Intended learning outcomes

The session objectives for this session are:

- Discuss common causes of abdominal symptoms and describe their key features
- Describe how to gather a history of a patient presenting with abdominal symptoms including assessment of alcohol intake
- Describe the key red flags in the assessment of abdominal symptoms
- Practise the abdominal examination
- Perform a urinalysis

Context for the session

Students will have covered the following in the two-week abdominal pain block:

In **Case-Based Learning** they consider a 75-year-old woman with a history of ischaemic heart disease and sudden onset abdominal pain, due to infarction of her small bowel.

In **Lectures, workshops and practical** they learn about:

- Causes and investigations of upper and lower GI bleeding e.g. Mallory-Weiss tear, Peptic ulcer, Varices, Diverticulitis, Inflammatory bowel disease, Haemorrhoids, Anal fissure, Large bowel malignancy. Definite haematemesis and melaena. Appreciate the importance of investigating for possible occult GI tract bleeding in cases of iron deficiency anaemia.
- The normal function of the liver and the clinical features of acute and chronic liver disease including cirrhosis; and the relevant investigations for liver dysfunction. The common causes of liver disease such as medication, alcohol, viral infection, haemochromatosis, cancer secondaries and autoimmune disease.
- Pathophysiology of vomiting. Describe the causes and pathophysiology of chronic vomiting, including bulimia and pyloric stenosis. Describe the acute and chronic acid-base disturbances associated with vomiting. Pharmacological management of vomiting including supportive management (IV fluids and NG tube). The significance of faeculant vomiting.
- Abdominal pain (referred, colicky and peritonitic), including in in special circumstances.
- Symptoms and investigations of viral and bacterial infections of the GIT, including hepatitis
- Symptoms, signs and investigations of altered bowel habit and GI tract malignancy
- Functional bowel disorders

Specifics for abdominal pain in GP clinical contact

Introduction

The key learning goals for this session are for students to apply their knowledge by interviewing and examining patients with abdominal symptoms.

As with the previous sessions:

- refer to the Year 2 GP handbook, which covers the information common to all sessions.
- use the suggested session plan below as a guide on how to use your time with your group

Allow time for:

- introductions (reflecting on any learning/action points from their previous case, breathlessness)
- student-led interaction with patient(s), and
- summing up at the end/planning for next time (these students will be coming to you for the joint and back pain session 20th March)

Students should be aware of the following causes of abdominal pain: dyspepsia, peptic ulcer disease, biliary colic, cholecystitis, pancreatitis, appendicitis, diverticulitis, inflammatory bowel disease, irritable bowel syndrome, coeliac disease, bowel infarction, perforated viscus and peritonitis, tumours including bowel cancer, and abdominal aortic aneurysm (AAA).

Students should also be aware of, but will cover these later in greater depth, the following causes of abdominal pain "in special circumstances":

- Renal causes e.g. cystitis, renal colic, pyelonephritis.
- Gynaecological causes e.g. Ovarian cysts, Pelvic inflammatory disease, ectopic pregnancy, menstrual pain.
- Medically unexplained symptoms.
- Metabolic causes e.g. diabetic ketoacidosis.
- Paediatric causes e.g. abdominal migraine, mesenteric adenitis.

(Expert) patients

Suitable patients for the block are:

- Patients with chronic or recurrent conditions causing abdominal pain, jaundice or change in bowel habit.
- Patients with a previous episode of acute abdominal pain e.g. previous gallstones/pancreatitis/appendicitis etc.

For examination, any patient with relevant history (does not need to have current abdominal signs).

If there is time it would be very helpful if the students could perform and interpret urine dip testing with whoever in your practice does daily urinalysis.

Suggested session plan

AM	PM	Activity	Details
0900	1400	**Introduction** 30 mins	●Take register ●Check in with your students ●Review the session plan and learning objectives ●Brainstorm topic
0930	1430	**Clinical interview** 45 mins	Students practise taking a clinical history with a patient and presenting this to the GP/group, considering clinical reasoning.
1015	1515	**Break** 10 minutes	
1025	1525	**Examination** 45 mins	Students consider/practice relevant clinical examination and summarising findings to the GP/group
1110	1610	**Break** 10 minutes	
1120	1620	**Debrief** 30 minutes	●Discuss the day's cases & draw out learning points ●Tutor Feedback
1150	1650	**Wrap up** 10 mins	●Summarise learning points and identify new learning needs ●Plan for next time
1200	1700	**Close**	●Submit register

The above is only a guide, and GP teachers are at liberty to use the time flexibly, according to the patients met and group's needs.

Tasks

Assess the students' learning needs for this session: what have students learnt during their case-based learning, what do they feel confident in, and what do they want to revisit?

Prepare for the session (use the supplied mind map, if you find this helpful):

- Brainstorm the causes of abdominal symptoms e.g. pain, jaundice, change in bowel habit, the underlying pathology and how to assess and differentiate between causes.
- Identify specific history and associated features of the acute abdomen

The abdominal pain block covers several potentially sensitive topics:

- Weight
- Bowel habit
- Alcohol intake
- (Urinary symptoms)
- (Chance of pregnancy)
- (Sexual history)

Elicit and acknowledge any anxiety among the students about asking about these issues and point out this may be present in patients too:

- Medical student may feel anxious because of not being used to asking about these topics; not knowing how to word questions; and/or fear about how patients will react.
- Patient anxiety may stem from embarrassment, worries about being judged, worries about confidentiality or being uncertain of the relevance of the questions they are being asked.

See and draw on the below advice ("Asking sensitive questions"), given to students before the session.

Student information

Gastrointestinal symptoms are common and are often functional. Symptoms suggesting a serious diagnosis include:

- Dysphagia
- gastrointestinal bleeding
- persistent vomiting or diarrhoea
- weight loss
- nocturnal symptoms
- fever and anaemia.

The risk of serious disease increases with age.

Causes of abdominal pain:

Gastro-oesophageal reflux disease (GORD)/Dyspepsia: the pain is typically a hot, burning retrosternal (GORD) or epigastric discomfort (Dyspepsia). May be associated with an acid or bitter taste in the mouth, sudden filling of the mouth with saliva ("waterbrash"), nausea, bloating and

belching. May be precipitated by lying down or bending forwards and by meals especially fatty or spicy foods; and relieved by antacids and proton-pump inhibitors.

Peptic ulcer: includes both gastric and duodenal ulcers. Characterised by epigastric pain and tenderness usually occurring 1-3 hours after eating. It may be associated with an iron-deficiency anaemia, due to a bleeding ulcer, or may present with haematemesis or melaena (red flags).

Biliary colic is caused by gallstones getting stuck in the bile ducts. It is characterised by sudden onset, constant epigastric or right hypochondrium pain which may radiate to the right scapula. Despite the name, the pain is rarely colicky! The pain may be precipitated by eating and may last for up to 24 hours before resolving spontaneously.

Cholecystitis is inflammation of the gallbladder. The patient may have a history of gallstones or biliary colic. The pain may be similar to biliary colic but fever, vomiting and severe tenderness in the right hypochondrium make a diagnosis of cholecystitis more likely. They may have a positive "Murphy's sign" (see below).

Pancreatitis: severe epigastric pain radiating to the back and associated with vomiting. The patient may be very unwell with epigastric or generalised tenderness, tachycardia and hypotension. Alcohol is a common cause.

Appendicitis: generalised periumbilical pain progresses to localised pain and tenderness in the right iliac fossa. Moving and coughing aggravate the pain. Associated with nausea, anorexia and low-grade fever.

Diverticulitis: means inflammation of small outpouchings (diverticulae) from the wall of the colon. Most commonly presents with left lower quadrant pain and localised tenderness (more commonly right lower quadrant in Asian patients). Associated with fever, tachycardia and change in bowel habit (commonly diarrhoea which may contain red blood).

Inflammatory bowel disease: includes Crohn's disease and ulcerative colitis. Usually presents with diarrhoea containing blood. The patient may also experience generalised or cramping abdominal pain, weight loss, fever and symptoms of anaemia.

Irritable bowel syndrome: a "functional" disorder which causes chronic abdominal pain, bloating or change in bowel habit (diarrhoea or constipation). Abdominal pain may be relieved by defecation. Symptoms may be precipitated by stress.

Coeliac disease: an autoimmune condition which is provoked by eating gluten. It presents with a range of symptoms including generalised abdominal pain, bloating, change in bowel habit (diarrhoea or constipation), weight loss, mouth ulcers and anaemia. The patient may notice that their symptoms are precipitated by eating foods containing gluten.

Bowel ischaemia/infarction: occurs when the blood supply to an area of the gut is blocked. The patient will complain of moderate to severe abdominal pain but there may be little or no tenderness at the start – this is unusual given the degree of pain which the patient feels.

Tumours including bowel cancer: tumours can affect any abdominal organ and present with pain. Bowel tumours may present with a change in bowel habit or bleeding from the GI tract.

Perforated viscus and peritonitis: a hole can form in any hollow organ in the abdomen and can be caused by a variety of conditions. Peritonitis is inflammation of the peritoneum and can be caused by a perforated viscus. The patient will experience sudden onset, severe pain and is likely to be very unwell. The patient will usually lie very still.

Abdominal aortic aneurysm (AAA) dissection: a tear in the wall of the aorta. It usually causes a tearing, shearing pain which radiates to the back. Mortality is very high and patients usually present as an emergency.

Bowel obstruction: obstruction of the bowel may be caused by many conditions including tumours, narrowing or twisting of the bowel, foreign bodies and hernias. The patient will present with absolute constipation (no flatus), vomiting, abdominal distension and generalised abdominal pain.

History

You should be familiar with the systematic medical history, but what are the specific areas to cover in abdominal pain?

Identify specific history and associated features of pancreatitis, appendicitis, abdominal aortic dissection or perforated viscus/peritonitis and distinguish them from other causes of abdominal pain.

Assess abdominal pain using **SOCRATES**:

● **SITE:** Patients may find it difficult to localise the pain. The site of pain relates to the embryological origins of abdominal organs:

- Epigastric pain relates to foregut structures (stomach, duodenum, liver, pancreas, gallbladder).
- Periumbilical pain relates to midgut structures (small and large intestines including appendix).
- Suprapubic pain relates to hindgut structures (rectum and urogenital organs).

A very localised pain may originate from the parietal peritoneum e.g. appendicitis when the inflammation spreads to the peritoneum overlying the appendix (pain moves from the midgut region)

● **ONSET:** With sudden onset of severe abdominal pain you need to consider life threatening causes such as a perforated viscus or abdominal aortic dissection.

● **CHARACTER:** Colicky pain (comes and goes in waves) indicates obstruction of a hollow muscular-walled organ e.g. intestine, gall-bladder, bile duct, ureter). Burning pain indicates an acid cause.

● **RADIATION:** Gallbladder pain may radiate to the right scapula. Shoulder-tip pain occurs with diaphragmatic irritation. Radiation to the back may indicate pancreatitis or aortic dissection. Renal colic pain may radiate from the loin to the groin.

● **ASSOCIATED SYMPTOMS:** Anorexia, nausea and vomiting are common but may be non-specific. Altered bowel habit may occur with irritable bowel syndrome, diverticular disease and colorectal cancer. Sweating, hypotension and tachycardia may suggest a perforated viscus or AAA dissection.

● **TIMING:** Appendicitis may present with generalised central abdominal pain which then ‘moves to’ the right iliac fossa. Pain after eating suggests dyspepsia or biliary origin.

● **EXACERBATING/RELIEVING FACTORS:** Pain exacerbated by movement or coughing suggests inflammation, patients may lie very still. Patients with colicky pain tend to move around or draw their knees up to their chest. Sitting forward may help with pain of a pancreatic origin. In irritable bowel syndrome, pain may be relieved by passing flatus or defaecating.

● **SEVERITY:** Consider a scale of 1-10.

Bowel habit. What is the patient's normal bowel habit and how has it changed? Ask about frequency, consistency and colour of stool. Ask about presence of blood (red blood or black, tarry stool – melaena) and mucus. Discussing stool consistency with patients can be helped by using the Bristol stool chart.

A patient's bowel habit can change for a variety of reasons, some of which are serious. It is important to identify any associated "red flags" (blood in the stool; unintentional or unexplained weight loss; abdominal or rectal mass; anaemia; family history of bowel or ovarian cancer).

Causes of a change in bowel habit include:

- Bowel cancer
- Infective diarrhoea
- Irritable bowel syndrome
- Inflammatory bowel disease
- Coeliac disease
- Bowel obstruction

Associated symptoms:

● Dysphagia (difficulty swallowing): establish timeline and whether it occurs with liquid or solids.

● Nausea and vomiting: vomit containing blood (fresh red or coffee-ground) suggests an upper GI bleed. Vomit containing bile (green) suggests an upper GI obstruction. Faeculant vomiting suggests a lower GI obstruction.

● Jaundice: yellowish discolouration of the skin, sclerae and mucus membranes. Ask about the colour of the urine and stool. Ask if patient has any itching (pruritus).

● Urinary symptoms: frequency, dysuria, incontinence.

● Appetite and weight loss

● Fever

Past medical history

● Previous surgery

● Chronic bowel diseases e.g. Crohn's, ulcerative colitis

● **Associated** conditions: cardiovascular risk factors may suggest AAA. Autoimmune conditions, such as type 1 diabetes and thyroid disease, may be associated with non-alcoholic fatty liver disease and autoimmune hepatitis

Medications: many drugs affect the GI system or may be nephro- or hepato-toxic.

Family history: Risk of certain conditions increases if a first-degree relative has the condition e.g. colorectal cancer, polyps, Crohn's, ulcerative colitis.

Social history:

● What is their diet like? Excessive alcohol consumption is a modifiable risk factor for liver disease.

● Smoking is a modifiable risk factor for peptic ulceration, oesophageal cancer and colorectal cancer.

● Intravenous drug use, tattoos, foreign travel, blood transfusions, sexual history are risk factors for viral hepatitis.

Asking sensitive questions

To be able to understand the possible cause of abdominal pain or other symptoms, you will need to ask patients personal questions about their bowel habit, weight, sexual activity, etc. Some patients may feel embarrassed about this too. The following approach can help:

Prepare the patient and set the context. Explain why you are asking—you may need to address confidentiality:

- "I need to ask you about your lifestyle to better understand your situation"
- "I'm going to ask you about your bowel habit to better understand how your gut is working"

Ask permission

- "Would it be okay if I ask you about your alcohol intake?"
- "If you don't mind, I would ask you some questions about your lifestyle?"

Normalise. This can include assuming that the behavior is already happening but be careful as these are leading questions.

- "I always ask about alcohol intake because it has an important impact on overall health …"
- "Bowel habit can vary widely from one person to the next. How often do you open your bowels?"
- "How often do you have a drink containing alcohol in an average week?"
- "When did you last have sex?"

Talk in matter of fact, factual terms (not judgmental terms). Avoid "Do you eat a healthy diet?"or "Do you get drunk", instead:

- "Talk me through what you eat in a typical day?"
- "How many drinks containing alcohol do you typically have on a single occasion?"

Ask factual, specific questions (not generalisations)

- "How often do you open your bowels?"
- "Has your weight changed recently?"

Closed questions and a "menu" of responses. When asking sensitive questions, closed questions can help relieve anxiety about how to answer, as can giving a menu of responses.

- "Do you open your bowels: every day, several times a day, or do you go for a day or more without opening your bowels?"

Remember also that while most, but not everyone, will understand references to “bowel habit” or “stool”. Most people are comfortable with being asked when they last had a poo/how often they poo; the same applies to “pee” or “wee” (instead of urine).

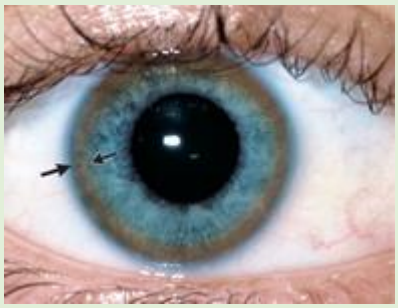
Examination

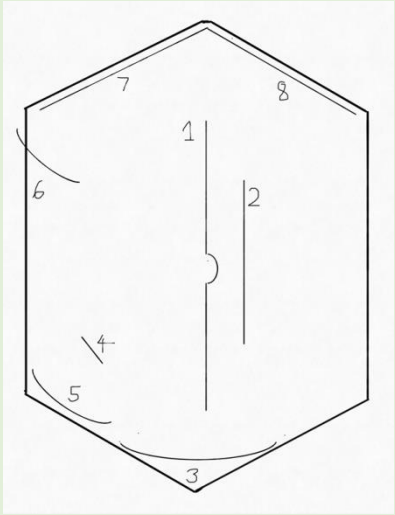
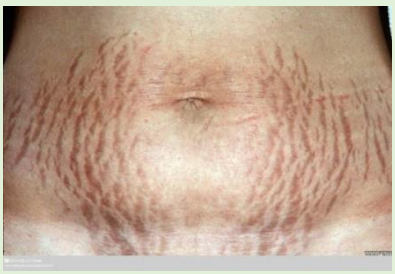
Setting up for examination	**WIPPPE** **W**ash hands **I**ntroduce yourself and identify patient **P**ermission – explain procedure and gain consent **P**osition – initially at 45°, totally flat later in examination **P**ain – check that the patient is comfortable **E**xposure – adequately expose the whole upper torso (or at least from the bottom of the sternum to the symphysis pubis)
General examination	• Look to see if the patient is comfortable or obviously in pain. Do they look well or unwell? • Vital signs (if acutely unwell or infection suspected) • High or low body mass index. Are they cachectic? • Are they jaundiced or pale? • Comment on any relevant findings e.g. food/drink, nil by mouth (NBM) sign, vomit bowls, IV infusions, nasogastric tubes, surgical drains, catheter.
Hands and nails	• Look for *clubbing*, *leukonychia*, *koilonychia*, *palmar erythema*, and *tar staining*. • Feel for *Dupuytren’s contracture*. • Check pulse. • Count respiratory rate—breaths in 15 seconds x4. Normal is 12-15 at rest (15-20 in some patients e.g. anxiety). • *Hepatic flap* (asterixis): identical to hypercapnic flap. Ask the patient to hold their arms out in front of them with their hands dorsiflexed at the wrist (ask patient to “cock their wrists back”). Hold for at least 15 seconds. Look for a coarse flapping tremor. Seen in encephalopathy due to liver failure.
Arms	Look for: *Bruising* – can be due to a coagulation disorder due to liver failure *Scratch marks* (excoriations) – suggests itch (pruritus) which may be due to jaundice (early sign) *Track marks* – scars due to intravenous drug use (risk factor for hepatitis B & C)
Neck	Examine for cervical and supraclavicular *lymph nodes* (stand behind the patient). *Virchow’s node* – left sided supraclavicular lymph node which, if enlarged, suggests gastric malignancy.

Face/Mouth	**Eyes:** *Jaundice* – ask patient to look down and retract upper eyelid to expose the sclera. Is there a yellow discolouration of the sclera (scleral icterus)? *Conjunctival pallor* – anaemia *Kayser-Fleischer rings* – copper deposits in the iris seen in Wilson's disease (best seen with a slit lamp) *Xanthelasma* – raised yellow lesions caused by a build-up of lipids beneath the skin (hypercholesterolaemia) Inspect the **mouth, throat and tongue**: *Ulcers* – seen in Crohn's and IBD *Angular stomatitis* – painful cracks at the corners of the mouth seen in thiamine, B12 and iron deficiencies *Glossitis* – red, swollen tongue seen in iron, B12 and folate deficiencies
Inspection	Expose the **chest**. Look for: *Spider naevi* (>5 is abnormal) *Gynaecomastia* – excessive development of breast tissue in males. Causes: alcoholic liver disease, drugs. *Loss of chest hair* in men (chronic liver disease) Cover the chest as appropriate. Ask patient: "are you comfortable lying flat?". If yes, lay patient flat with their head on a single pillow. If no, lay them as flat as possible whilst maintaining patient comfort. The patient's arms should be at their sides. This helps to relax the abdominal wall. Expose the **abdomen** from the bottom of the sternum to the symphysis pubis. Look for: *Distension*: consider the 5 F's (fat, fluid, flatus, faeces, foetus) *Scars*: recent scars will be pink and vascular, old scars are white and may be indurated. Look carefully for small laparoscopic scars (including infra-umbilical). *Visible veins*: abnormally prominent veins suggest portal hypertension or vena cava obstruction. *Caput medusae:* veins radiating out from the umbilicus. *Stomas*: Where is it located on the abdomen? Can you see any exposed mucosa? What does it look like? Is there a bag? What's in the bag? Any blood, pus, mucus? A stoma may be formed from the large bowel, small bowel or renal tract. *Striae*: pink or white stretch marks. Caused by weight gain or rapid weight loss. Pink/purple in Cushing's syndrome.
Palpation	Squat by the side of the bed (or raise couch up). You should look at the patient's face for signs of pain whilst palpating the abdomen. "Do you have any pain in your abdomen?". If yes, "can you show me where?". "Please let me know if I cause you any discomfort"

	Light palpation: Starting away from any site of pain, use one hand to lightly palpate all 9 regions of the abdomen. When palpating, keep your whole hand in contact with the abdomen and use your fingers to palpate (flexing at the metacarpo-phalangeal joints). Note the site of any tenderness. **Deep palpation**: Repeat as above with deeper palpation (more pressure) taking care over areas of tenderness. Feel for masses or structural abnormalities. If you feel a lump, try to describe its exact location, size, shape, surface, consistency, mobility, movement with respiration, tenderness and whether or not it is pulsatile. **Palpating the abdominal organs**: Feel for the *liver* (start at the RIF, move up to the right hypochondrium) and *spleen* (start at the RIF, move up to the left hypochondrium). Move your hand up when the patient breathes out and press into the abdomen when the patient breathes in. Ballot the *kidneys* at the flanks. Feel for an *abdominal aortic aneurysm* (AAA) just above the umbilicus.
Percussion	Produces a hollow resonance, it produces a dull thud without resonance over fluid and solid masses. Press the middle finger of your non-dominant hand firmly onto the abdomen. Tap it with the flexed index or middle finger of your dominant hand. Percussing for the liver: start at the right iliac fossa (RIF) and percuss up to the right costal margin listening for areas of dullness. Then percuss down the chest from the 5th intercostal space mid-clavicular line listening for dullness indicating the upper border of the liver. Normal liver extends from the 5th rib to the costal margin. Percuss for the spleen from the RIF to the left costal margin. Percuss for the bladder from the umbilicus down to the symphysis pubis.
Auscultation	Listen for bowel sounds with the diaphragm of the stethoscope to the right of the umbilicus. Listens for up to 2 minutes if needed. Listen 2-3 cm above and lateral to the umbilicus for bruits from renal artery stenosis
Lower limb	Check for pitting oedema, bruising and erythema nodosum. Examine hernia orifices, inguinal nodes and external genitalia as appropriate.
Investigations	Perform a digital rectal examination if indicated Urine dip (and pregnancy if indicated in female patients)
Closing	Cover patient/help them dress or get off couch if required, thank patient. Explain any findings to patient. Wash hands.

Further notes:	
Clubbing 	There is a loss of the angle between the nail and the nail bed. Abdominal causes of clubbing include the 4 Cs: - **C**irrhosis - **C**rohn's disease - Ulcerative **C**olitis - **C**oeliac disease
Leukonychia  DermNetNZ.org	White nails. Cause: hypoalbuminaemia (e.g. protein calorie malnutrition, malabsorption, hepatic disease, nephritic/nephrotic syndromes).
Koilonychia 	Spoon-shaped nails (concave). Cause: iron deficiency anaemia.
Palmar erythema 	Blotchy reddening of the palms. Causes: can be a normal finding, chronic liver disease, pregnancy.

Dupuytren's contracture 	This is a localised formation of scar tissue beneath the skin of the palm of the hand. Thickening and fibrous contraction of the palmar fascia. May progress from a palpable irregular thickening of the fascia to a fixed flexion deformity of the 5th finger (may work across to the 3rd or 2nd fingers). Causes: alcoholic liver disease, familial. Associations: • Increasing age • Family history • Smoking • Alcohol excess and cirrhosis • Diabetes, trauma including the use of pneumatic drills
Jaundice 	Due to raised bilirubin levels. Seen as a yellow discolouration in the skin – maybe most easily seen in the sclera (scleral icterus).
Kayser-Fleischer rings 	Copper deposits in the iris seen in Wilson's disease (best seen with a slit lamp).
Angular stomatitis/cheilitis 	Inflammation of the corners of the mouth. Causes include thiamine, B12 and iron deficiencies

Spider naevi 	A central red area with engorged capillaries spreading out from it in a 'spidery' manner. It will completely disappear with pressure applied to the centre. Found in the superior vena cava (SVC) distribution. >5 is abnormal, causes include chronic liver disease and oestrogen excess.
Abdominal scars 	1. **Midline Laparotomy:** exploratory, various abdominal surgery (hemicolectomy, AAA repair) 2. **Right Paramedian:** spleen, kidney, adrenal surgery 3. **Pfannenstiel**: Caesarian section, hysterectomy, cystectomy, bladder, prostate surgery 4. **Gridiron/McBurney's incision:** Appendicectomy 5. **Hockey stick:** Renal transplant 6. **Loin incision:** Nephrectomy, specialist renal surgery 7. **Right subcostal / Kocher's:** open cholecystectomy, liver resection, biliary surgery 8. **Left subcostal / reverse Kocher's:** open splenectomy
Caput medusa 	Veins radiating out from the umbilicus. Abnormally prominent veins suggest portal hypertension or vena cava obstruction.
Striae 	Pink or white stretch marks. Caused by weight gain or rapid weight loss. Pink/purple in Cushing's syndrome.

Stomas	***Colostomy***: usually seen in left iliac fossa (LIF), flush to the skin. Bag may contain semi-solid to formed brown stool. ***Ileostomy***: usually in the right iliac fossa (RIF), you may see a 'spout' of bowel mucosa extending from the abdominal wall. Bag may contain semi-formed and liquid stool – may be green. ***Urostomy***: usually in the right iliac fossa. Bag will contain urine. ***Nephrostomy***: usually at the flank (usually temporary). Bag will contain urine.
Abdominal tenderness	***Guarding***: *Voluntary guarding* is the voluntary contraction of the abdominal muscles in response to pain. *Involuntary guarding* is the reflex contraction of the abdominal muscles when there is inflammation of the parietal peritoneum (generalised peritonitis). The patient will lie very still, and breathing will become more thoracic. ***Rebound tenderness***: pain is worse when you rapidly remove your hand after deep palpation. ***Murphy's sign****:* using the tips of your fingers, palpate just below the right hypochondrium. Ask the patient to breathe deeply. Move your fingers upwards when the patient breathes out. Breathing in may bring an inflamed gallbladder into contact with your fingers. The patient will halt their breath in due to the pain. This indicates cholecystitis (Murphy's sign is positive).

Urinalysis

Dipping a urine sample with a multistix test detects several substances in the urine including glucose, proteins, red cells, ketones and by products of bacteria such as nitrites. It can help:

- diagnose urinary tract infections and renal stones
- test for and monitor diabetes, kidney disease, high blood pressure, liver disease and other conditions such as metabolic disorders
- monitoring in pregnancy.

An explanation to patients about what a urine dipstix test is can be found here:

https://patient.info/health/urine-dipstick-test

and how to collect a mid-stream specimen of urine here:

https://patient.info/health/midstream-specimen-of-urine-msu

The below table is taken from the Consultation and Procedural skills (CAPS) logbook for students from Year 3 onwards. It gives a clear run through of how to do a urinalysis.

	Performance Criteria: The student will:
1.	Introduce yourself, explain procedure to patient and obtain consent
2.	Prepare equipment
3.	Check that reagent strip has not passed expiry date
4.	Ask patient when urine sample was passed
5.	Put gloves on
6.	Observe colour and opacity
7.	Remove reagent strip from bottle, replace lid immediately and check that test pads are the correct colour at the start
8.	Dip the reagent strip into the sample of urine, ensuring that all the test pads are covered
9.	Remove reagent strip immediately, as you do so drag the back of the test strip against the sample pot to remove excess urine
10.	Replace lid on urine sample bottle
11.	Hold the stick so the urine does not run into individual test squares, wait the appropriate time before reading each result
12.	Use stopwatch to record time accurately and hold colour key next to the reagent strip*
13.	Decide if urine sample needs to be sent to laboratory or if the patient needs to do a MSU and then dispose of reagent strip and gloves. Dispose of urine in sluice or return to patient
14.	Wash hands
15.	Explain results to patient and decide what further action is necessary
16.	Record results accurately in notes

* Beware colour blindness – students with known colour blindness should ask for help reading results

Non-visible haematuria is picked up on urinalysis. It is important to exclude menstrual blood as a contaminate of the urine.

Proteinuria may indicate underlying renal disease (which can be otherwise asymptomatic).

- Nephrotic syndrome is the combination of heavy proteinuria (>3.5g/24 hours), hypoalbuminemia and oedema.
- Patients may also have peripheral oedema, pleural effusions and ascites and you should ask about symptoms of malignancy e.g. weight loss, change of bowel habit and persistent cough and chronic inflammation such as rheumatoid arthritis or inflammatory bowel disease.

Resources

Alcohol:

Alcohol History Taking | OSCE Guide | Geeky Medics

Alcohol - problem drinking | Health topics A to Z | CKS | NICE

Acute abdominal pain: Differential diagnosis | Diagnosis | Appendicitis | CKS | NICE

Red flags for lower GI cancers: Gastrointestinal tract (lower) cancers - recognition and referral | Health topics A to Z | CKS | NICE

Abdominal examination:

Abdominal Examination - OSCE Guide | Geeky Medics