Abdomen
Abdominal Parts

- RUQ
- LUQ
- RLQ
- LLQ
- Epigastric
- Umbilical
- Hypogastric or suprapubic
Several organs are often palpable. Exceptions are the stomach and much of the liver and spleen.

The abdominal cavity extends up under the rib cage to the dome of the diaphragm, placing these organs in a protected location, beyond the reach of the palpating hand.
In the RUQ, the soft consistency of the liver makes it difficult to feel through the abdominal wall.

The **lower margin of the liver**, the liver edge, is often palpable at the right costal margin.

The **gallbladder**, which rests against the inferior surface of the liver, and the more deeply lying **duodenum** are generally not palpable.

At a deeper level, the lower pole of the **right kidney** may be felt, especially in thin people with relaxed abdominal muscles.

The **abdominal aorta** often has visible pulsations and is usually palpable in the upper abdomen.
The spleen is lateral to and behind the stomach, just above the left kidney in the left midaxillary line.

Its upper margin rests against the dome of the diaphragm.

The 9th, 10th, and 11th ribs protect most of the spleen.

The tip of the spleen may be palpable below the left costal margin in a small percentage of adults.

The pancreas in healthy people escapes detection.
In the left lower quadrant you can often feel the firm, *narrow, tubular sigmoid colon*. Portions of the *transverse* and *descending colon* may also be palpable.
Bladder, the sacral promontory, the bony anterior edge of the S1 vertebra sometimes mistaken for a tumor, and in women, the uterus and ovaries
Bowel loops and the appendix at the tail of the cecum near the junction of the small and large intestines.

In healthy people, there will be no palpable findings.
A distended bladder may be palpable above the symphysis pubis.

The bladder accommodates roughly **300 ml** of urine filtered by the kidneys into the renal pelvis and the ureters.

Bladder expansion stimulates contraction of bladder smooth muscle, the detrusor muscle, at relatively low pressures.

Rising pressure in the bladder triggers the conscious urge to void.

Increased intraurethral pressure can overcome rising pressures in the bladder and prevent incontinence.
Kidneys

- The kidneys are posterior organs
- The ribs protect their upper portions
- The costovertebral angle—the angle formed by the lower border of the 12th rib and the transverse processes of the upper lumbar vertebrae—defines the region to assess for kidney tenderness
Health History
Common or Concerning Symptoms

Gastrointestinal Disorders

- Abdominal pain, acute and chronic
- Indigestion, nausea, vomiting including blood, loss of appetite, early satiety
- Dysphagia and/or odynophagia
- Change in bowel function
- Diarrhea, constipation
- Jaundice
Common or Concerning Symptoms

Urinary and Renal Disorders

- Suprapubic pain
- Dysuria, urgency, or frequency
- Hesitancy, decreased stream in males
- Polyuria or nocturia
- Urinary incontinence
- Hematuria
- Kidney or flank pain
- Ureteral colic
Upper Gastrointestinal SEs

- Abdominal pain
- Heartburn
- Nausea and vomiting
- Difficulty or pain with swallowing
- Vomiting of stomach contents or blood
- Loss of appetite
- Jaundice
Lower gastrointestinal complaints SJS

- Diarrhea
- Constipation
- Change in bowel habits
- Blood in the stool

✓ often described as either bright red or dark and tarry
Genitourinary tract Symptoms

- Difficulty urinating
- Urgency and frequency
- Hesitancy
- Decreased stream in men
- High urine volume
- Urinating at night
- Incontinence
- Blood in the urine
- Flank pain
- Colic from renal stones or infection
Patterns and Mechanisms of Abdominal Pain

Be familiar with three broad categories of abdominal pain:

- Visceral pain
- Parietal pain
- Referred pain
Visceral pain occurs when

- Hollow abdominal organs such as the **intestine** or **biliary** tree
  - Contract unusually forcefully
  - Distended
  - Stretched

- Solid organs such as the liver can also become painful when
  - Their capsules are stretched

- Visceral pain may be difficult to localize
- It is typically palpable near the midline at levels that vary according to the structure involved
Visceral pain in the RUQ may result from liver distention against its capsule in alcoholic hepatitis.

Visceral pain varies in quality and may be:
- Gnawing
- Burning
- Cramping
- Aching

When it becomes severe, it may be associated with:
- Sweating
- Pallor
- Nausea
- Vomiting
- Restlessness
Example of Abnormalities

**Visceral periumbilical pain** may signify early acute appendicitis from distention of an inflamed appendix.

It gradually changes to parietal pain in the RLQ from inflammation of the adjacent parietal peritoneum.
**TYPES OF VISCERAL PAIN**

- **Right upper quadrant or epigastric pain from the biliary tree and liver**
- **Epigastric pain from the stomach, duodenum, or pancreas**
- **Periumbilical pain from the small intestine, appendix, or proximal colon**
- **Suprapubic or sacral pain from the rectum**
- **Hypogastric pain from the colon, bladder, or uterus. Colonic pain may be more diffuse than illustrated.**
Parietal pain

- Parietal pain originates from inflammation in the parietal peritoneum
- It is a **steady, aching** pain that is usually
  - More severe than visceral pain
  - More precisely localized over the involved structure
- It is typically aggravated by movement or coughing
- Patients with this type of pain usually prefer to lie still
Referred pain

- Referred pain is felt in more distant sites, which are innervated at approximately the same spinal levels as the disordered structures.
- Referred pain often develops as the initial pain becomes more intense and thus seems to radiate or travel from the initial site.
- It may be felt superficially or deeply but is usually well localized.
Example of Abnormalities

Pain of duodenal or pancreatic origin may be
- Referred to the back

Pain from the biliary tree may be
- Referred to the right shoulder
- Right posterior chest

Pain may also be referred to the abdomen from the
- Chest
- Spine
- Pelvis

Thus complicating the assessment of abdominal pain

Pain from pleurisy or acute myocardial infarction may be
Referred to the epigastric area
Gastrointestinal Tract
Acute Upper Abdominal Pain or Discomfort

For patients complaining of abdominal pain, causes range from benign to life-threatening, so take the time to conduct a careful history.

First determine the timing of the pain

✓ Is it acute or chronic?
✓ Acute abdominal pain has many patterns
✓ Did the pain start suddenly or gradually?
✓ When did it begin?
✓ How long does it last?
✓ What is its pattern over a 24-hour period?
✓ Over weeks or months?
✓ Are you dealing with an acute illness or a chronic and recurring one?
Acute Upper Abdominal Pain or Discomfort

In emergency rooms 40% to 45% of patients have nonspecific pain. But 15% to 30% need surgery. Usually for:

- Appendicitis
- Intestinal obstruction
- Cholecystitis
Acute Upper Abdominal Pain or Discomfort

Ask patients to describe the pain in their own words

Pursue important details:

- “Where does the pain start?”
- “Does it radiate or travel anywhere?”
- “What is the pain like?”

If the patient has trouble describing the pain, try offering several choices:

- “Is it aching, burning, gnawing …?”

Doubling over with cramping colicky pain indicates renal stone

Sudden knifelike epigastric pain occurs in gallstone pancreatitis
Acute Upper Abdominal Pain or Discomfort

- Ask the patient to point to the pain
- Patients are not always clear when they try to describe in words where pain is most intense
- The quadrant where the pain is located can be helpful
- Often underlying organs are involved

Epigastric pain occurs with gastritis or GERD

RUQ and upper abdominal pain signify cholecystitis
Ask the patient to rank the severity of the pain on a scale of 1 to 10.
Note that severity does not always help you to identify the cause.

*Sensitivity to abdominal pain varies widely and tends to diminish in older patients, masking acute abdominal conditions.*

Pain threshold and how patients accommodate to pain during daily activities also affect ratings of severity.
As you probe factors that aggravate or relieve the pain, pay special attention to any association with

- Meals
- Alcohol
- Medications (including aspirin and aspirin-like drugs and any over-the-counter medications)
- Stress
- Body position
- Use of antacids

Ask if indigestion or discomfort is related to exertion and relieved by rest.

Note that angina from inferior wall coronary artery disease may present as “indigestion,” but is precipitated by exertion and relieved by rest.
Chronic Upper Abdominal Discomfort or Pain

Dyspepsia is defined as chronic or recurrent discomfort or pain centered in the upper abdomen.

Discomfort is defined as a subjective negative feeling that is nonpainful.

It can include various symptoms such as:

- Bloating
- Nausea
- Upper abdominal fullness
- Heartburn

Note that bloating, nausea, or belching can occur alone and is seen in other disorders.

When they occur alone they do not meet the criteria for dyspepsia.

Bloating may occur with IBS.

Belching from aerophagia, or swallowing air.
Many patients with chronic upper abdominal discomfort or pain complain primarily of Heartburn, Acid reflux, or Regurgitation.

If patients report these symptoms more than once a week:

- They are likely to have **gastroesophageal reflux disease (GERD)** until proven otherwise.
- These symptoms or mucosal damage on endoscopy are the diagnostic criteria for **GERD**.

**Risk factors include**:

- Reduced salivary flow, which prolongs acid clearance by damping action of the bicarbonate buffer.
- Delayed gastric emptying.
- Selected medications.
- Hiatal hernia.
Chronic Upper Abdominal Discomfort or Pain

Heartburn is a rising retrosternal burning pain or discomfort occurring weekly or more often.

It is typically aggravated by food such as:

- Alcohol
- Chocolate
- Citrus
- Fruits
- Coffee
- Onions
- Peppermint

Positions like:

- Bending over
- Exercising
- Lifting
- Lying supine

Note that angina from inferior wall coronary ischemia along the diaphragm may present as heartburn.
Some patients with GERD have atypical respiratory symptoms such as:

- Cough
- Wheezing
- Aspiration pneumonia

Others complain of pharyngeal symptoms, such as:

- Hoarseness and chronic sore throat

Some patients may have “alarm symptoms,” such as:

- Difficulty swallowing (dysphagia)
- Pain with swallowing (odyophagia)
- Recurrent vomiting
- Evidence of gastrointestinal bleeding
- Weight loss
- Anemia
- Risk factors for gastric cancer
Lower Abdominal Pain and Discomfort—Acute and Chronic
Acute Lower Abdominal Pain

Patients may complain of acute pain localized to the right lower quadrant.

Find out if:

- *It is sharp and continuous*
- *Intermittent and cramping*
- *Causing them to double over*
Acute Lower Abdominal Pain

Right lower quadrant pain or pain that migrates from the periumbilical region, combined with abdominal wall rigidity on palpation, is most likely to predict

→ **Appendicitis**

In women other causes include

- Pelvic inflammatory disease
- Ruptured ovarian follicle
- Ectopic pregnancy

Cramping pain radiating to the right or left lower quadrant may be a renal stone
Acute Lower Abdominal Pain

When patients report acute pain in the left lower quadrant or diffuse abdominal pain, investigate associated symptoms such as fever and loss of appetite.

Left lower quadrant pain with a palpable mass may be diverticulitis

Indicators of small or large bowel obstruction

- Diffuse abdominal pain
- Absent bowel sounds
- Firmness
- Guarding
- Rebound on palpation
If there is chronic pain in the quadrants of the lower abdomen, ask about

- **Change in bowel habits**

and

- **Alternating diarrhea and constipation**

Change in bowel habits with mass lesion indicates colon cancer

Intermittent pain for 12 weeks of the preceding 12 months with relief from defecation, change in frequency of bowel movements, or change in form of stool (loose, watery, pellet-like), without structural or biochemical abnormalities are symptoms of irritable bowel syndrome
Gastrointestinal Symptoms Associated With Abdominal Pain