

Abdominal Examination Benchmarks

Preparation and Positioning:

- Stand on the right side of the patient.
- The patient should be supine and double draped so only the abdomen is exposed
- To relax the abdominal muscles
 - The head should be supported by a pillow
 - The knees should be slightly flexed . A pillow beneath the knees helps.
 - The hands are on the chest or by their side
- Your hands should be **warm**
- The painful or tender area of the abdomen should be examined **last**.

After completing the Foundations of Clinical Medicine, you should be able to perform a comprehensive abdominal exam:

Inspection	Observe the patient for increased discomfort with movement.
	Inspect the abdominal contour, observing for distention or masses.
	Inspect the skin as you examine the abdomen, noting scars and skin lesions
Auscultation	Listen in one place with the diaphragm of the stethoscope until you hear bowel sounds
	If you suspect renovascular hypertension, listen for bruits in the epigastrium and upper quadrants
	If you suspect peripheral vascular disease, listen for bruits over the femoral arteries
Percussion & Palpation	Percuss all four quadrants observing for tenderness and tympany
	Palpate all 4 quadrants for tenderness or masses
	Percuss the upper and lower liver margins in the R mid-clavicular line
	Palpate the lower liver edge
	Palpate for an enlarged spleen
	Palpate for inguinal masses and adenopathy
	If you suspect ascites, test for a fluid wave
	If you suspect ascites, test for shifting dullness
	In patients at risk for aortic aneurysm, palpate the abdominal aorta

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Tips on technique:

- Increased pain with sudden movement is a clue to peritonitis. Observe the patient with coughing, walking or sudden movement of the bed. Patients with peritonitis typically prefer to lay still.

Abnormal findings:

- A protuberant abdomen may be caused by obesity, tumors, pregnancy, or distention by gas or fluid
- Dilated abdominal wall veins are a clue to portal hypertension.

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Tips on technique:

- Auscultation of the abdomen is classically performed before palpation and percussion, as these maneuvers might alter bowel sounds.
- Bowel sounds are transmitted throughout the abdomen. Listening in one place is sufficient.
- The frequency and intensity of bowel sounds vary substantially in a normal person. In order to say that bowel sounds are absent, you must listen for at least 2 minutes.

Abnormal findings:

- Absent bowel sounds indicate:
 - Ileus, which may be caused by surgery, opiates, or medical illness
 - Complete bowel obstruction
 - Peritonitis
- Tinkling bowel sounds interspersed with silence are classically described in partial small bowel obstruction.
- Bruits
 - Abdominal bruits are heard in up to 20% of healthy people, and are more common in those under 40. These bruits are probably caused by blood flow through the normal celiac axis.
 - In patients with severe and difficult to control hypertension the finding of a continuous bruit strongly suggests renovascular hypertension. The finding of a systolic bruit supports the diagnosis less strongly, and the absence of a bruit does not rule out renovascular hypertension.

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Tips on technique:

- **Palpating the liver edge**
 - Place your right hand on the patient's right lower quadrant. As the patient inhales, the edge of the liver will descend – feel for it hitting your fingers.
 - Repeat, moving your right hand up an inch at a time, until you feel the liver edge or reach the costal margin.
 - If you identify the liver edge, observe its consistency, regularity, and tenderness as it slides under your fingers. With deep inspiration, some normal livers are palpable but many are not.
- **Palpating the spleen**
 - Palpate for the spleen from the left side or by reaching across the patient
 - Beginning in the left lower quadrant, feel for the spleen hitting your fingertips during inspiration. If you do not feel it, move your hand up an inch at a time, and repeat until you reach the costal margin. The normal spleen should not be palpable.
- **Measuring liver span**
 - The liver span is the vertical distance between the upper and lower edges of the liver. At the mid clavicular line, the liver span measured by percussion can range from of 6-15 cm, depending both on the patient's anatomy and the force of the examiner's percussion stroke.
 - An enlarged liver may extend as far down as the RLQ
- **Palpating the aorta to detect aortic aneurysm**
 - Press gently inward in the epigastric region slightly left of the midline to identify aortic pulsations
 - Now place one hand on each side of the aorta, and measure its diameter. Subtract the estimated thickness of soft tissue.
 - The normal aorta is < 3 cm. An aortic aneurysm is > 3 cm and expansile, pushing the hands apart.
- **Fluid wave**
 - An assistant or the patient holds the edge of one hand firmly in the midline. This decreases movement of soft tissue, which can give a false positive result.

- Percuss one side of the abdomen with the fingers of one hand while holding the other hand against the opposite side.
 - A positive result is a tap against the hand caused by a wave of ascitic fluid set in motion by percussion. This is a specific finding that supports the presence of ascites.
- **Shifting dullness**
 - Starting at the umbilicus, percuss from anterior to posterior, marking the border between resonance and dullness.
 - Have the patient roll halfway to one side or the other, and again mark the border between resonance and dullness.
 - A positive result is a shift in the border. This specific finding supports the presence of ascites.

Abnormal findings:

- **Percussion tenderness:** Gentle percussion causes pain, either at the site of tenderness or elsewhere in the abdomen. This finding suggests peritonitis.
- **Rigidity** is an INVOLUNTARY contraction of the abdominal musculature in response to peritoneal inflammation.
- **Guarding** is a VOLUNTARY contraction of the abdominal musculature due to tenderness, fear, cold hands, or anxiety.
- **McBurney's point tenderness:** Anatomically, McBurney's point is the location of the appendix in most adults: 1/3 of the distance from the right anterior superior iliac spine to the umbilicus. Tenderness at this point is a more specific finding of appendicitis than general RLQ tenderness.
- **Murphy's sign** is a finding of acute cholecystitis. The examiner palpates under the right costal margin in the midclavicular line and observes as the patient breathes in. Murphy's sign is present if the patient has a pause in inspiration and increased tenderness as the inflamed gallbladder hits the examiner's finger. It is a more specific finding of cholecystitis than RUQ tenderness.
- **Abnormal liver edge:** The liver edge normally lies under the rib cage at the R midclavicular line. A firm, cirrhotic liver is more likely to be palpable than a normal liver. If the liver edge is palpated, feel carefully for clues to cirrhosis. The cirrhotic liver is firmer than normal, and may have palpable irregularity or nodules.
- **Splenomegaly:** The normal spleen is not palpable. If it is palpable, it is enlarged. Common causes of splenomegaly are cirrhosis, hematologic malignancies, and infectious diseases.