

Examination Of The Abdomen

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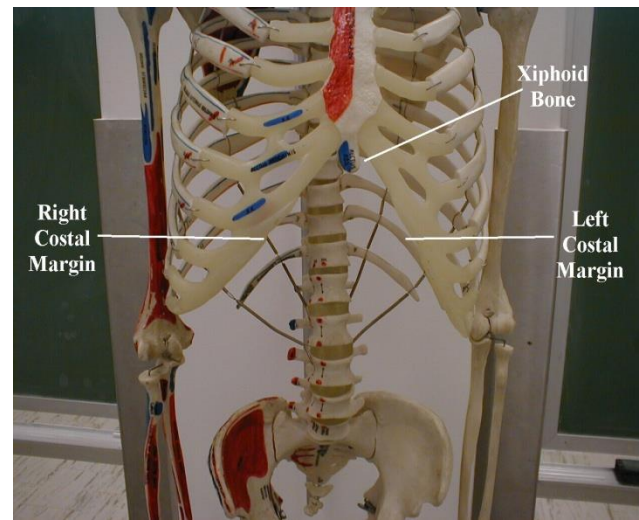
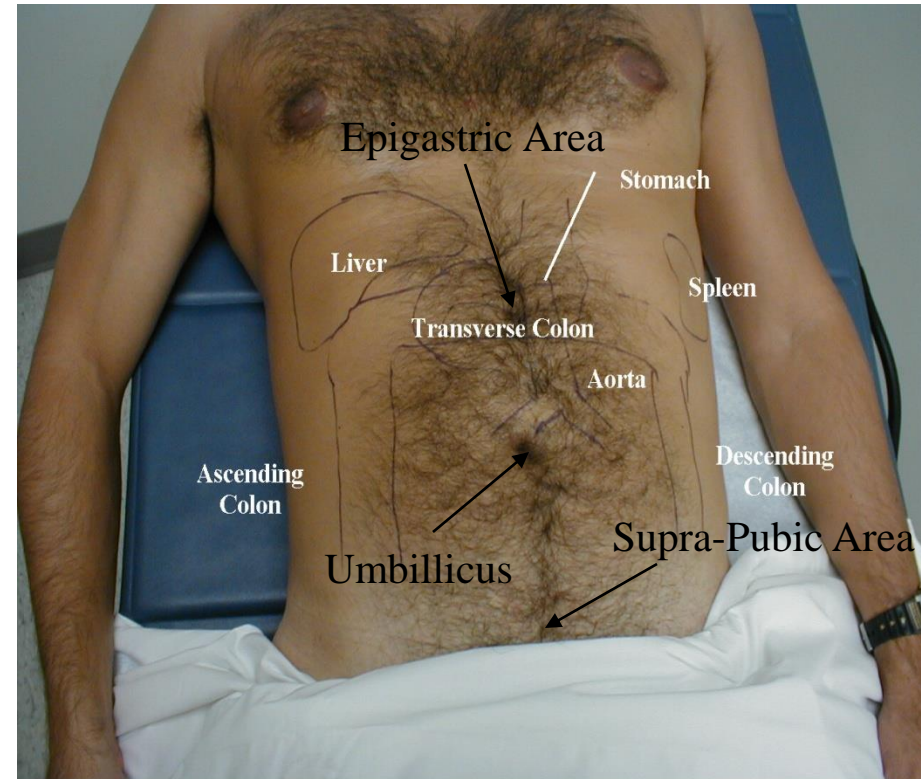
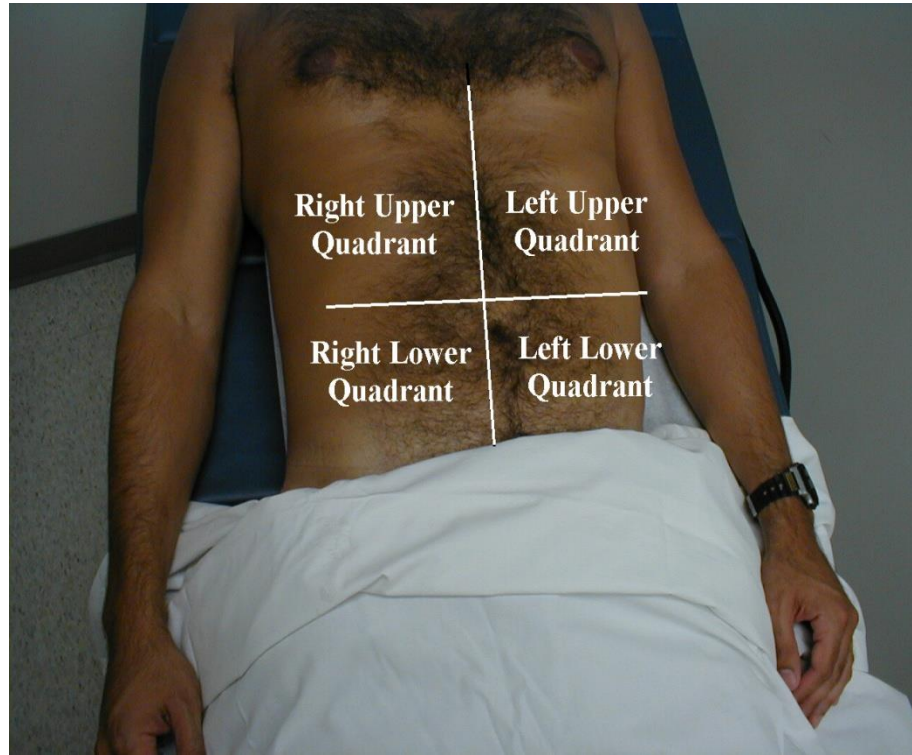
Abdominal Exam

- 4 Elements: **Observation, Auscultation, Percussion, Palpation**
- **Pelvic, male genital & male/female rectal** exams all **critical** parts of Abdomen exam → covered **later in the year**

GI Review of Systems

- <http://meded.ucsd.edu/clinicalmed/ros.htm>

Surface Anatomy



Observation & Draping

- Exposure → **Drape** for **success** – **expose what you need to see!**
- Use sheet to cover lower half of body
- Good **lighting**, **warm** room, table flat, **hands** at **side**, head resting on table
- +/- Feet flat on table



Observation (cont)

- Make note of :
 - general shape
 - contours
 - symmetry
 - color
 - scars
- ? easiest to make **observations** from **foot of bed**.
- Examine from **right side**



Examples of Abnormal Findings On Observation



Obese



Ascites (fluid), Yellow



Enlarged gall bladder



Umbilical Hernia (Right with Valsalva)

Auscultation

- Normal **intestinal propulsion** of food (peristalsis) generates **noise (Borborygmi)**
- **Listen (diaphragm of stethoscope) x 15-20 seconds in 4 quadrants**
- Pay attention to: **presence**, quantity (normal ~ 2-5 seconds), & **quality** of sounds



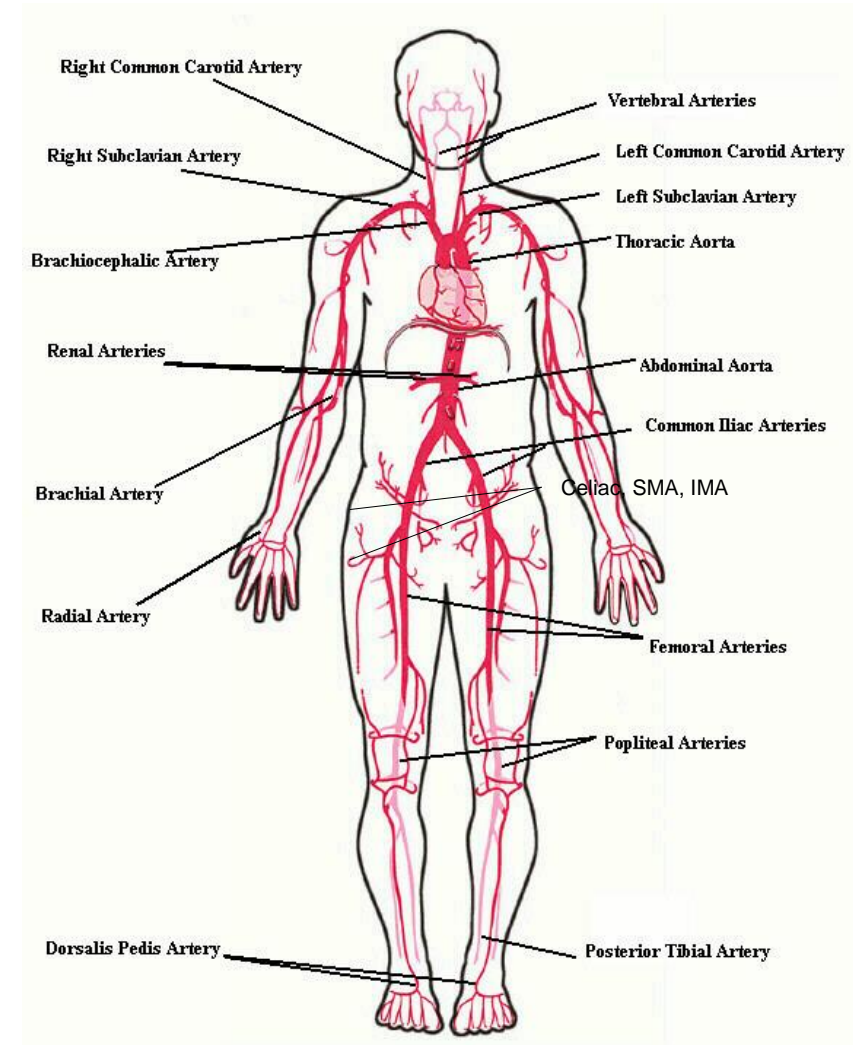
Auscultation (cont)

- Clinical **utility**:
 - **Intestinal Obstruction**: Increased **frequency** early (“rushes”) → **declines** in quantity, increase pitch (“tinkles”) → **stop**
 - **After handled (surgery)** → **no function** or **noise** (ileus) → w/normal **recovery**, **noise** returns
 - **Infection of mucosa** (gastroenteritis) → **increased** frequency
- **No findings pathognomonic**
- **Auscultation not helpful** in otherwise **normal** exam
- **Clinical context** most important



Auscultation (cont)

- **Bruits:** Sounds of **turbulent** arterial flow → **atherosclerosis**
- **Relevant if:** Unexplained hypertension, kidney disease, ischemic symptoms and risk factors
- Listen over:
 - **Renal arteries:** several cm above umbilicus, either side rectus)
 - **Central abdomen:** celiac, SMA, IMA
 - **Iliac arteries:** below umbilicus



Percussion

- Same principle as Lung
- **Tapping over solid or liquid** filled structure → **dull** tone; **air** filled → **tympanitic** (resonant)
- **Percussion → what's beneath**
skin & bones – e.g: liver → dull; air filled stomach → tympanitic
- Abdomen not designed w/1st yr students in mind!
 - Key **solid structures protected**:
liver & spleen by ribs; pancreas & kidneys deep in retro-peritoneum; bladder & uterus in pelvis
 - **Central abdomen** filled w/**intestines**: freely moving → promotes peristalsis, tolerates direct trauma

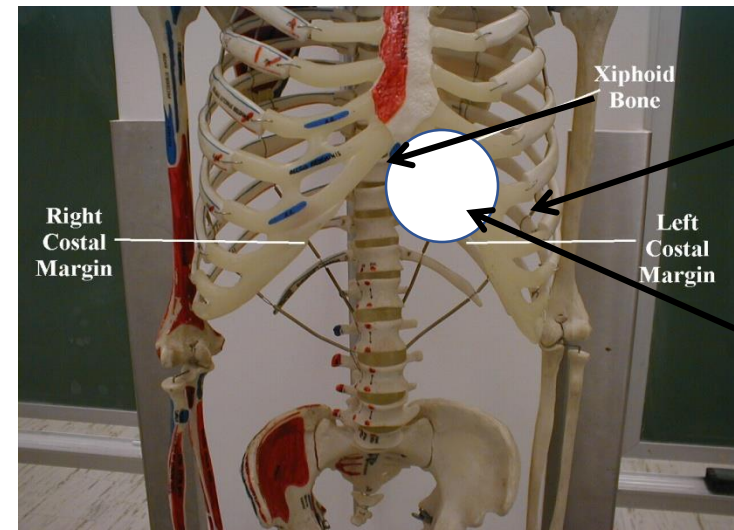
Percussion Technique

- Stand on **Right**
- **Middle finger** of non-percussing hand firmly **against abdomen**
- Using **floppy wrist** action, hammer **middle finger of other hand** down, aiming for last joint
- Percuss all **4 quadrants** – normal = 's mix of dull and tympanitic



Percussion Technique (cont)

- **Liver span (6-12 cm): Start in chest, below nipple (mid-clavicular line) & move down – tone changes from resonant (lung) to dull (liver) to resonant (intestines)**
- **Spleen** – small, located in hollow of ribs – percussion over **last intercostal space**, anterior axillary line should normally be **resonant** – dullness suggests splenomegaly
- **Stomach** – **tympanitic**

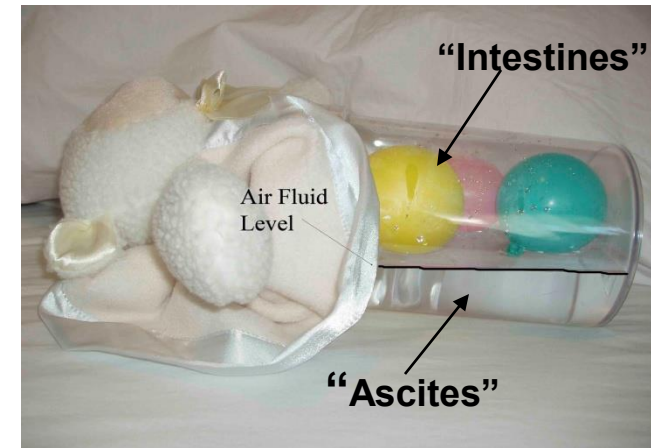
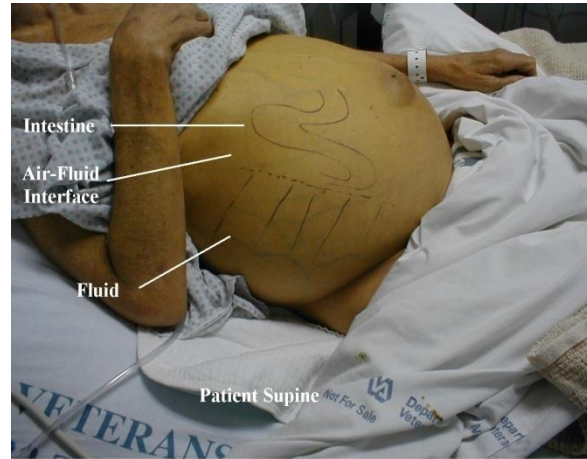


Resonance to percussion
If normal (i.e. spleen not enlarged)

Stomach

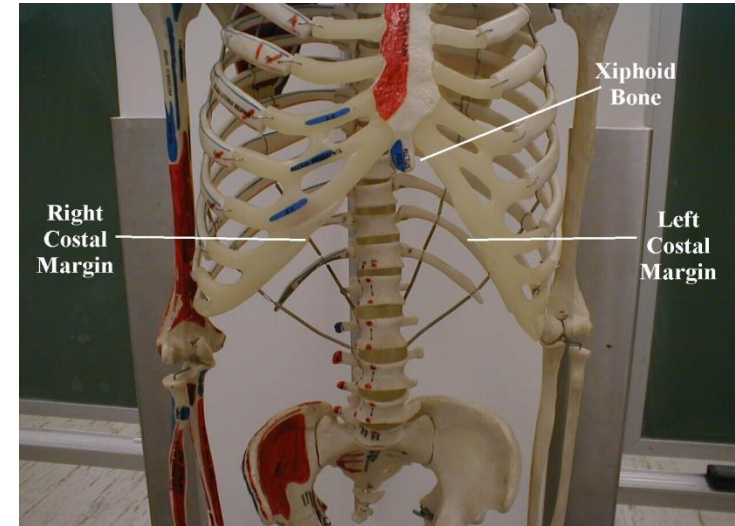
Percussion To Detect Ascites: Flank Dullness and Shifting Dullness

- Used to detect **large amounts of pathological fluid (ascites)**
- **Intestines** will float to surface
- Percussion can detect **air-fluid interface**
- **Flank Dullness alone:**
 - Sensitivity: 84%
 - Specificity: 59%
- **Shifting Dullness:**
 - Sensitivity: 77%
 - Specificity: 72%



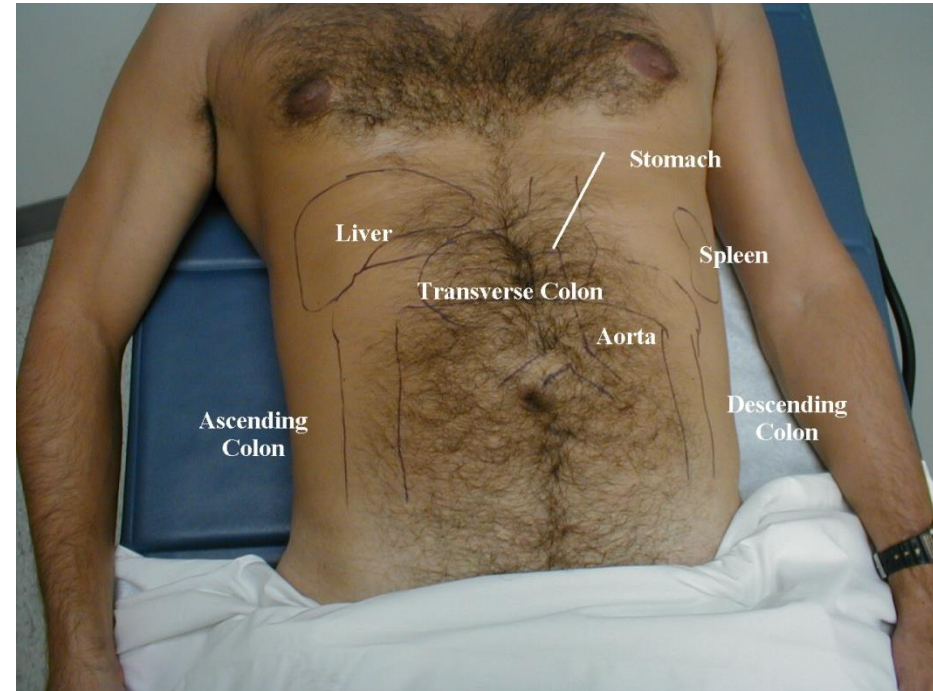
Palpation

- **Most important structures aren't palpable**
- **Warm your hands**
- Generally **right hand** used (left placed on top or @ your side)
- **Palpate using pads & edges** of middle 3 fingers
- **Gentle pressure**, no sudden movements
- Think about **what "lives"** in area you're examining



Palpation Technique

- First explore **superficial** aspect **each quadrant**
(start R lower → R upper → L upper → L lower)
- **Deeper** palpation
 - Liver
 - **Start R lower, moving up** towards R ribs
 - **Move** hands a **few cm** up w/each palpation
 - **Push down** (posterior) & then **towards head**
 - As approach ribs, **palpate while** patient **inspires** deeply (diaphragm brings liver down towards hand)
 - Might feel **liver edge** in normals (usually not)



Palpation Technique (cont)

- Deeper Palpation (cont)

Spleen

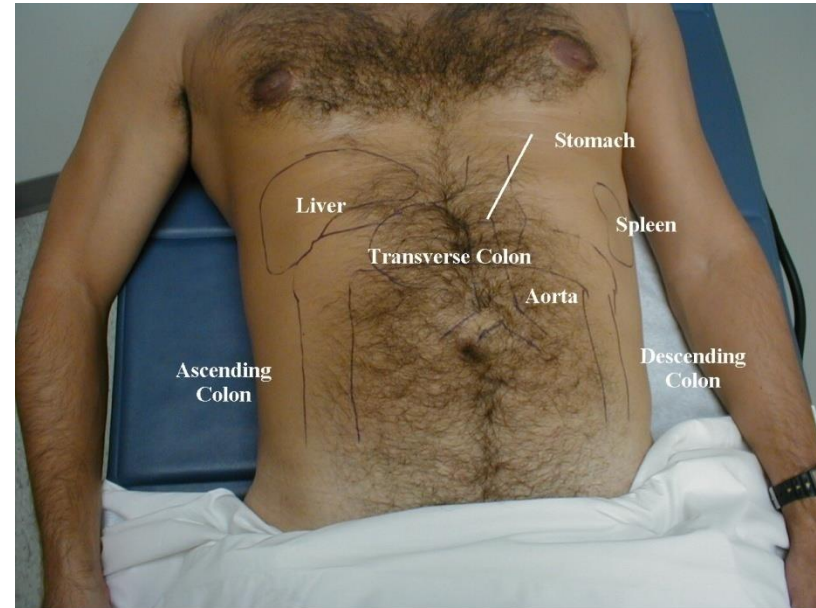
- Palpate towards **left upper quadrant** from midline & below - can use L hand to “pull” spleen towards you

Aorta (if RFs for aneurysm: Age > 60, smoking)

- Above umbilicus, left of **midline**
- Push down (deep) w/palpating hand

Remainder of abdomen

- **Uterus, bladder**, other (rarely palpable)
- Evaluate **painful areas last!**



Palpating to Detect fluid Wave (ascites)

- Examiner's right hand on patient's right
- Push quickly → initiate a "wave" w/in ascites
- Receiving hand on Left identifies the wave
- A third hand dampens passage of wave through sub-cu fat



Sensitivity: 62%

Specificity: 90%

Palpation/Percussion Of The Kidneys

- **Kidneys** are **retroperitoneal** structures, deep & protected by the ribs → **rarely palpable**
- If markedly enlarged, may appreciate in lateral aspects abdomen (rare)
- Assess for tenderness via posterior approach, **tapping** on **back** at **Costo-Vertebral Angle** – if kidney infected (pyelonephritis), patient will have **Tenderness (CVAT)**
- **Not done routinely:** only in right clinical context

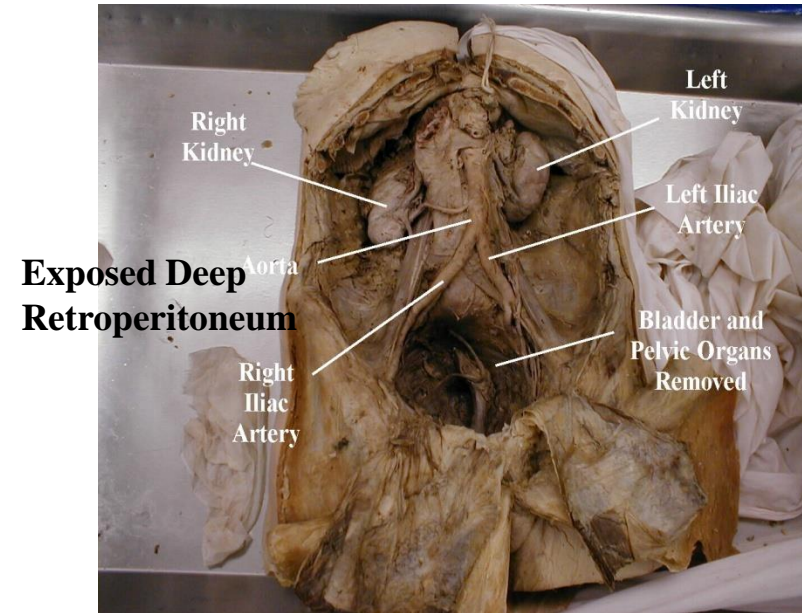


Image from U of Louisville, ICM Course

Put Findings Together → Paint The Best Picture

Abdominal exam techniques compliment each other!

- **Ascites**

- Observe distention, bulging flanks
- Palpation → no evidence of mass
- Palpation → + fluid wave

- **Enlarged liver**

(hepatomegaly)

- Percussion indicates extension of liver below diaphragm
- Palpation confirms location of lower edge (also detects contour, texture)

Summary Of Skills



- Wash Hands
- Observe abdomen (shape, contours, scars, color, etc)
- Auscultate abdomen (bowel sounds, bruits)
- Percuss abdomen (general; then liver & spleen)
- Palpate 4 quadrants abdomen (superficial then deep)
- Assess for kidney area pain (CVAT)
- Wash Hands



Time Target: < 10 Minutes