

Abdominal examination

General look

Is he in pain or cachectic or obese?

Hands for clubbing, koilonychia (spoon-shaped nails) and signs of liver disease, including leukonychia and palmar erythema.

Look at the mouth and throat for aphthous ulcers, which are common in gluten enteropathy and inflammatory bowel disease

Ask the patient to look down and retract the upper eyelid to expose the sclera; look to see if it is yellow in natural light

Look for anemia by exposing conjunctiva

Examine the cervical, axillary and inguinal lymph nodes; gastric and pancreatic cancer may spread to cause enlargement of the left supraclavicular lymph nodes

Nutritional state

Record the height, weight, waist circumference and the patient's body mass index

Look for abdominal striae, which indicate rapid weight gain, previous pregnancy or, rarely, Cushing's syndrome. Loose skin folds signify recent weight loss.

Features of chronic liver disease

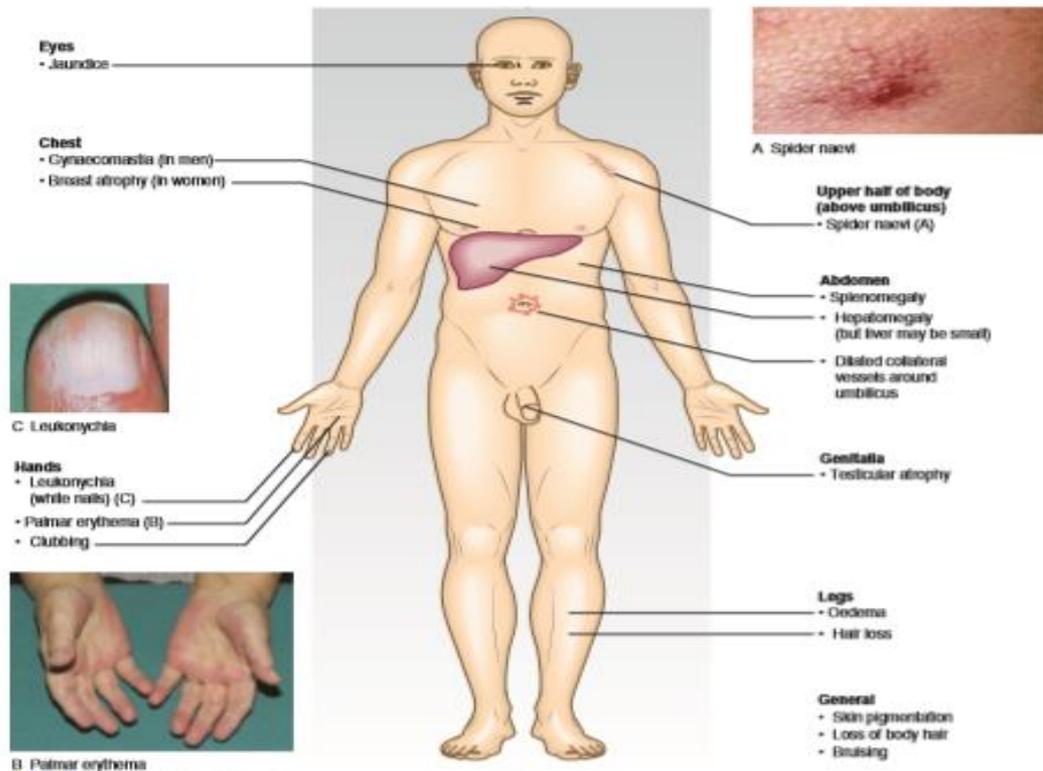


Fig. 8.11 Features of chronic liver disease.



8.30 Signs of liver failure

- Fetor hepaticus: stale 'mousy' smell of the volatile amine, dimethyl sulphide, on the breath
- Flapping tremor of outstretched arms with hands dorsiflexed ('asterixis')

Mental state varies from drowsiness with day/night pattern reversed, through confusion and disorientation, to unresponsive coma

- Late neurological features
 - Spasticity and extension of the arms and legs
 - Extensor plantar responses

Inspection

- Examine the patient in good light and warm surroundings.
- Position the patient comfortably supine with the head resting on only one or two pillows to relax the abdominal wall muscles. ■
Look at the teeth, tongue and buccal mucosa
- Note any smell, e.g. alcohol, fetor hepaticus

Expose the abdomen from the xiphisternum to the symphysis pubis, leaving the chest and legs covered.?? Nipple to mid thigh ??

Inspection- from the foot of the bed

Start inspection from the foot of the bed

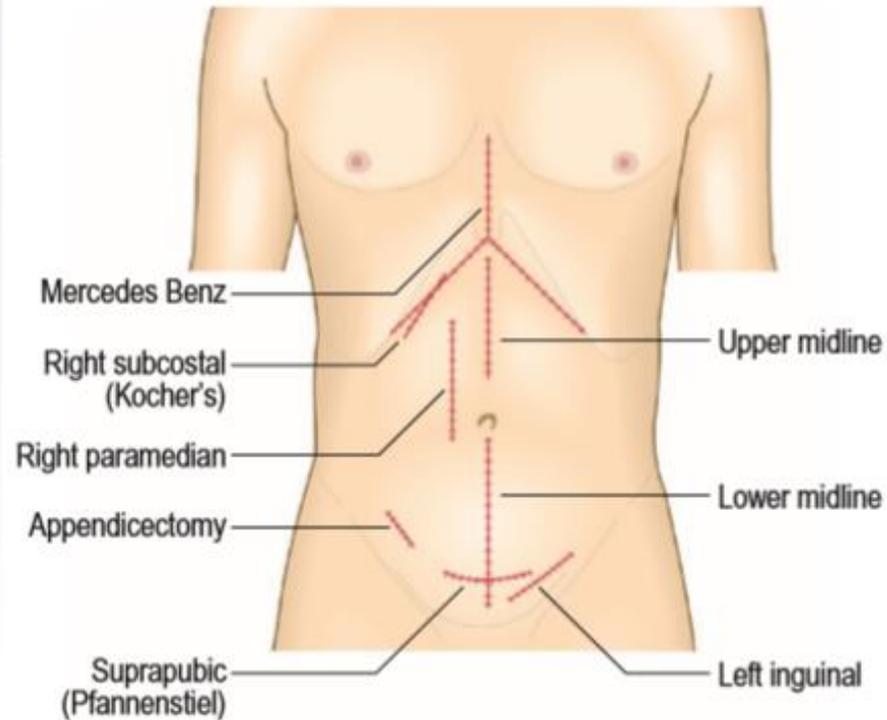
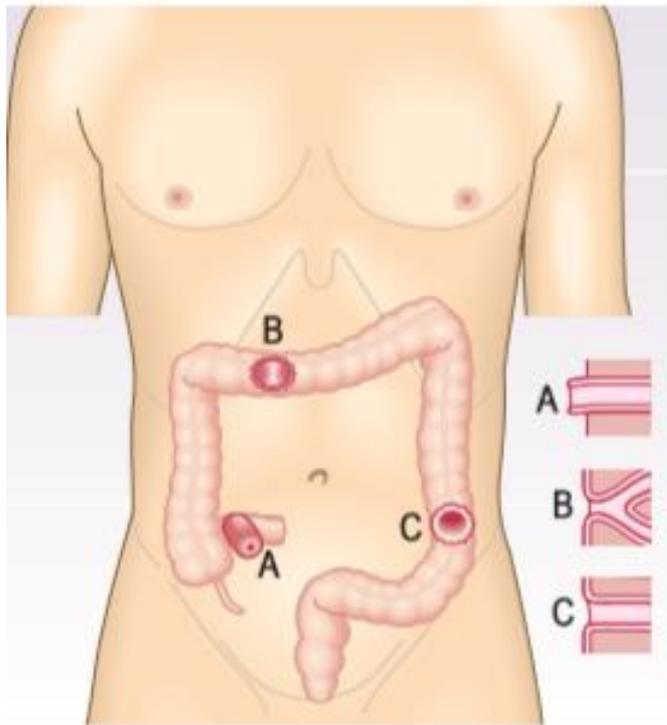
- Obvious abdominal findings
- Abdominal symmetry
- Shape of abdomen: flat, distended
- umbilicus
- Stoma bags
- Drains – wound drains, abdominal drains

Inspection- from the right side of the patient

Stand to the right side of the patient

- Movement of abdominal wall with respiration
- Visible peristalsis,
- Visible pulsation
- Dilated vein, discoloration, pigmentation
- Presence of scar : site , shape: neat, ugly, wide, bulge
- Examine for divaricated recti
- Ask patient raises the head off the bed or coughs.

Abdominal scars and stomas





A



B

8.28 Acute pancreatitis. **(A)** Bruising over the flanks (Grey–Turner’s sign). **(B)** Bruising round the umbilicus (Cullen’s sign).

Palpation

- Ensure that your hands are warm.
- If the bed is low, kneel beside it.
- Ask the patient to show you where any pain is and to report any tenderness elicited during palpation.
- Ask the patient to place the arms by the sides to help relax the abdominal wall.
- Use your right hand, keeping it flat and in contact with the abdominal wall.
- Observe the patient's face for any sign of discomfort throughout the examination.

Begin with light superficial palpation **away from any site of pain.**

Palpate each region in turn, looking for

- Abdominal muscle tone
- Superficial tenderness
- Superficial masses
- Palpable cough impulse

Repeat with deeper palpation.

Palpation

Describe any mass using the basic principles: its site, size, surface, shape and consistency, and note whether it moves on respiration. Is the mass fixed or mobile?

- To determine if a mass is superficial and in the abdominal wall rather than within the abdominal cavity, ask the patient to tense the abdominal muscles by lifting his head.
- An abdominal wall mass will still be palpable, whereas an intra-abdominal mass will not.

Epigastric mass

- Gastric cancer
- Pancreatic cancer
- Aortic aneurysm

Hepatomegaly

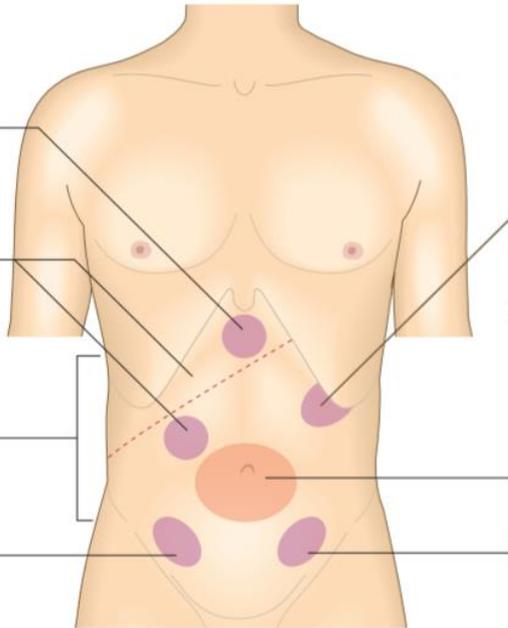
- Palpable liver not always enlarged
- Always percuss upper border
- Palpable gallbladder

Generalised distension

- Fat (obesity)
- Fluid (ascites)
- Flatus (obstruction/ileus)
- Faeces (constipation)
- Fetus (pregnancy)

Right iliac fossa mass

- Caecal cancer
- Crohn's disease
- Appendix abscess



Left upper quadrant mass

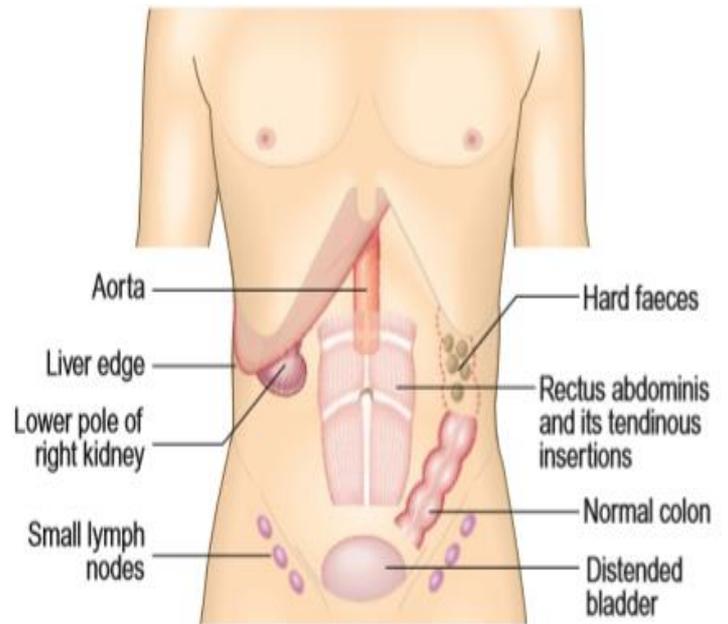
- ? Spleen
 - Edge
 - Can't get above it
 - Moves towards right iliac fossa on inspiration
 - Dull percussion note to 9-11th ribs mid-axillary line
 - Notch
- ? Kidney
 - Rounded
 - Can get above it
 - Moves inferiorly on inspiration
 - Resonant to percussion above it
 - Ballotable

Tender to palpation

- ? Peritonitis
 - Guarding
 - Rebound
 - Absent bowel sounds
 - Rigidity
- ? Obstruction
 - Distended
 - Tinkling bowel sounds
 - Visible peristalsis

Left iliac fossa mass

- Sigmoid colon cancer
- Constipation
- Diverticular mass

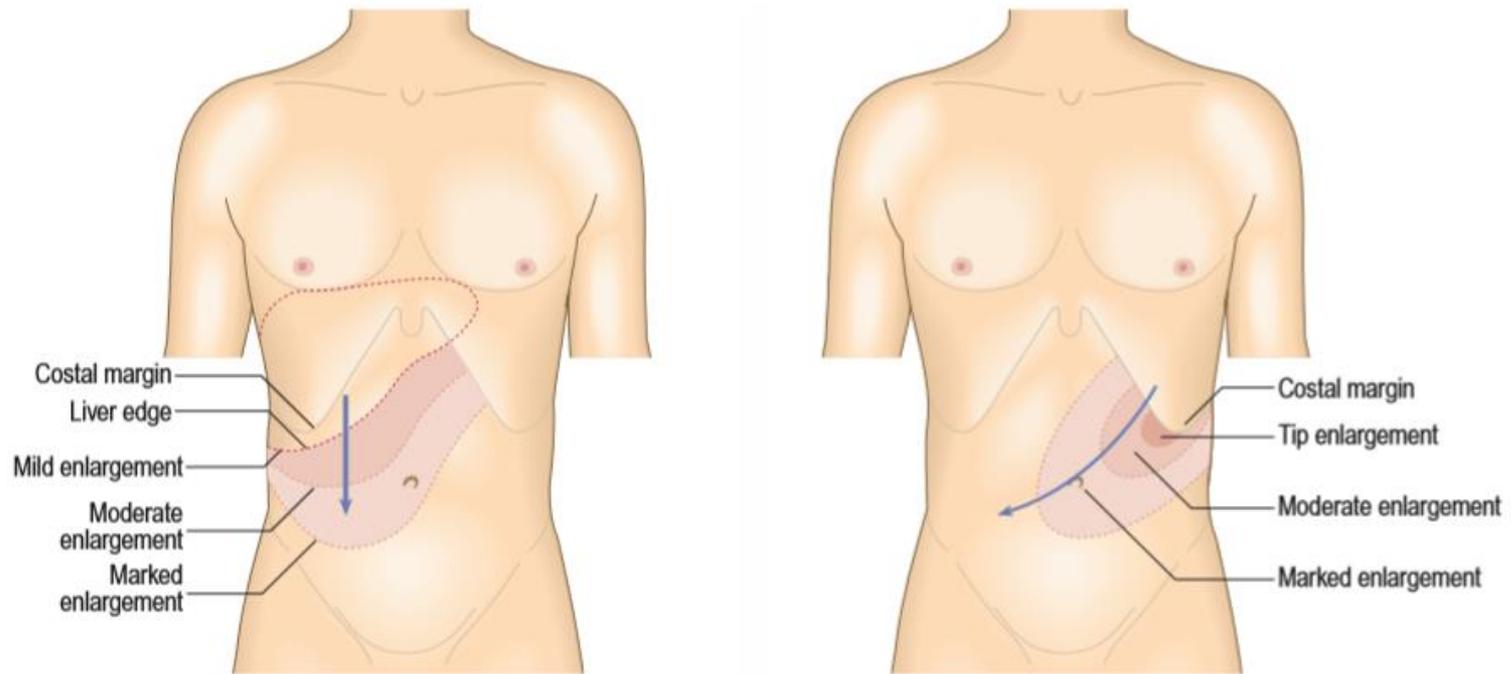


Muscle tone : guarding and rigidity

Tenderness Discomfort during palpation may vary and be accompanied by resistance to palpation.

Organs : describe size, surface: smooth or irregular, edge: smooth or irregular, consistency: soft or hard, tenderness and whether it is pulsatile.

Hepatomegaly





8.33 Causes of hepatomegaly

Chronic parenchymal liver disease

- Alcoholic liver disease
- Hepatic steatosis
- Autoimmune hepatitis
- Viral hepatitis
- Primary biliary cirrhosis

Malignancy

- Primary hepatocellular cancer
- Secondary metastatic cancer

Right heart failure

Haematological disorders

- Lymphoma
- Leukaemia
- Myelofibrosis
- Polycythaemia

Rarities

- Amyloidosis
- Budd–Chiari syndrome
- Sarcoidosis
- Glycogen storage disorders



8.35 Causes of splenomegaly

Haematological disorders

- Lymphoma and lymphatic leukaemias
- Myeloproliferative diseases, polycythaemia rubra vera and myelofibrosis
- Haemolytic anaemia, congenital spherocytosis

Portal hypertension

Infections

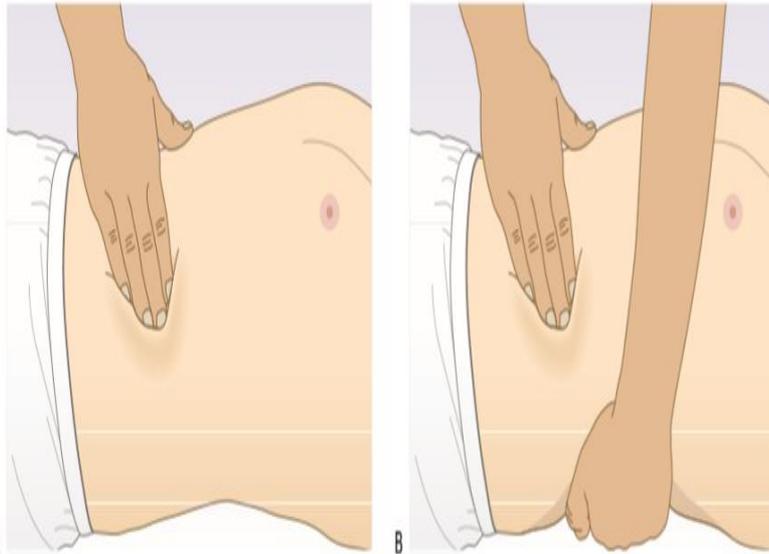
- Glandular fever
- Malaria, kala azar (leishmaniasis)
- Brucellosis, tuberculosis, salmonellosis
- Bacterial endocarditis

Rheumatological conditions

- Rheumatoid arthritis (Felty's syndrome)
- Systemic lupus erythematosus

Rarities

- Sarcoidosis
- Amyloidosis
- Glycogen storage disorders



Splenomegaly

- Place your hand over the umbilicus. Keep your hand stationary and ask the patient to breathe in deeply through the mouth.
- Feel for the splenic edge as it descends on inspiration
- Move your hand diagonally upwards towards the left hypochondrium 1 cm at a time between each breath the patient takes.
- Feel the costal margin along its length, as the position of the spleen tip is variable.
- If you cannot feel the splenic edge, ask the patient to roll towards you and on to his right side and repeat the above. Palpate with your right hand, placing your left hand behind the patient's left lower ribs, pulling the ribcage forward
- Feel along the left costal margin and percuss over the lateral chest wall to confirm or exclude the presence of splenic dullness.



8.36 Differentiating a palpable spleen from the left kidney

Distinguishing feature	Spleen	Kidney
Mass is smooth and regular in shape	More likely	Polycystic kidneys are bilateral irregular masses
Mass descends in inspiration	Yes, travels superficially and diagonally	Yes, moves deeply and vertically
Able to feel deep to the mass	Yes	No
Palpable notch on the medial surface	Yes	No
Bilateral masses palpable	No	Sometimes, e.g. polycystic kidneys
Percussion resonant over the mass	No	Sometimes
Mass extends beyond the midline	Sometimes	No (except with horseshoe kidney)

Percussion

Ask the patient to hold his breath in full expiration.

- Percuss downwards from the **right fifth intercostal space** in the mid-clavicular line, listening for the dullness that indicates the upper border of the liver.
- Measure the distance in centimeters below the costal margin in the mid-clavicular line or from the upper border of dullness to the **palpable** liver edge.
- Ask the patient to breathe in deeply and gently palpate the right upper quadrant of the abdomen in the mid-clavicular line. As the liver descends, the inflamed gallbladder contacts the fingertips, causing pain and the sudden arrest of inspiration (Murphy's sign)

Ascit



B



C



Shifting dullness

- With the patient supine, percuss from the midline out to the flanks. Note any change from resonant to dull, along with areas of dullness and resonance.
- Keep your finger on the site of dullness in the flank and ask the patient to turn on to his opposite side.
- Pause for **10 seconds** to allow any ascites to gravitate, then percuss again. If the area of dullness is now resonant, shifting dullness is present.

Auscultation

- With the patient supine, place your stethoscope diaphragm to the right of the umbilicus and do not move it.
 - Listen for up to **2 minutes??** before concluding that bowel sounds are absent. Bowel sounds are gurgling noises from the normal peristaltic activity of the gut. They normally occur every 5–10 seconds, but the frequency varies.
- Listen above the umbilicus over the aorta for arterial bruits.
- Now listen 2–3 cm above and lateral to the umbilicus for bruits from renal artery stenosis.

Auscultation

Listen over the liver for bruits. A friction rub, which sounds like rubbing your dry fingers together, may be heard over the liver (perihepatitis) or spleen (perisplenitis).

A succussion splash sounds like a half-filled water bottle being shaken. Explain the procedure to the patient, then shake the patient's abdomen by lifting him with both hands under his pelvis. An audible splash more than 4 hours after the patient has eaten or drunk anything indicates delayed gastric emptying, e.g. pyloric stenosis.

Hernias

- Examine the groin with the patient standing upright.
- Inspect the inguinal and femoral canals and the scrotum for any lumps or bulges.
- Ask the patient to cough; look for an impulse over the femoral or inguinal canals and scrotum.
- Identify the anatomical relationships between the bulge, the pubic tubercle and the inguinal ligament to distinguish a femoral from an inguinal hernia.
- Palpate the external inguinal ring and along the inguinal canal for possible muscle defects. Ask the patient to cough and feel for a cough impulse.
- Now ask the patient to lie down and establish whether the hernia reduces spontaneously. If so, press two fingers over the internal inguinal ring at the mid-inguinal point and ask the patient to cough or stand up while you maintain pressure over the internal inguinal ring. If the hernia reappears, it is a direct hernia. If it can be prevented from reappearing, it is an indirect inguinal hernia.
- Examine the opposite side to exclude the possibility of asymptomatic hernias.

Digital Rectal Examination(DRE)

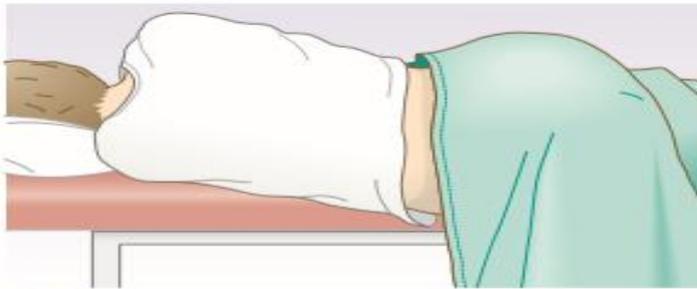


Fig. 8.24 The correct position of the patient before a rectal examination.



Fig. 8.25 Rectal examination. The correct method to insert your index finger in rectal examination.

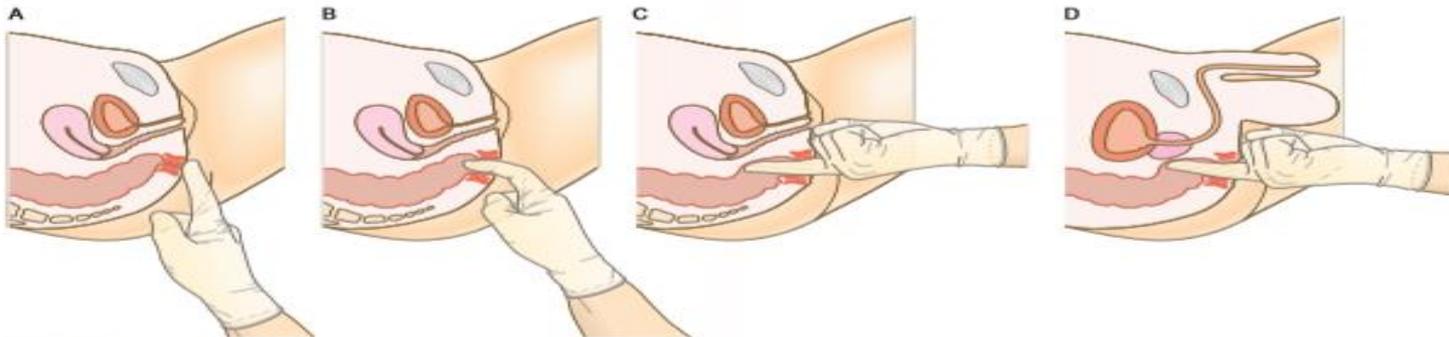


Fig. 8.26 Examination of the rectum. (A and B) Insert your finger, then rotate your hand. (C) The most prominent feature in the female is the cervix. (D) The most prominent feature in the male is the prostate.

Explain what you are going to do, why it is necessary and ask for permission to proceed. Tell the patient that the examination may be uncomfortable but should not be painful.

- Offer a chaperone; record if this is refused. Record the name of the chaperone.
- Position the patient in the left lateral position with his buttocks at the edge of the couch, his knees drawn up to his chest and his heels clear of his perineum
- Put on gloves and examine the perianal skin, using an effective light source.
- Look for skin lesions, external haemorrhoids and fistulae.
- Lubricate your index finger with water-based gel.

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- Place the pulp of your forefinger on the anal margin and apply steady pressure on the sphincter to push your finger gently through the anal canal into the rectum
 - If anal spasm occurs, ask the patient to breathe in deeply and relax. If necessary insert a local anesthetic suppository before trying again. If pain persists, examination under general anesthesia may be necessary.
 - Ask the patient to squeeze your finger with his anal muscles and note any weakness of sphincter contraction.
 - Palpate systematically around the entire rectum; note any abnormality and examine any mass. Record the percentage of the rectal circumference involved by disease and its distance from the anus
 - Identify the uterine cervix in women and the prostate in men; assess the size, shape and consistency of the prostate and note any tenderness.
 - If the rectum contains feces and you are in doubt about palpable masses, repeat the examination after the patient has defecated.
 - Slowly withdraw your finger. Examine it for stool color and the presence of blood or mucus

Thank you
