen
- Percuss bladder if indicated

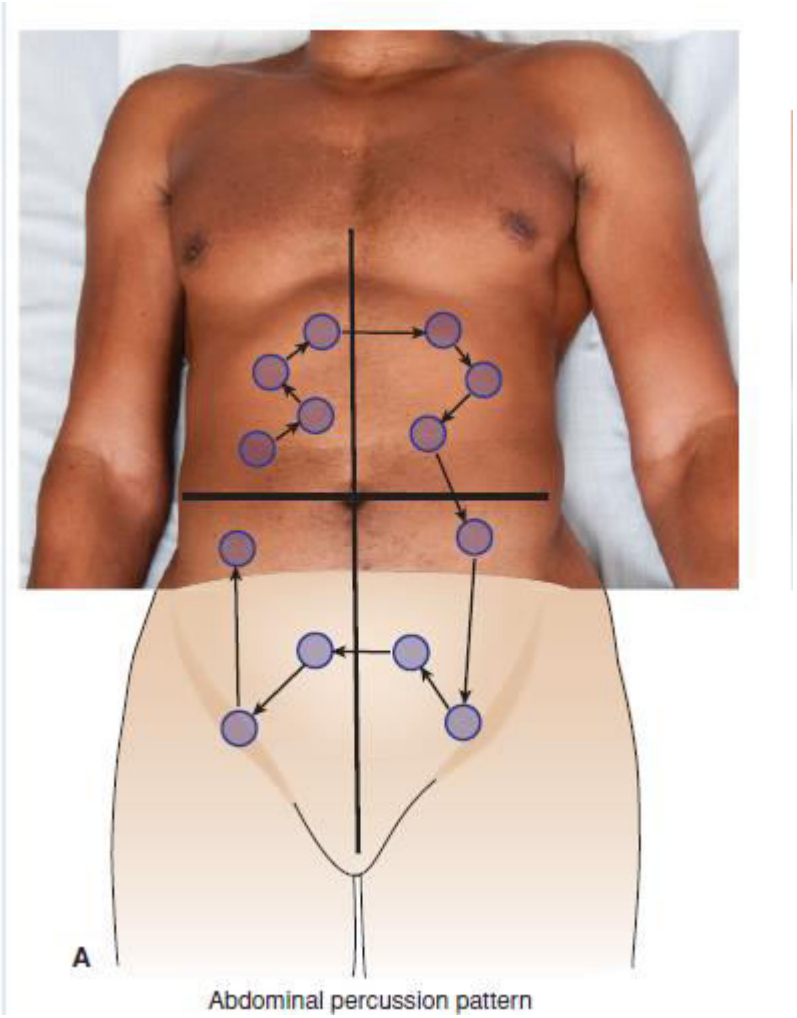
THE TECHNIQUE FOR PERCUSSION

There are two basic sounds which can be elicited:

1. Tympanitic (drum-like) sounds produced by percussing over air filled structures.
2. Dull sounds that occur when a solid structure (e.g. liver) or fluid (E.g. Ascites) lies beneath the region being examined.

- Special note should be made if percussion produces pain, which may occur if there is underlying inflammation, as in peritonitis. This would certainly be supported by other historical and exam findings.

Abdominal Percussion Pattern



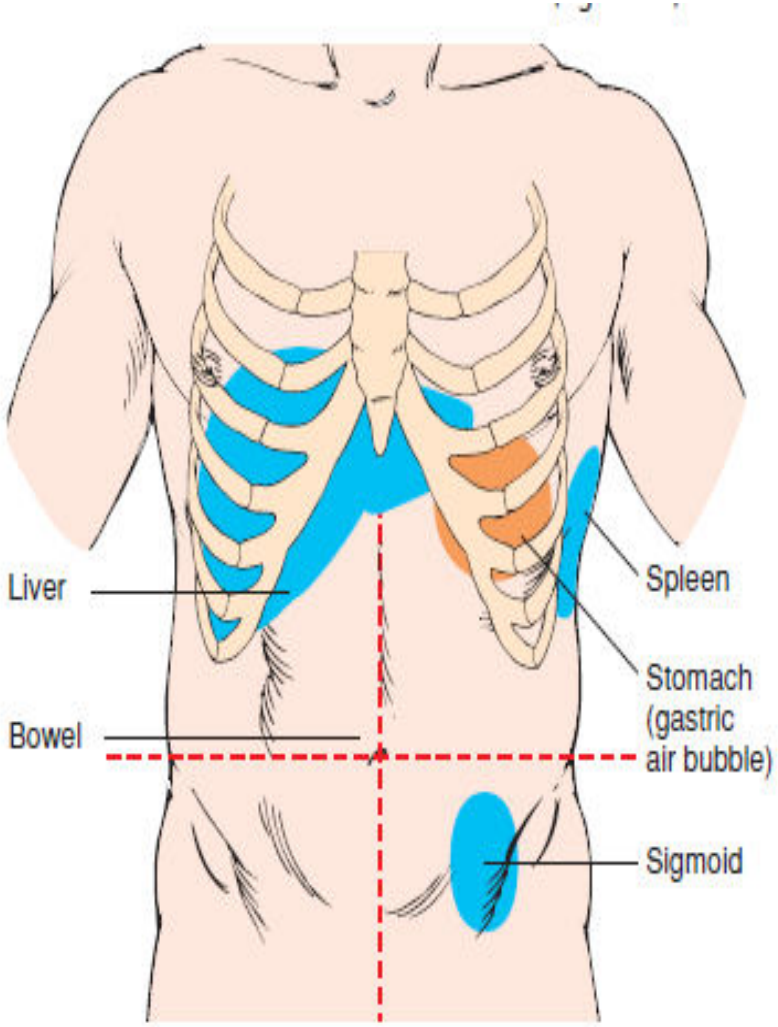
Abdominal percussion pattern

PERCUSSION

Percussing the body gives one of three notes:

1. **Tympany** is found in most of the abdomen, caused by air in the gut. It has a higher pitch than the lung.
2. **Resonance** is found in normal lung. It is lower pitched and hollow.
3. **Dullness** is a flat sound, without echoes. The liver and spleen, and fluid in the peritoneum (ascites), give a dull note.

Cont....

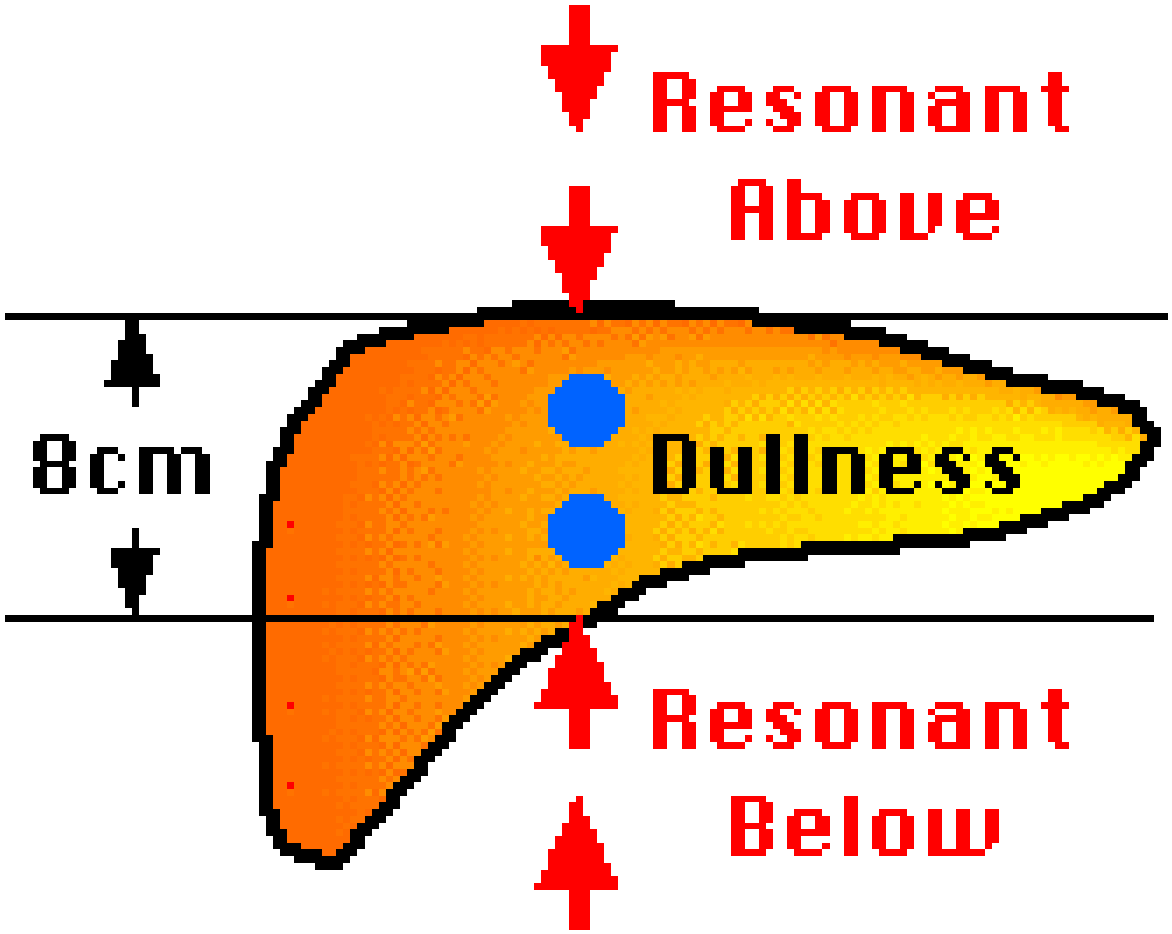


Abnormal dullness is heard over a distended bladder, large masses, or ascites.

If you suspect ascites, perform the shifting dullness and fluid wave tests. These special techniques are described later.

FIGURE 23-13 Normal percussion findings. *Blue* indicates dullness. *Orange* indicates tympany.

PERCUSS THE **LIVER**



PERCUSSION OF THE SPLEEN

- When significantly enlarged, percussion in the left upper quadrant will produce a dull tone.
- Splenomegaly suggested by percussion should then be verified by palpation
- Percuss in left anterior axillary line, just above lowest rib
- Ask your patient to take a deep breath and percuss again. Dullness with full inspiration may be a sign of enlarged spleen.

PERCUSSION OF SPLEEN

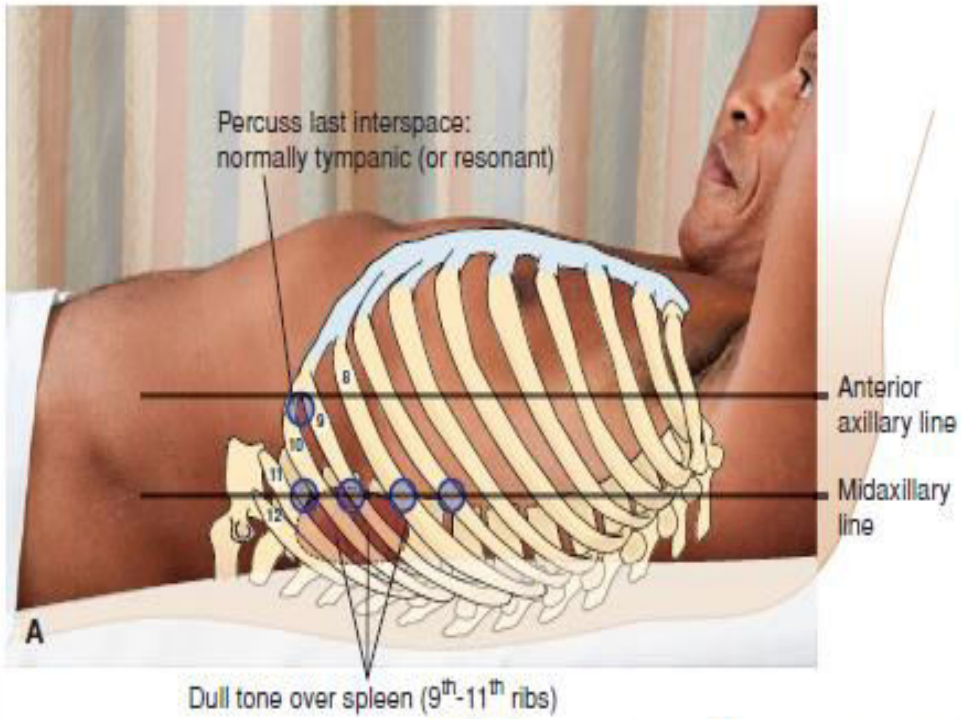


FIGURE 23-16 Last left interspace at the anterior axillary line.

PERCUSSION OF SPLEEN

PERCUSSION

- If dullness in flank (on side) - check for shifting dullness
- If indicated check for fluid wave

SHIFTING DULLNESS

- With the patient supine, begin percussion at the level of the umbilicus and proceed down laterally. In the presence of ascites, you will reach a point where the sound changes from tympanitic to dull. This is the intestine-fluid interface and should be roughly equidistant(Central) from the umbilicus on the right and left sides as the fluid.
- Mark this point on both the right and left sides of the abdomen and then have the patient roll into a lateral decubitus position (i.e. onto either their right or left sides).

SHIFTING DULLNESS (REAL PATIENT)

Objective Data—The Physical Exam (cont.)

Palpate the liver:

- Measures to enhance muscle relaxation
- Light palpation
- Deep palpation
- Bimanual palpation
- Normally palpable structures
- Liver
  - Usual technique
  - Hooking technique

- Spleen
- Kidneys
- Aorta

PALPATION

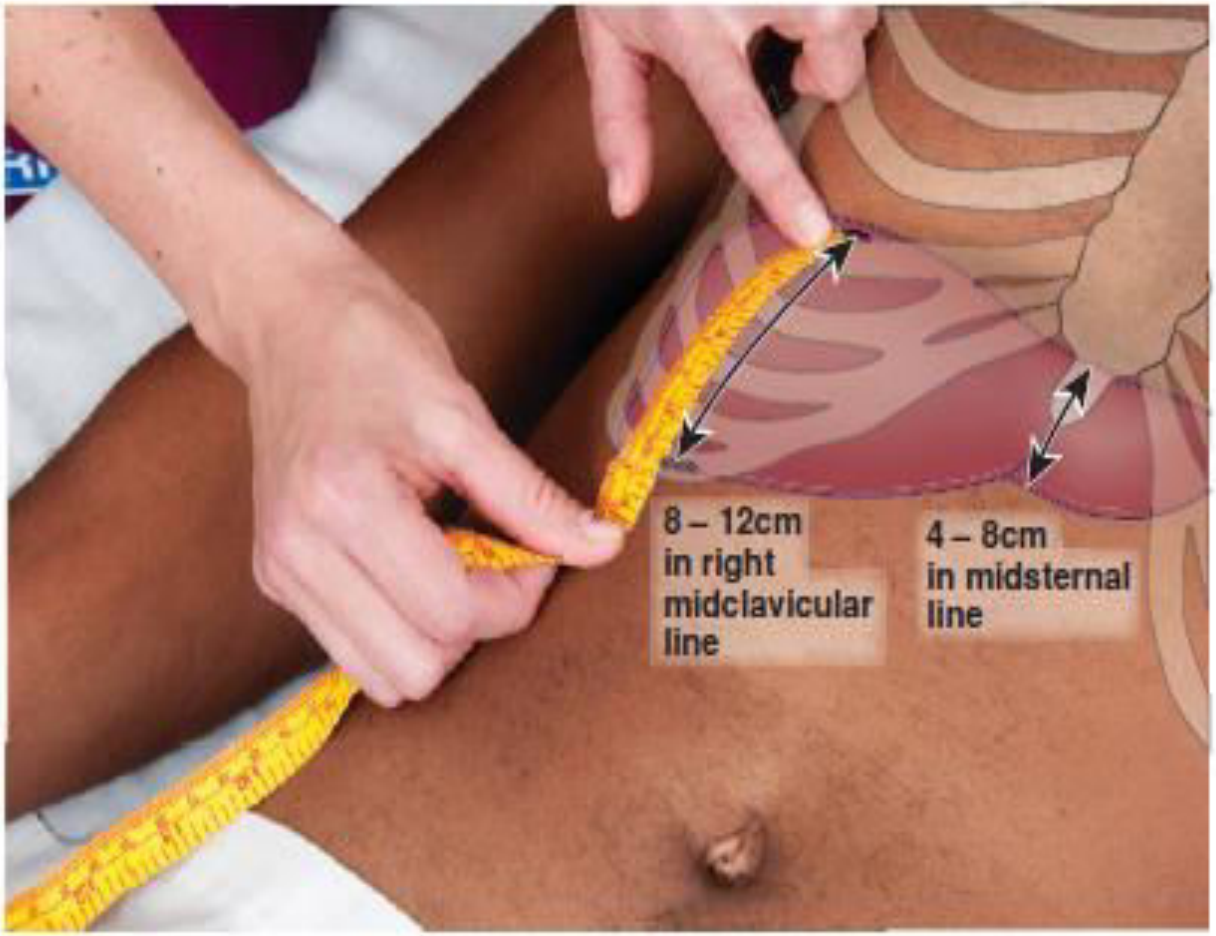
- Light palpation to evaluate general condition,
- Four quadrants, 1-3cm. Special organs.
- Nature of any distention, and abnormalities and painfulness.
- E.g. Inguinal nodes, Hernia.
- Deep palpation 4-5cm, both hand technique or one hand, to detect any organ enlargement, abdominal masses or swellings
- Palpate for liver and spleen
- Rebound tenderness (Inflammation of appendix/ Peritoneal inflammation

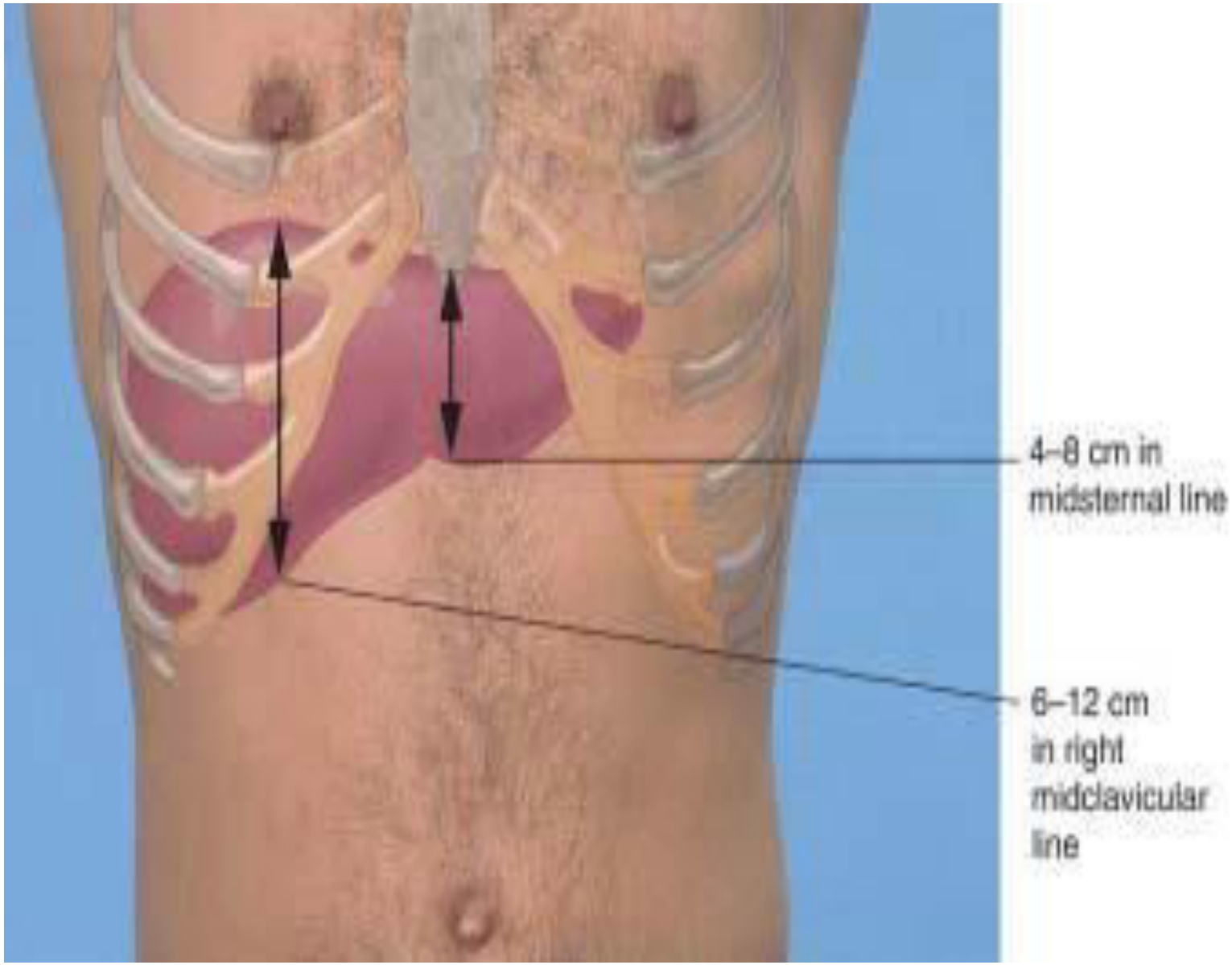
PALPATION OF LIVER

Bimanual technique for liver palpation

Hooking technique for liver palpation

Normal Liver Span

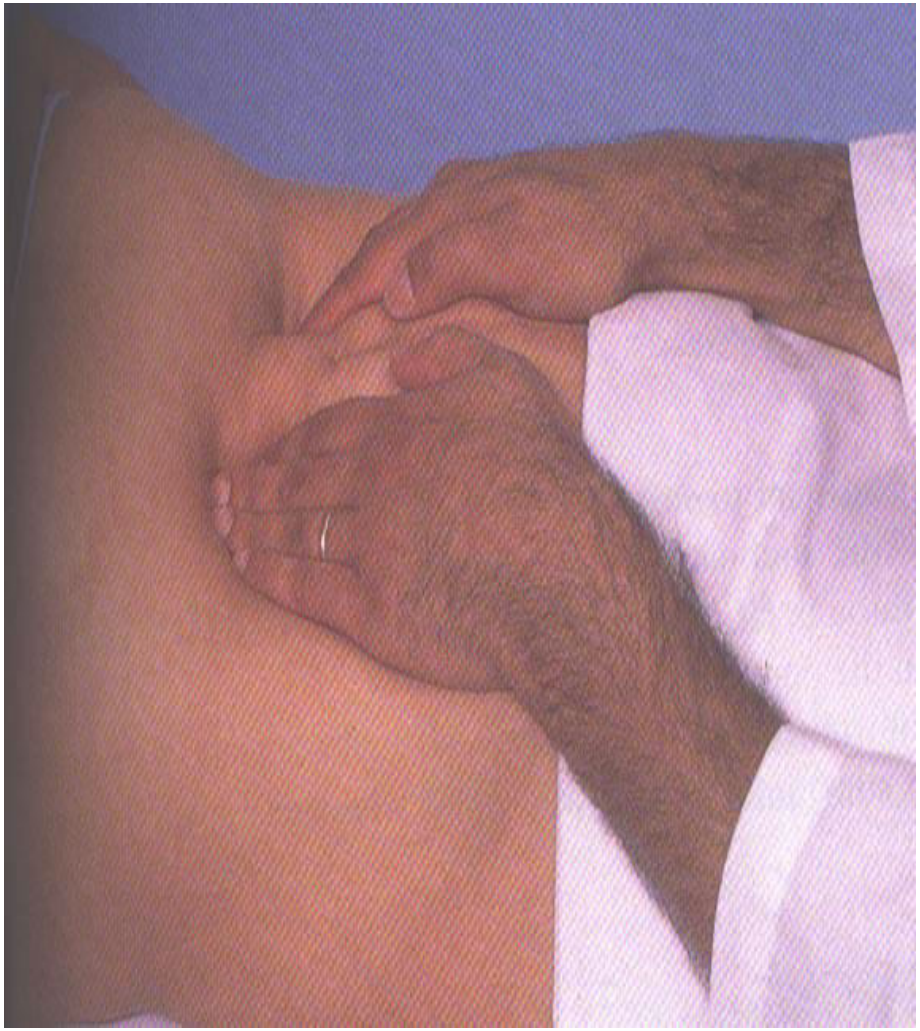



4–8 cm in midsternal line
6–12 cm in right midclavicular line

PALPATION OF SPLEEN

REBOUND TENDERNESS/ Blumberg's sign

ABDOMINAL AORTIC ANEURYSM THE EXAM

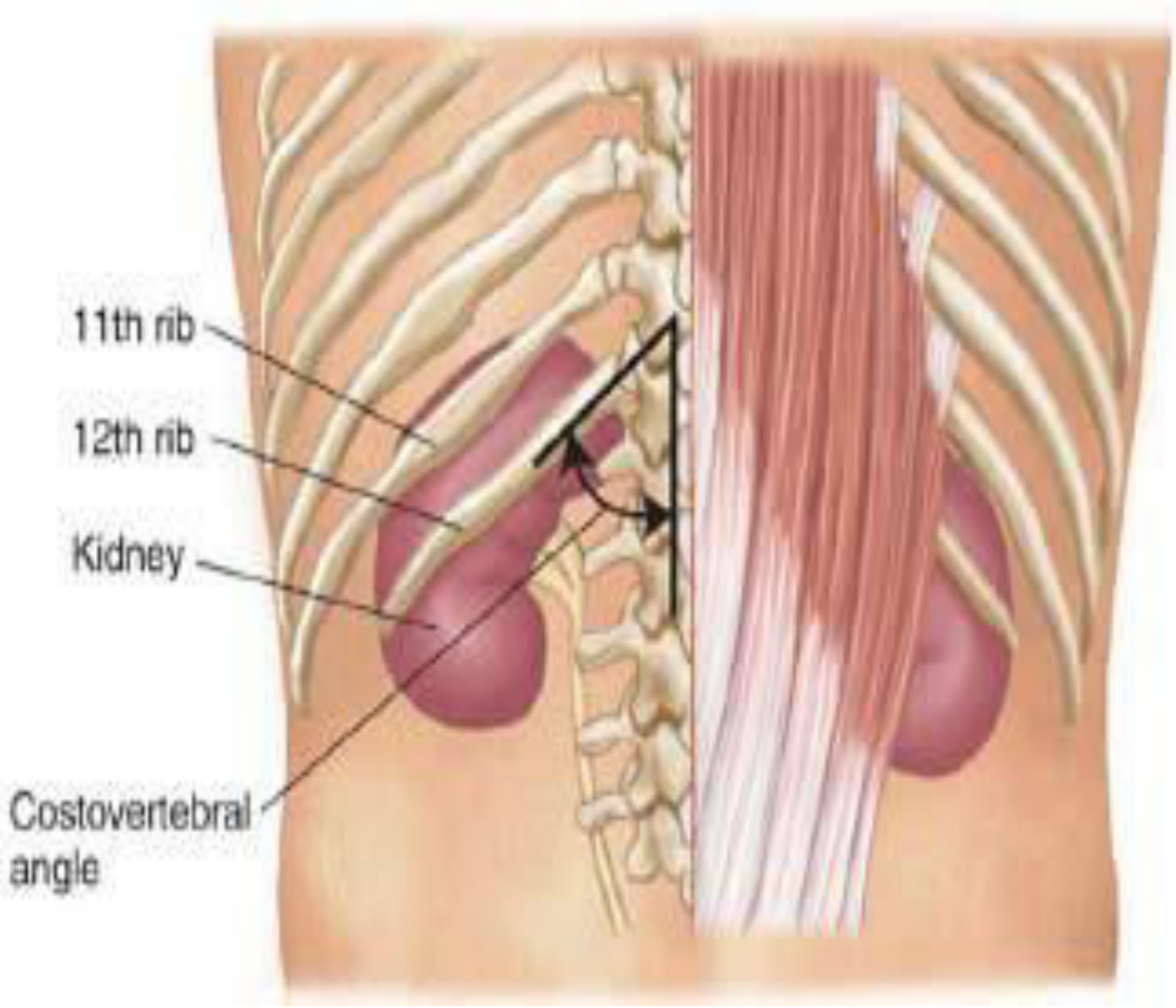


METHOD:

- THE PATIENT'S ABDOMEN SHOULD BE RELAXED WITH THE KNEES FLEXED.
- THE EXAMINER UMBILICUS FOR THE AORTIC PULSATION.
- PLACE BOTH HANDS ON THE ABDOMEN WITH THE INDEX FINGER ON EITHER SIDE OF THE PULSATING AORTA. ESTIMATE THE WIDTH (NL <2.5CM IN WIDTH).

ON BACK

- CHECK FOR RENAL BRUITS
- COSTOVERTEBRAL ANGLE TENDERNESS


11th rib
12th rib
Kidney
Costovertebral angle

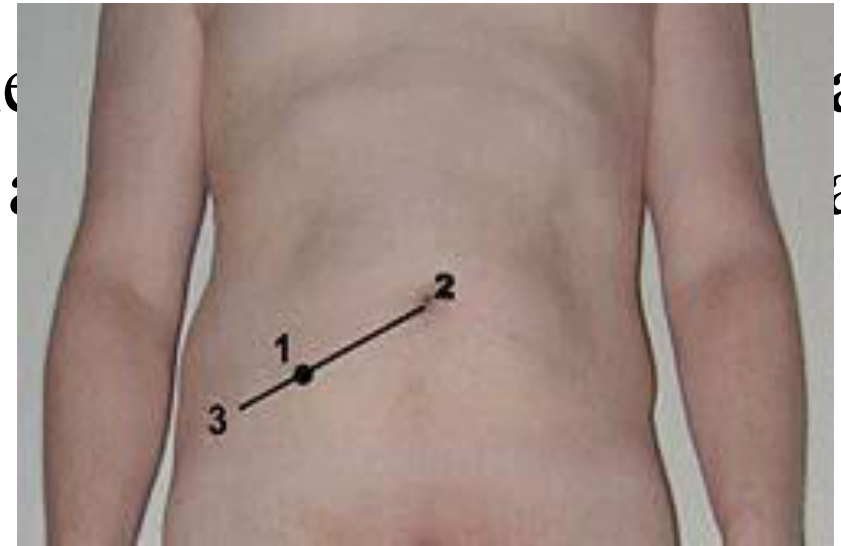
BLUNT PERCUSION OF KIDNEY

POSTERIOR VIEW: LOCATION OF THE KIDNEYS

Important Sign's

- **ROVSING'S SIGN** – Also know as indirect tenderness. the sign is positive when pressure applied to the left lower quadrant results in right lower quadrant pain.
- **RECTAL TENDERNESS** – Patients with appendicitis involving/ the pelvis may have rectal tenderness on examination.

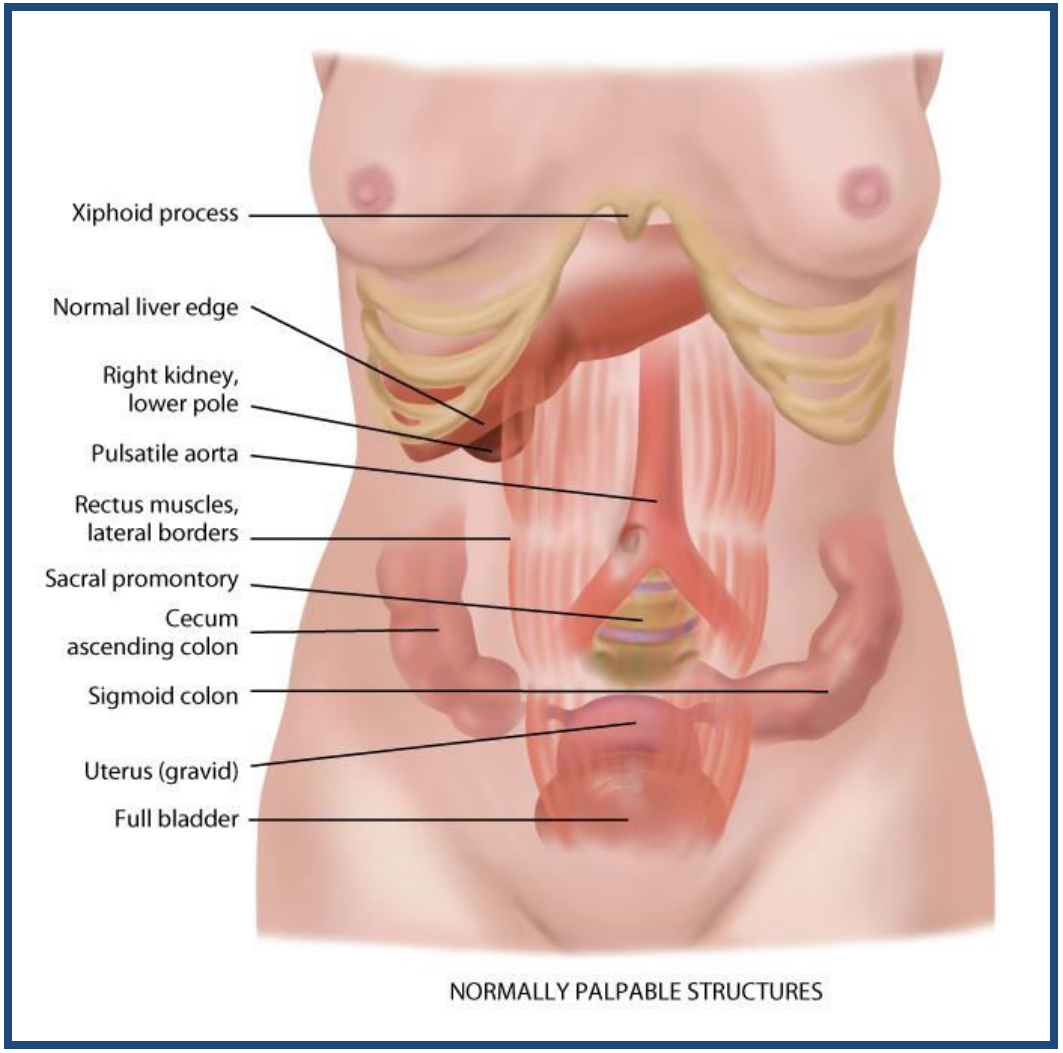
- **MC BURNEY'S POINT TENDERNESS**
  – A point $1^{1/3}$ -2 inches on the abdomen that is on the line connecting the umbilicus with the ASIS (or anterior superior iliac spine). This is associated with the bottom margin of the appendix. The point is one third of the distance when measured from ASIS to umbilicus.
- In 1889 charle all patients with a al pain at this point.



Special Procedures for Advanced Practice

- Rebound tenderness (Blumberg's sign)
- Inspiratory arrest (Murphy's sign)
- Iliopsoas muscle test
- Obturator test

Normally Palpable Structures



Sample Charting

- *SUBJECTIVE*

- States appetite is good with no recent change, no dysphagia, no food intolerance, no pain, no nausea/vomiting. Has one formed BM/day. Takes vitamins, no other prescribed or over-the-counter medication. No history of abdominal disease, injury, or surgery. Diet recall of last 24 hours listed at end of history.

Sample Charting
(cont.)

- OBJECTIVE

- Inspection—Abdomen flat, symmetric with no apparent masses. Skin smooth with no striae, scars, or lesions.

- Auscultation —Bowel sounds present, no bruits.

- Percussion —Tympany predominates in all four quadrants, liver span is 8 cm in right midclavicular line. Splenic dullness located at 10th intercostal space in left midaxillary line.

- Palpation —Abdomen soft, no organomegaly, no masses, no tenderness

ASSESSEMENT

- Healthy abdomen, bowel sounds present

Abnormal Findings
Abdominal Distention

- Obesity
- Air or gas
- Ascites
- Ovarian cyst
- Pregnancy
- Feces
- Tumor

Abnormal Findings

Abnormalities on Inspection

- Umbilical hernia
- Epigastric hernia
- Incisional hernia

Abnormal Findings
Abnormal Bowel Sounds

- Succussion splash
- Hypoactive bowel sounds
- Hyperactive bowel sounds

Abnormal Findings

Abnormalities on Palpation of Enlarged Organs

- Enlarged liver (Hepatomegaly)
- Enlarged nodular liver
- Enlarged gallbladder (Cholecystitis, Cholithiasis)
- Enlarged spleen (Splenomegaly)
- Enlarged kidney (Pylonephritis, Polycystic Kidney)
- Aortic aneurysm

EXAMINATION OF THE ANUS AND RECTUM

- This information is sometimes included with the abdominal assessment and at times with assessment of the male and female genitalia.

GENERAL PRINCIPLES

- Anal canal is the final segment of digestive system.
- It measures from 2.5 cm to 4 cm long.
- It is lined with skin that contains no hair or sebaceous glands but does contain many somatic sensory nerves, making it very sensitive to touch.
- Within the anus are the two sphincters that normally hold the anal canal closed except when passing gas and feces.

Examination of anus & Rectum.

- History:
- Bowel habits(Changes).
- Character of stools(Blood).
- Rectal Pain
- C/O, Constipation, Diarrhoea
- Hemorrhoids
- Screening, (PR Proctoscopy)
- Use of Laxatives or medications
- Prostate problems

RECTAL EXAMINATION

Assist patient into position:

- Male – left lateral, or standing upper body resting on a table.
- Female – Lithotomy

- Then …

I. Inspection

II. Palpation: Males

Females

RECTAL EXAMINATION

- Rectal Examination in Men. Inspect the perianal areas. Palpate the anal canal, rectum, and prostate. If the patient cannot stand, examine the genitalia before doing the rectal examination.
- Genital and Rectal Examination in Women. Examine the external genitalia, vagina, and cervix. Obtain a Pap smear (a sample of secretions and superficial cells of the uterine cervix and uterus; examined with a microscope to detect any abnormal cells). Palpate the uterus and adnexa (ovaries). Do a rectovaginal and rectal examination.

Examination of anus & Rectum.

- Inspection:
- Position- Side lying is preferred or lithotomy if genitalia exam in female or standing with upper body resting on a table for men.
- Inspect perianal tissue/ Sacrococygeal area by retracting buttocks.
- Look for skin characteristics, Lumps, lesions, hemorrhoids, ulcers, Rashes, Redness, inflammation, pigmentation.
- Ask client to bear down prolapse of rectum or hemorrhoids.

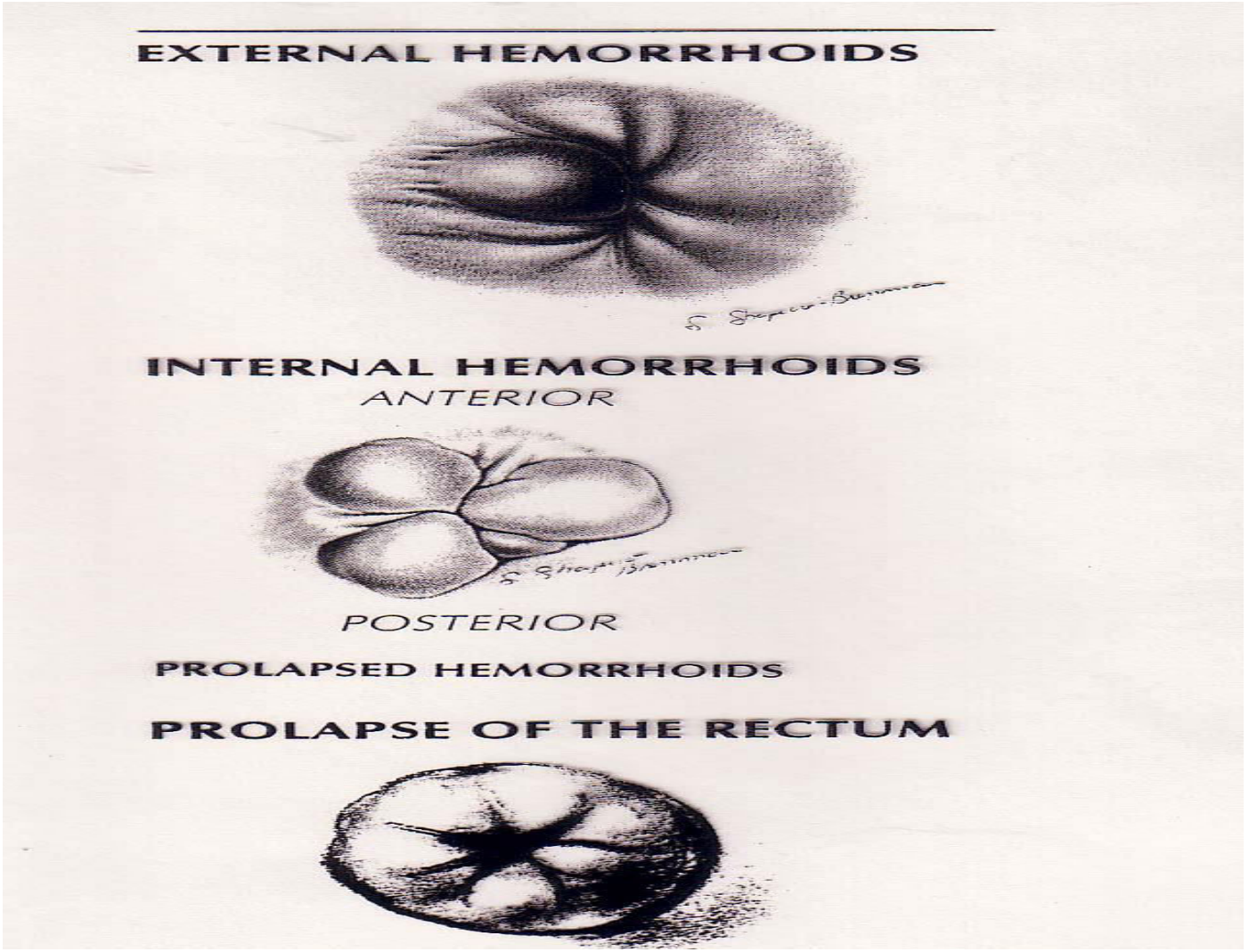
Examination of anus & Rectum.

- Palpation:
- Surrounding tissue for lumps and tenderness.
- Per rectal examination, anal sphincter, tone, grasp, laxity.
- Rectal wall, irregularity, tenderness nodular, lesions.
- Prostate gland, round, heart shaped, 2.5-4cm, firm & non tender, palpable on anterior rectal wall.
- Observe fecal matter on gloved finger for color (blood) & consistency.

HEMORRHOIDS

- With increased venous (portal) pressure, vein can enlarge.
- This is a hemorrhoid or a varicosity
- External hemorrhoids occur below the anorectal junction
- Itch and bleed with defecation
- Painful and swollen with thrombosis
- Resolve and leave flabby(Loose) skin top around
- Anal opening.

HEMORRHOIDS



continued

- Internal hemorrhoids originate above anorectal junction
- Covered with mucosa
- May appear as red mass with pressure (valsalva in heart abnormalities)

THE NORMAL PROSTATE

THE NORMAL PROSTATE GLAND

As palpated through the anterior rectal wall, the normal prostate is a rounded, heart-shaped structure about 2.5 cm in length. The median sulcus can be felt between the two lateral lobes. Only the posterior surface of the prostate is palpable. Anterior lesions, including those that may obstruct the urethra, may not be detectable by physical examination.

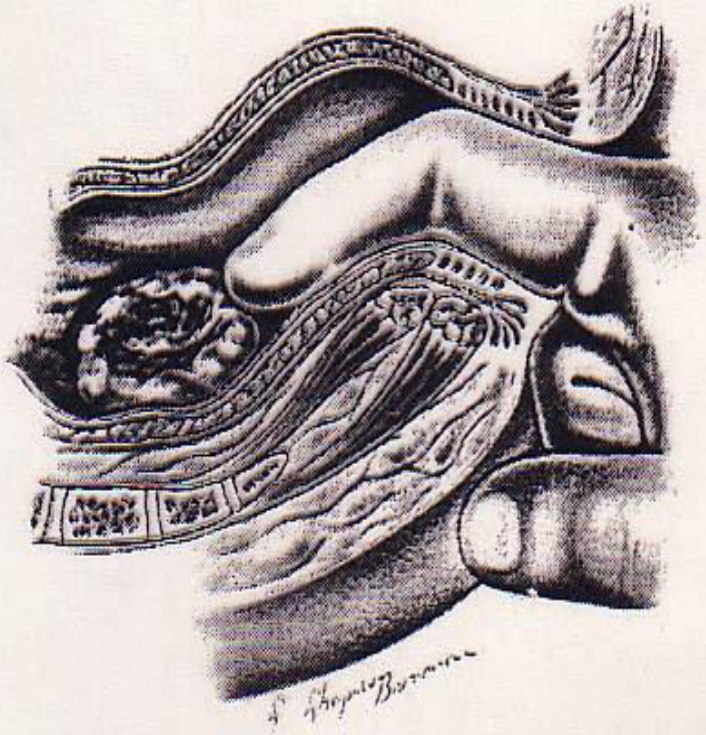
PROSTATITIS

Acute prostatitis (illustrated here) is an acute, febrile condition caused by bacterial infection. The gland is very tender, swollen, firm, and warm. Examine it gently.

Chronic prostatitis does not produce consistent physical findings and must be evaluated by other methods.

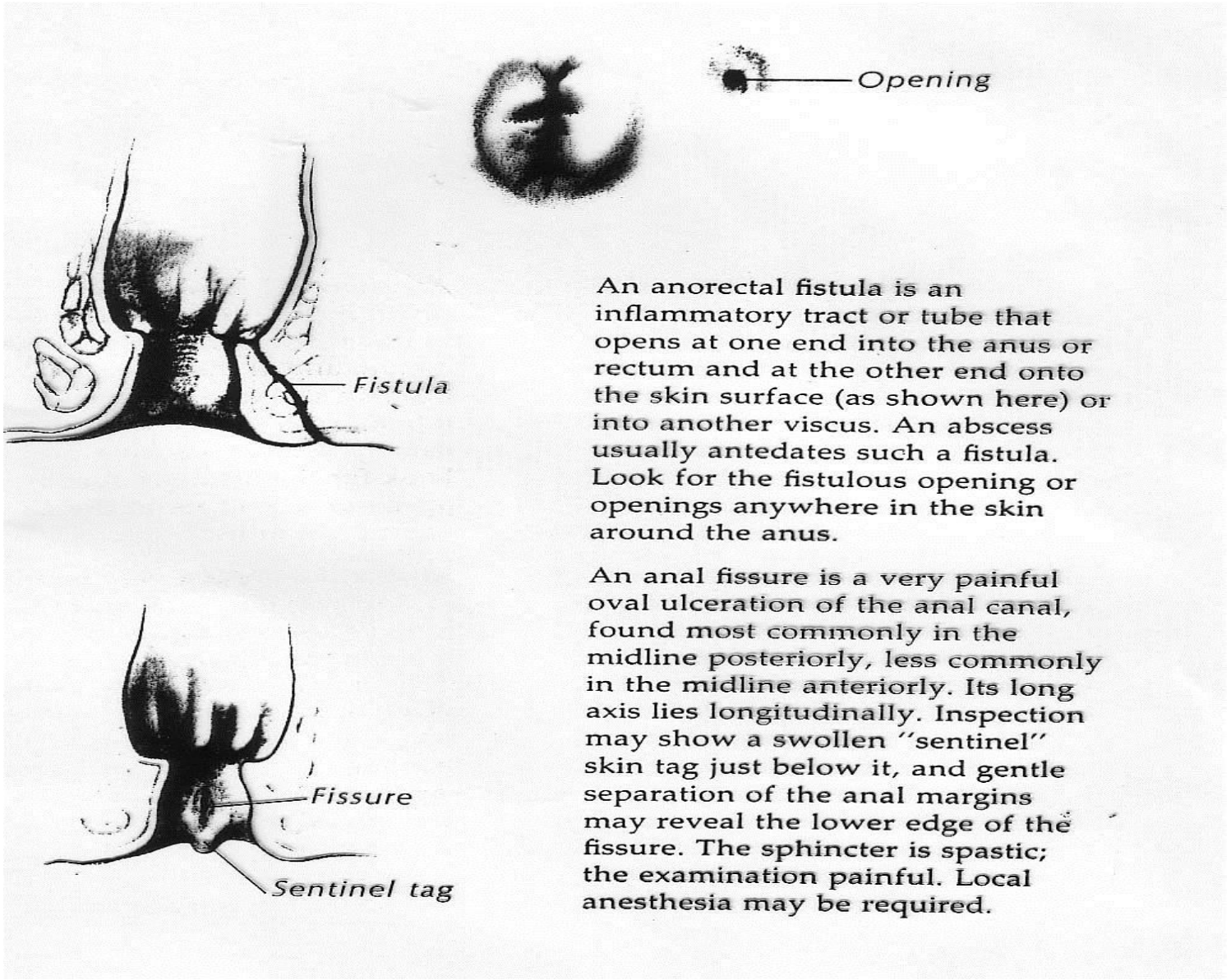
CANCER OF THE RECTUM

CANCER OF THE RECTUM



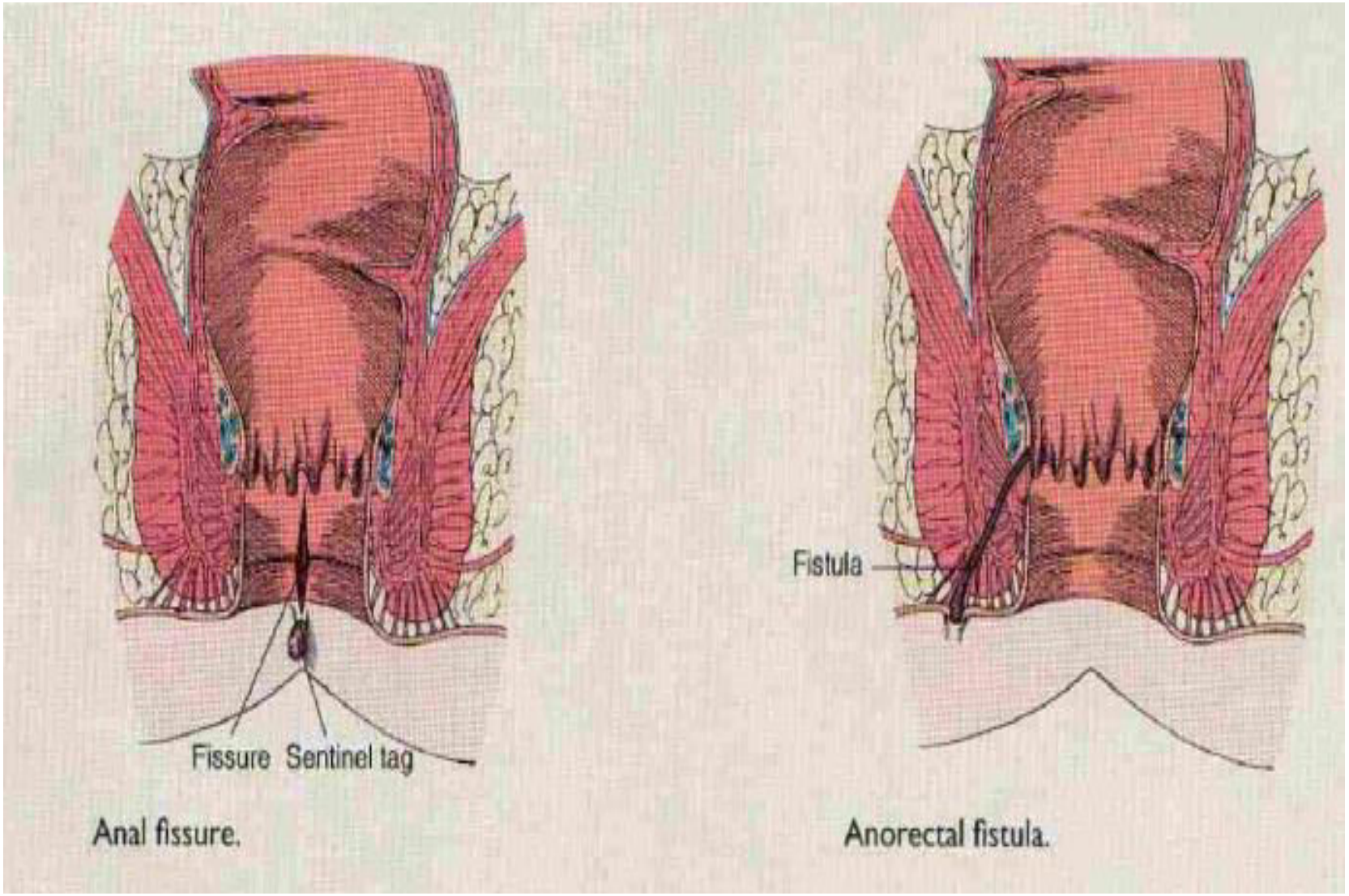
Asymptomatic carcinoma of the rectum makes routine rectal examination important for adults. Illustrated here is the firm, nodular, rolled edge of an ulcerated cancer. Polyps, as noted above, may also be malignant.

FISTULA VERSUS FISSURE



An anorectal fistula is an inflammatory tract or tube that opens at one end into the anus or rectum and at the other end onto the skin surface (as shown here) or into another viscus. An abscess usually antedates such a fistula. Look for the fistulous opening or openings anywhere in the skin around the anus.

An anal fissure is a very painful oval ulceration of the anal canal, found most commonly in the midline posteriorly, less commonly in the midline anteriorly. Its long axis lies longitudinally. Inspection may show a swollen "sentinel" skin tag just below it, and gentle separation of the anal margins may reveal the lower edge of the fissure. The sphincter is spastic; the examination painful. Local anesthesia may be required.



Anal fissure.

Anorectal fistula.

DRAPING THE ABDOMEN

VARIOUS CAUSES OF ABDOMINAL DISTENSION

- **Obese abdomen**

VARIOUS CAUSES OF ABDOMINAL DISTENSION

Hepatomegaly

VARIOUS CAUSES OF ABDOMINAL DISTENSION

Ascites

VARIOUS CAUSES OF ABDOMINAL DISTENSION

Markedly enlarged gall bladder (labelled "GB")

VARIOUS CAUSES OF ABDOMINAL DISTENSION

Umbilical Hernia

VARIOUS CAUSES OF ABDOMINAL DISTENSION

Umbilical hernia

CAPUT MEDUSAE

(Dilated cutaneous veins around the umbilicus, seen mainly in the newborn and in patients with cirrhosis.)

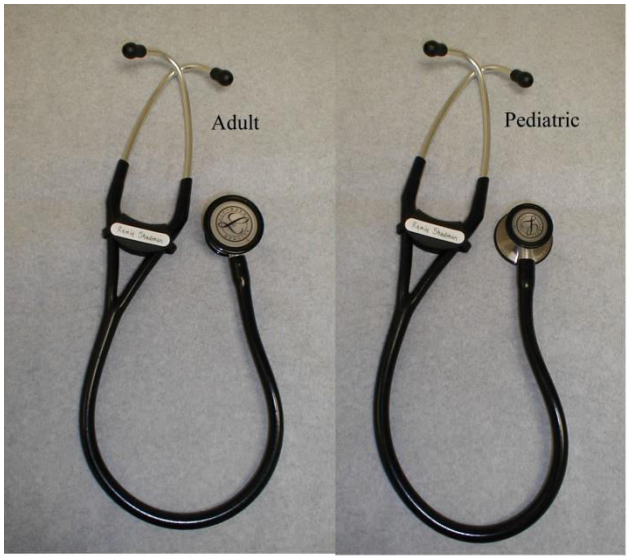
GYNECOMASTIA

"Abnormal Enlarged breast of male"

Adult Stethoscope

Adult Stethoscope: Diaphragm and Bell Incorporated Into Single Side.

Auscultation



Combination Adult & Pediatric Stethoscope

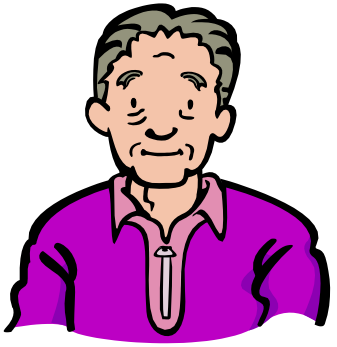
Newborn Stethoscope

EXAMINING FOR A FLUID WAVE:

Tenderness over the liver suggests inflammation, as in hepatitis, or congestion, as in heart failure.

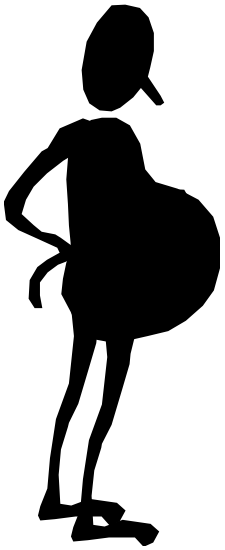
GI Variations Due to Age

- Aging- should not affect GI function unless associated with a disease process.
- Decreased: salivation, sense of taste, gastric acid secretion, esophageal emptying, liver size, bacterial flora.
- Increased: constipation!



GI Variations with pregnancy

- Decrease in gastric motility
- High incidence of N, V (r/t pregnancy hormones) and "heartburn" or acid reflux
- Bowel sounds diminished r/t enlarged uterus displacing intestines
- Linea nigra- increased pigmentation of abd midline
- Striae Gravidarum



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