Work Smart

Question 1 of 50

A 30-year-old Caucasian male presents with a six month history of weight loss, abdominal pain, and diarrhoea. On examination you note finger clubbing.

Which of the following diagnoses is least likely?

(Please select 1 option)

◉	Coeliac disease Incorrect answer selected
○	Crohn's disease
○	Ileo-caecal TB This is the correct answer
○	Ulcerative colitis
○	Whipple's disease

Ileo-caecal TB is the only condition mentioned not associated with clubbing and would be very rare in a young Caucasian in the United Kingdom.

Next question | Go to summary

Answer Statistics

1 21%

Work Smart

Exam Themes September 2010

Question 2 of 50

A 26-year-old presents in the first trimester of her first pregnancy (six weeks gestation) for an antenatal check; she feels well.

Blood tests show a bilirubin of 40 µmol/L (1-22). The other LFTs are completely normal.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Cholestasis of pregnancy
○	Dubin-Johnson syndrome (DJS)
○	Gilbert's syndrome This is the correct answer
○	Primary biliary cirrhosis (PBC)
◉	Primary sclerosing cholangitis (PSC) Incorrect answer selected

Gilbert's is the most common condition causing mild isolated hyperbilirubinaemia.

PBC and PSC are much less common conditions and are almost always associated with a rise in the other liver function tests, particularly alkaline phosphatase (ALP) and gammaglutamyltransferase GGT).

DJS is much less common than Gilbert's.

Intrahepatic cholestasis of pregnancy is relatively common but usually occurs in the second or third trimester; ALP is usually high, risk increases with multiparity.

Work Smart

Exam Themes September 2010

Question 2 of 50

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○	Dubin-Johnson syndrome (DJS)
○	Gilbert's syndrome
○	Primary biliary cirrhosis (PBC)
○	Primary sclerosing cholangitis (PSC)

Please select 1 option

Submit answer | Skip question | Go to summary

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Question 1 of 185

Ten individuals are admitted to the Emergency Department with profuse vomiting after attending a retirement dinner in a Chinese restaurant.

They all ate at roughly 7 pm and became ill at roughly midnight. Nine ate a mixture of meat and rice dishes, except one female who ate vegetarian dishes with her rice.

Which is the most likely infective organism?

(Please select 1 option)

○	*Bacillus cereus* This is the correct answer
○	*Clostridium perfringens*
○	*E. Coli*
○	*Salmonella enteriditis*
◉	*Staphylococcus aureus* Incorrect answer selected

This is a typical case of *Bacillus cereus*, with profuse vomiting which occurs approximately one to five hours after eating.

In this case, it is likely that the rice had been infected.

Another possibility is *Staph. aureus* although this is less likely.

Work Smart

Question 2 of 185

Which of the following is correct regarding reflux of gastric contents into the oesophagus?

(Please select 1 option)

○	Can be excluded by a normal appearance at endoscopy
◉	Can be improved by *Helicobacter pylori* eradication Incorrect answer selected
○	Is a cause of asthma
○	Is neutralised by bicarbonate secreted by the oesophageal mucosa
○	Occurs during transient relaxation of the lower oesophageal sphincter This is the correct answer

Diagnosis is based predominantly on history, with a proportion of patients with reflux disease having a normal endoscopy.

H. pylori eradication is indicated in long term healing of gastric and duodenal ulceration, but not reflux disease.

Whilst it is true the oesophageus secretes bicarbonate, the statement here is not true. It is a fairly weak defence and is not able to neutralise any gastric contents which reflux up the oesophagus. More effective Brunner's glands which secrete alkaline mucus are found in the duodenum.

The link between asthma and gastro-oesophageal reflux disease is a complex one, but a recent systemic review indicates that there is a significant association but there is a lack of data on the direction of causality. It is therefore not possible to conclude that GORD is a cause of asthma.

Reference:

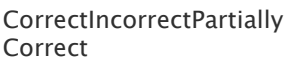
Havemann BD, et al. Gastro-oesophageal reflux. The association between gastro-oesophageal reflux disease and asthma: a systemic review. *Gut* 2007;56:1654-1664.

Next question | Go to summary

Answer Statistics

Times answered: 8421

Test Analysis



Score: 0%

Total Answered: 2

Work Smart

Question 3 of 50

Which of the following is not true of a patient with ascites due to liver cirrhosis?

(Please select 1 option)

◉	Cardiac output is often elevated Incorrect answer selected
○	Hepatic intrasinusoidal pressure is elevated
○	Spontaneous bacterial peritonitis is a recognised feature
○	The usual source of the ascitic fluid is mainly from the exudation from the surface of the liver This is the correct answer
○	Urinary sodium concentration is usually less than 10 mmol/l

Hepatocellular failure is associated with hyperdynamic circulation and systemic vasodilatation with increased vascular capacitance.

Most patients have sodium and water retention.

Next question | Go to summary

Answer Statistics

1 17%

Work Smart

Question 3 of 185

A 43-year-old male presents with weight loss and watery diarrhoea.

Investigations reveal hypokalaemia with a pancreatic mass.

Which of the following would support the diagnosis of a VIPoma?

(Please select 1 option)

○	Achlorhydria This is the correct answer
○	Hypoglycaemia
○	Increased pancreatic polypeptide
◉	Migratory erythema Incorrect answer selected
○	Pellagra

Achlorhydria is classically associated with VIPoma together with profuse diarrhoea, a hypokalaemic acidosis and hyperglycaemia.

Migratory erythema is associated with a glucagonoma.

Although raised pancreatic polypeptide is seen with a VIPoma it is unusual and is more commonly associated with its own syndrome.

Pellagra is associated with the carcinoid syndrome.

Work Smart

Question 4 of 50

Which of the following factors decrease large intestinal motility?

(Please select 1 option)

○	Anticholinergic agents This is the correct answer
○	CCK-PZ
○	Gastric distension
◉	Laxatives Incorrect answer selected
○	Parasympathetic activity

Apart from anticholinergic agents, the others including cholinergic agents increase large intestinal motility.

Next question | Go to summary

Answer Statistics

Work Smart

Question 5 of 50

A 29-year-old man presents with anaemia, bleeding tendency, diarrhoea, and abdominal pain.

Examination reveals a palpable mass in the right lower quadrant and anal skin tags.

What is the most likely underlying condition?

(Please select 1 option)

○	Chronic pancreatitis
○	Coeliac disease
○	Crohn's disease This is the correct answer
○	Intestinal lymphoma
◉	Ulcerative colitis Incorrect answer selected

Crohn's disease commonly presents with diarrhoea, abdominal pain and weight loss. It can affect the whole gastrointestinal tract, the most common being ileocolitis.

Anaemia is usually due to blood loss and less commonly B12/folate malabsorption.

An abdominal mass is often palpable in the presence of small bowel disease which can lead to Vitamin K malabsorption.

Anal tags, fissures, perianal fistulae and abscesses are associated with Crohn's disease and not ulcerative colitis.

Work Smart

Question 4 of 185

A 58-year-old man complains of tiredness, fever, weight loss, arthralgia and diarrhoea.

Jejunal biopsy reveals flattened mucosa containing periodic acid-Schiff (PAS) positive macrophages.

Which is the most likely diagnosis?

(Please select 1 option)

○	Coeliac disease
○	Parasitic infection
○	Tropical sprue
○	Tuberculosis
◉	Whipple's disease Correct

Whipple's disease is rare and most commonly affects middle-aged males.

It can affect any organ but is dominated by involvement of small bowel, causing malabsorption.

The organism (*Tropheryma whippelii*) can be identified both between and within abnormal macrophages which stain magenta with PAS.

Treatment is with prolonged antibiotics, for example, parenteral penicillin and streptomycin for two weeks, followed by one year of doxycycline.

Work Smart

Question 5 of 185

A 48-year-old woman complains of pruritus, steatorrhoea, and bruising.

On examination, she is jaundiced and pigmented, with spider naevi and hepatosplenomegaly.

Which is the most likely underlying diagnosis?

(Please select 1 option)

○	Alcoholic liver disease
○	Alpha-1 antitrypsin deficiency
○	Autoimmune hepatitis
◉	Primary biliary cirrhosis Correct
○	Wilson's disease

This woman has clinical evidence of chronic liver disease and portal hypertension.

The two main conditions causing pigmentation and chronic liver disease are primary biliary cirrhosis (PBC) and haemochromatosis.

PBC is a chronic cholestatic inflammatory liver disease, the aetiology of which is probably autoimmune. It most commonly affects middle-aged women.

There is jaundice with skin pigmentation, risk of developing oesophageal varices, and fat malabsorption leading to deficiency of the vitamins A, D, E, K (hence osteomalacia and also bruising).

Serum antimitochondrial antibody is positive in 95-99% cases.

Work Smart

Question 6 of 185

Which of the following is the most common cause of traveller's diarrhoea?

(Please select 1 option)

○	*Entamoeba histolytica*
○	*Escherichia coli* This is the correct answer
○	*Giardia lamblia*
○	*Shigella flexneri*
◉	*Yersinia enterocolitica* Incorrect answer selected

Enterotoxigenic *E coli* is the commonest cause of traveller's diarrhoea and is usually a self-limiting condition.

Usually, no treatment or investigation is required for this brief diarrhoeal illness.

Other causes that may be associated with prolonged diarrhoea include *Giardia* and amoebiasis.

Chronic diarrhoea merits investigation.

Next question | Go to summary

Answer Statistics

Work Smart

Question 6 of 50

A 40-year-old single man returned from holiday in Europe with mild bloody diarrhoea which had lasted for two weeks.

He had lost 2.5 kg in weight, had occasional lower abdominal cramping discomfort and a painful swelling of his left knee.

Which is the most likely diagnosis?

(Please select 1 option)

○	Amoebiasis
○	*Campylobacter* infection This is the correct answer
◉	Crohn's disease Incorrect answer selected
○	Gonococcal septicaemia
○	Ulcerative colitis

Campylobacter infection is one of the commonest causes of inflammatory diarrhoea. Abdominal pain is often a prominent feature of the illness frequently localising to the right iliac fossa. Diarrhoea may be mild or very severe often with passage of blood. Symptoms may last a week or longer.

Reactive arthritis and Reiter's syndrome can develop following infection with a number of enteric pathogens including *Shigella*, *Salmonella*, *Campylobacter* and *Yersinia*.

Further Reading:

Public Health England. Campylobacter: guidance, data and analysis.

Work Smart

Question 7 of 50

A 63-year-old patient with known alcohol-related cirrhosis presented with ascites, abdominal tenderness, and peripheral oedema.

A diagnostic tap revealed a neutrophil count of 400/mm^3 (<250/mm^3).

Which of the following would be of most immediate benefit?

(Please select 1 option)

○	Fluid restriction and a no added salt diet
○	Intravenous antibiotics This is the correct answer
○	Oral spironolactone
◉	Therapeutic paracentesis Incorrect answer selected
○	Trans-jugular intrahepatic porto-systemic shunt

This man has spontaneous bacterial peritonitis (SBP).

Appropriate treatment is IV antibiotics.

He is likely to have a decreased intravascular volume and require IV albumin as volume expansion.

Fluid restriction, diuretics, or large volume paracentesis are likely to cause further hypovolaemia and precipitate renal failure.

There is no stated indication for a TIPSS, indications are:

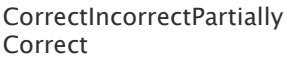
- diuretic resistant ascites
- intractable portal hypertensive bleeding, and
- hepato-renal failure.

Next question | Go to summary

Answer Statistics

Times answered: 9371

Test Analysis



Score: 0%

Total Answered: 7

Work Smart

Question 7 of 185

A 46-year-old man with a family history of haemochromatosis presented to outpatients for advice.

Investigations revealed:

Serum ferritin	453 µg/L	(15-300)
Serum iron	29 mol/L	(12-30)
Serum iron binding capacity	46 mol/L	(45-75)
Transferrin saturation	63%	(20-50)

Which is the most appropriate next step in management?

(Please select 1 option)

○	Arrange for DNA analysis This is the correct answer
○	Begin a venesection programme
○	Monitor his serum ferritin regularly
○	Take no action unless the iron saturation exceeds 90%
◉	Undertake a liver biopsy Incorrect answer selected

This man is likely to have hereditary haemochromatosis (HHC).

Haemachromatosis is caused by dysregulated iron homeostatis due to inappropriate, increased iron

absorption in the duodenum and proximal small intestine.

It is an autosomal recessive hereditary condition which is associated with homozygous C282Y mutation of the HFE gene in North Europeans.

Increased absorption of iron results in its deposition in the organs, notably the liver, pancreas, heart, joints, skin and pituitary. This causes cirrhosis, restrictive cardiomyopathy, diabetes mellitus, arthropathy, skin hyperpigmentation, and gonadal failure. Males and females are affected equally but females are often 'protected' from the clinical features by menstrual blood loss.

Arthropathy is relatively common. It is chronic and progressive and mildly inflammatory. There is a predilection for the metacarpophalangeal joints and is often accompanied by chondrocalcinosis. Iron load is probably a major determinant but it does not usually respond to venesection.

Early diagnosis and treatment are critical in haemochromatosis as survival and morbidity are improved if phlebotomy is initiated prior to the development of cirrhosis.

Transferrin saturation is suggested as the initial screening test: a level of more than 45% warrants further investigation (less than 45% usually excludes the diagnosis). Genetic screening is then performed. If the usual C282Y HFE mutation is found this makes the diagnosis.

Ferritin is measured to help guide further investigation and treatment: if more than 1000 a liver biopsy should be performed and treatment initiated. If the ferritin is within normal range and the liver function tests are normal, patients can be followed closely. If the C282Y HFE mutation is not present, other genotypes should be looked for and if present a liver biopsy is indicated.

The goal of therapy is to remove excess body iron stores; it is commonly done via phlebotomy. Initially, this is weekly or twice weekly (if tolerated) venesections of 500 cm^3 until the serum ferritin is less than 50 ng/mL. Transferritin saturation should also be reduced to less than 50% if possible. After these goals are reached maintenance therapy is typically required three to four times per year.

The diagnosis of haemachromatosis should obviously be made before you initiate such treatment. When iron overload and anaemia are present concomitantly, chelation with desferoxamine may be required. Patients should be told to avoid vitamin C supplementation as this can enhance iron toxicity.

End stage liver disease, portal hypertension, and hepatocellular carcinoma (which is increased up to 200-fold) may necessitate liver transplantation. This is associated with poorer outcome compared with other indications because of increased incidence of infection and cardiac complications.

A liver biopsy is not required to make the diagnosis of HHC although may be indicated for prognostic reasons if cirrhosis is suspected.

Next question

Go to summary

Work Smart

Question 8 of 50

A 52-year-old woman presented with history of worsening dysphagia over many years.

Recently there had been episodes of ill-defined central chest discomfort and nocturnal cough.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Achalasia This is the correct answer
○	Barrett's oesophagus
○	Motor neurone disease
◉	Oesophageal carcinoma Incorrect answer selected
○	Pharyngeal pouch

Achalasia presents most often in the third to fifth decades.

Symptoms usually develop years before the patient presents. Vague chest discomfort is common. Thirty percent have a nocturnal cough due to aspiration of oesophageal contents.

Barrett's oesophagus does not cause dysphagia.

MND causes dysphagia due to problems with chewing and initiating a swallow and would not cause chest discomfort.

Oesophageal carcinoma is very unlikely due to the duration of symptoms (years).

A pharyngeal pouch usually presents in the sixth to seventh decades with regurgitation and would not

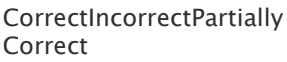
cause chest discomfort.

Next question | Go to summary

Answer Statistics

Times answered: 9109

Test Analysis



Score: 0%

Total Answered: 8

Feedback

Work Smart

Question 8 of 185

A 35-year-old woman with a history of recurrent anaemia was noted to have target cells and Howell-Jolly bodies on a blood film examination.

Investigations revealed:

Haemoglobin	70 g/L	(115-165)
MCV	77 fL	(80-96)
MCH	26.2 pg	(28-32)
Serum B12	140 µg/L	(160-760)
Red cell folate	95 µg/L	(160-640)
Serum ferritin	10 µg/L	(15-300)

Which disease-specific antibody is most likely to be present?

(Please select 1 option)

○	Anti-gastric parietal cell
○	Anti-glutamic acid decarboxylase
○	Anti-intrinsic factor
○	Anti-mitochondrial
◉	Anti-tissue transglutaminase Correct

The patient has hyposplenism as suggested by the blood film and a mixed anaemia.

Coeliac disease could, therefore, fit the above picture with anti-TTG antibodies being the most appropriate selection from the above list.

- Anti-mitochonrial antibodies are seen in PBC.
- Anti-gastric and anti-intrinsic Abs are seen in pernicious anaemia.
- Anti-GAD abs are found in auto-immune DM.

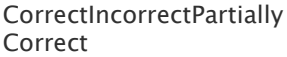
Screening for coeliac disease should include high-risk groups such as anaemia (iron or folate deficiency), hyposplenism, reduced bone density, and infertility.

Next question | Go to summary

Answer Statistics

Times answered: 9573

Test Analysis



Work Smart

Question 9 of 50

A 55-year-old man on no current treatment for his quiescent ulcerative colitis (UC) is found to have an ESR of 95 mm/hr (0-20 mm/1st hour).

Investigations show:

Haemoglobin	132 g/L	(130-180)
WCC	4.5 $\times 10^9$/L	(4-11)
Platelets	160 $\times 10^9$/L	(150-400)
Corrected calcium	2.58 mmol/L	(2.2-2.6)
IgG	25 g/L	(6-13)
IgA	1.8 g/L	(0.8-3.0)
IgM	1.6 g/L	(0.4-2.2)

What is the most appropriate next investigation?

(Please select 1 option)

○	Bone marrow trephine and aspiration
○	Isotope bone scan
○	Plasma immunoelectrophoresis This is the correct answer
◉	Rectal biopsy Incorrect answer selected

○ x Ray skeletal survey

The erythrocyte sedimentation rate (ESR) is not raised in quiescent UC. Hence there must be another reason in this case.

The only abnormal result given is a raised IgG. This suggests that myeloma is the diagnosis.

Plasma immunoelectrophoresis to look for an M band is the most appropriate next investigation.

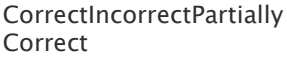
A bone marrow trephine is the definitive investigation but is traumatic and painful to the patient and so is not the next investigation of choice.

Next question | Go to summary

Answer Statistics

Times answered: 8433

Test Analysis



Work Smart

Question 9 of 185

A 32-year-old woman with Crohn's disease has a history of a right hemicolectomy for ileocolonic disease.

Since the operation, she has had frequent diarrhoea but no blood in the stools.

Investigations show:

ESR	10 mm/1st hour	(0-20)
Platelets	240 $\times 10^9$/L	(150-400)
Serum CRP	7 mg/L	(<10)

Which is the best treatment?

(Please select 1 option)

○	Cholestyramine	This is the correct answer
○	Mesalazine	
○	Metronidazole	
○	Omeprazole	
◉	Prednisolone	Incorrect answer selected

The ESR, CRP and platelet counts are not raised, indicating that this patient's symptoms are not due to active Crohn's.

Also, the diarrhoea is not bloody which goes against active Crohn's colitis.

Hence mesalazine or prednisolone would not be effective here.

Metronidazole is typically given for peri-anal disease.

The history includes a previous right hemicolectomy for ileocolonic disease.

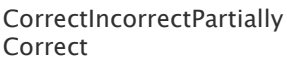
Loss of the terminal ileum frequently leads to bile salt malabsorption and treatment with the bile salt chelator cholestyramine quickly relieves the problem.

Next question | Go to summary

Answer Statistics

Times answered: 8688

Test Analysis



Score: 33.33%

Work Smart

Question 10 of 185

A 40-year-old man has a history of left-sided Crohn's colitis.

Although previously treated with steroids and mesalazine, he has had several relapses in the past year. The last relapse, treated with high doses of steroids, was complicated by gastric bleeding.

Investigations show:

Haemoglobin	108 g/L	(130-180)
MCV	76 fL	(80-96)
MCH	24 pg	(28-32)
White cell count	10 $\times 10^9$/L	(4-11)
Platelets	400 $\times 10^9$/L	(150-400)
Serum total protein	70 g/L	(61-76)
Serum albumin	30 g/L	(37-49)
Serum CRP	30 mg/L	(<10)

Abdominal x ray is normal.

Which of the following is the most appropriate management?

(Please select 1 option)

○	A trial of oral metronidazole for three months.
○	Total colectomy with ileostomy construction.

○	Total colectomy with pouch construction.
○	Treatment with azathioprine. □ This is the correct answer
⊙	Treatment with oral budesonide. □ Incorrect answer selected

This patient has all the hallmarks of active Crohn's colitis that is failing to settle with first-line medical therapy.

The next step is a trial of azathioprine which is used as a steroid-sparing agent. This is particularly relevant to this particular patient as he has had a serious side effect from previous steroid treatment.

Metronidazole is rarely effective in the treatment of active Crohn's colitis.

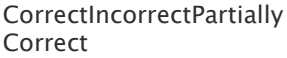
Given that Crohn's disease can recur following surgery, an operation should not be embarked upon without first a trial of the second line medical therapies such as azathioprine, its metabolite 5-mercaptopurine, or infliximab.

Next question | Go to summary

Answer Statistics

Times answered: 8656

Test Analysis



Work Smart

Question 11 of 185

A 24-year-old woman was referred with tiredness and intermittent bloody diarrhoea and a past history of cerebral venous thrombosis.

On examination, the sclera of the right eye was inflamed and multiple mouth ulcers were noted. At the colonoscopy, which confirmed colitis, two large vulval ulcers were noted.

Which is the most likely diagnosis?

(Please select 1 option)

○	Behçet's disease This is the correct answer
○	Crohn's disease
○	HIV infection
○	Syphilis
◉	Ulcerative colitis Incorrect answer selected

This is a classical description of the presentation of Behçet's, with oral and genital ulceration, colitis and scleritis.

Next question | Go to summary

Work Smart

Question 11 of 185

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(Please select 1 option)

○	Behçet's disease
○	Crohn's disease
○	HIV infection
○	Syphilis
○	Ulcerative colitis

Submit answer | Skip question | Go to summary

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Exam Themes May 2002

Question 12 of 185

A 54-year-old woman presented with an 18-month history of chest pain and dysphagia for both solids and liquids.

She smokes 20 cigarettes per day and drinks 16 units of alcohol per week.

Clinical examination was normal.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Achalasia This is the correct answer
○	Bronchial neoplasm
○	Oesophageal neoplasm
○	Oesophageal web
◉	Pharyngeal pouch Incorrect answer selected

A longstanding history of dysphagia to both solids and liquids suggests a functional rather than mechanical cause for the dysphagia.

This patient has dysphagia to both liquids and solids. This pattern of dysphagia is usually suggestive of a motility disorder rather than an obstructive issue. Obstructive causes tend to cause progressive symptoms and a bronchial carcinoma large enough to cause significant oesophageal compression is likely to be so advanced that 18-month survival without treatment and no other additional symptoms would be a rarity.

Dysphagia as a function of extrinsic compression of any source, but particularly due to a large bronchial Ca is comparatively rare compared to oesophageal causes. Hence a neoplasm or other obstructive lesion is unlikely.

Chest pain is not a typical feature of a pharyngeal pouch.

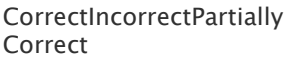
Achalasia, in which there is failure of oesophageal peristalsis and of relaxation of the lower oesophageal sphincter, typically causes the symptoms described above.

Next question | Go to summary

Answer Statistics

Times answered: 8921

Test Analysis



Score: 25%

Work Smart

Question 13 of 185

A 45-year-old woman is diagnosed with a duodenal ulcer.

Which one of the following is the most sensitive test for detecting current infection with *Helicobacter pylori*?

(Please select 1 option)

○	Culture of a gastric biopsy
○	Gastric fundal biopsy
○	Presence of *Helicobacter pylori* serum antibodies
○	The (^{13}C) urea breath test This is the correct answer
◉	Urease test on gastric biopsy Incorrect answer selected

The reference standard for diagnosis of *H. pylori* when evaluating methods of diagnosing infection is typically culture of a gastric biopsy. Yet this test has an estimated sensitivity of only 72%.

The rapid urease test on a biopsy is 80-95% sensitive and 95-100% specific. Histology is 80-90% sensitive and 95% specific.

The urease breath test is approximately 95% sensitive and 98-100% specific. Therefore, the most specific and clinically applicable test would be the urease breath test.

The presence of IgG antibodies to *H. pylori* could indicate previous infection.

A gastric antral biopsy can give false negative results following PPI treatment.

Work Smart

Question 10 of 50

A 52-year-old man with a childhood diagnosis of coeliac disease had been asymptomatic despite poor dietary compliance.

He presents with a one-month history of intermittent, colicky abdominal pain, 3 kilogram weight loss and the passage of altered blood per rectum.

Which of the following is the most appropriate investigation?

(Please select 1 option)

○	Anti-endomysial antibody
○	Colonoscopy This is the correct answer
○	CT scan of abdomen
◉	Distal duodenal biopsy Incorrect answer selected
○	Small bowel enema

New-onset weight loss with rectal bleeding and abdominal pain in a 52-year-old man must be assumed to be colonic carcinoma until proven otherwise.

Colonoscopy is the best way to check for this and would also demonstrate inflammatory bowel disease if present. A negative colonoscopy would prompt evaluation of the small bowel with CT or MR enterography given the history of coeliac disease, likely in combination with upper GI endoscopy.

Small bowel malignancies, particularly lymphomas, are more common in those with coeliac disease and would be a potential consideration here. Risk is increased in those not adhering to a gluten-free

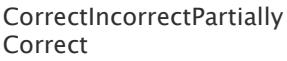
diet (GFD) or with poor mucosal healing on a GFD. That said, they are still very rare and many (40-50%) are diagnosed simultaneously with coeliac disease.

Next question | Go to summary

Answer Statistics

Times answered: 8460

Test Analysis



Score: 0%

Total Answered: 10

Feedback

Work Smart

Question 14 of 185

A 36-year-old man presented with a three-day history of bloody diarrhoea.

He was apyrexial and mildly icteric.

Investigations revealed:

Haemoglobin	105 g/L	(130-180)
White cell count	19 $\times 10^9$/L	(4-11)
Platelets	70 $\times 10^9$/L	(150-400)
Serum urea	12.5 mmol/L	(2.5-7.5)
Serum aspartate aminotransferase	90 U/L	(1-31)
Prothrombin time	12 s	(11.5-15.5)
Blood film	Fragmented red cells	

Which of the following is the most likely cause of his illness?

(Please select 1 option)

○	*Escherichia coli* 0157 colitis This is the correct answer
◉	Ischaemic colitis Incorrect answer selected
○	Leptospirosis
○	*Salmonella* enterocolitis

○ Ulcerative colitis

The presence of thrombocytopenia and evidence of haemolysis in association with bloody diarrhoea should make you think of haemolytic uraemic syndrome (HUS).

HUS is the triad of:

- microangiopathic haemolytic anaemia
- thrombocytopenia, and
- acute kidney injury.

It is classically associated with *Escherichia coli* O157:H7, which produces a Shiga verotoxin.

Approximately 15% of cases with *Escherichia coli* O157 will develop HUS. It can occur up to two weeks following the initial onset of symptoms and can present after recovery from the acute illness. The incubation period of *Escherichia coli* O157 is one to six days. HIV, *Streptococcus pneumoniae*, *Shigella dysenteriae* and Coxsackie virus can also result in HUS, but much less commonly.

The verotoxin circulates and binds to endothelial receptors, particularly in the kidney, gastrointestinal tract and central nervous system, resulting in the deposition of thrombin and fibrin in the microvasculature. Haemolysis subsequently occurs as erythrocytes travel through the affected vessels. Platelets are sequestered resulting in lower circulating numbers.

Treatment for HUS is primarily supportive with fluid and electrolyte management, antihypertensive therapy and dialysis where required.

Plasma exchange can also be used to try to remove the circulating toxin.

Further Reading:

Patient.info. Haemolytic Uraemic Syndrome.

Next question | Go to summary

Answer Statistics

Work Smart

Question 11 of 50

A 44-year-old male with Child's grade C cirrhosis presented with haematemesis.

Which one of the following drugs, administered intravenously, would be the most appropriate immediate treatment?

(Please select 1 option)

○	Isosorbide dinitrate
○	Omeprazole
○	Propranolol
◉	Terlipressin Correct
○	Tranexamic acid

The suggestion is that this patient is at particularly high risk of oesophageal varices.

Child's classification of cirrhosis is a points scale, based upon ascites/bilirubin, etc, reflecting prognosis. The grades depend on the points scored from A-C, with C reflecting greatest risk.

Terlipressin is a splanchnic vasoconstrictor and acts to reduce portal pressures and has been demonstrated to be effective at controlling variceal bleeding in the acute setting. Patients presenting with upper GI haemorrhage who have stigmata of chronic liver disease should be administered terlipressin prior to endoscopy (providing there are no contraindications).

Beta blockers can be used as oral prophylaxis for oesophageal varices.

Intravenous omeprazole has a role in reducing rebleeding and mortality in patients with stigmata of

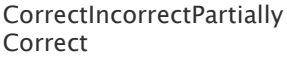
recent haemorrhage who undergo therapeutic endoscopy. The evidence base for its use is predominantly in bleeding from peptic ulcers rather than varices.

Next question | Go to summary

Answer Statistics

Times answered: 9887

Test Analysis



Score: 9.09%

Total Answered: 11

Feedback

Work Smart

Question 12 of 50

A 35-year-old woman with alcoholic cirrhosis is admitted with deteriorating encephalopathy and abdominal discomfort. An ascitic tap revealed a polymorphonuclear cell count of 350 cells per mm^3.

Which of the following is the most appropriate therapy?

(Please select 1 option)

○	Intravenous amoxicillin
○	Intravenous cefotaxime This is the correct answer
○	Intravenous metronidazole
○	Oral neomycin
◉	Oral norfloxacin Incorrect answer selected

This lady has spontaneous bacterial peritonitis as suggested by the typical history, ascites and raised polymorphonuclear count within the ascitic tap.

It is most commonly seen in alcoholic cirrhosis and the causative organisms are usually *Escherichia coli, Klebsiella*, *S. pneumoniae* or *Enterococci*. (Compare this with the mixed growth seen in other forms of peritonitis).

Sending some ascitic fluid in blood culture bottles increases the yield.

Initial treatment is with broad-spectrum antibiotics such as cefotaxime.

Norfloxacin is recommended for short-term prophylaxis.

Work Smart

Core Questions

Question 15 of 185

A 70-year-old man was admitted with pallor, light-headedness, and loss of energy. On the day prior to admission, he had reported loose dark stools.

Examination revealed a pulse of 110 per minute and a blood pressure of 91/60 mmHg.

Investigations revealed:

Haemoglobin	70 g/L	(140-180)
MCV	72 fL	(80-96)
White cell count	11.3 $\times 10^9$/L	(4-11)
Platelet count	480 $\times 10^9$/L	(150-400)

Which is the most appropriate next step in his management?

(Please select 1 option)

○	Barium meal
○	Blood transfusion This is the correct answer
○	Endoscopy
○	Parenteral iron infusion
◉	Proton pump inhibitor therapy Incorrect answer selected

There is only one answer here and that is blood transfusion.

He has clearly had a major gastrointestinal (GI) bleed since he presents with symptoms of shock with a high resting heart rate and low blood pressure the day after what sounds like melaena. In addition, he has a significant microcytic anaemia.

He should be resuscitated with blood transfusion and then sent for upper GI endoscopy.

A barium meal will not help a bleeding vessel.

Parenteral iron is for chronic anaemia not acute bleeds.

Proton pump inhibitors, although widely used, have no supportive evidence and are nowhere near as important as giving blood to this man.

Next question | Go to summary

Answer Statistics

Test Analysis

CorrectIncorrectPartially Correct

Score: 20%

Total Answered: 15

Work Smart

Question 16 of 185

Which of the following statements is correct of hepatitis C virus infection?

(Please select 1 option)

○	Cell cultures of virus are routinely used to assess response to drug therapy
○	Fewer than 5% of cases lead to chronic infection
○	High antibody titres are an indication for therapy
○	More likely to be transmitted by the sexual route than hepatitis B virus
◉	Treatment with ribavirin and interferon alpha is more effective than interferon alpha alone Correct

In hepatitis C infection, the criteria for treatment are abnormal liver function tests and detectable hepatitis C RNA in plasma, with evidence of moderate inflammation on liver biopsy.

Response to therapy is determined by normalisation of hepatic transaminases and undetectability of hepatitis C RNA in plasma.

Hepatitis C is generally transmitted by inoculation or vertically from mother to child. In contrast to hepatitis B, sexual transmission is uncommon.

Around 85% of acute hepatitis C infections lead to chronic infection.

Treatment with interferon alpha alone has around a 10-15% success rate in achieving long term undetectability of plasma hepatitis C RNA. Combination treatment with ribavirin and interferon alpha has been found to have approximately a 45% success rate.

Work Smart

Question 17 of 185

A 68-year-old male presents with alcoholic cirrhosis complicated by mild ascites.

Which of the following features is likely in this patient?

(Please select 1 option)

○	Increased serum sodium
○	Increased vascular resistance
○	Reduced renin concentrations
○	Reduced urinary potassium excretion
◉	Reduced urinary sodium excretion Correct

Patients with cirrhosis are frequently hyponatraemic. This is a function of an inability to excrete free water (increased ADH levels and systemic vasodilation contribute, but the underlying mechanism is complex and not entirely understood).

Secondary hyperaldosteronism will result in total body sodium overload but not necessarily hypernatraemia. Remember that the sodium level is a concentration, therefore if the amount of solvent (water) is increased then it will not necessarily rise.

The development of ascites is related to this process but is not the cause of dilution.

There is decreased vascular resistance, increased plasma volume and low serum sodium.

Work Smart

Question 18 of 185

Which of the following concerning the conjugation of bilirubin is correct?

(Please select 1 option)

○	It is catalysed by a glucuronyl transferase	This is the correct answer
○	It is impaired in Dubin-Johnson syndrome	
○	It is increased by valproate	
○	It is inhibited by rifampicin	
◉	It occurs in the Kupfer cells of the liver	Incorrect answer selected

In Dubin-Johnson syndrome, conjugation is normal, but excretion from the hepatocyte into the bile is impaired, resulting in a conjugated bilirubinaemia.

Sodium valproate is an enzyme inhibitor.

Rifampicin is an enzyme inducer.

Bilirubin is conjugated in the hepatocytes.

In both Gilbert's and Crigler-Najjar syndrome, there is an impairment of UDP glucuronosyltransferase. In Crigler-Najjar levels are extremely low (undetectable in type 1 and <10% in type 2), whereas in Gilbert's levels are less significantly reduced. Both are associated with an unconjugated bilirubinaemia.

Work Smart

Question 19 of 185

A 28-year-old male presents with a four-day history of profuse bloody diarrhoea after returning from a holiday in the Far East.

Which of the following regarding his illness is true?

(Please select 1 option)

○	A negative amoebic fluorescent antibody test excludes a diagnosis of acute amoebic dysentry
○	Cysts to *E. histolytica* in the stools are only seen in acute amoebic dysentry
○	Cholera is a likely diagnosis
◉	Giardiasis is a likely diagnosis Incorrect answer selected
○	Shigellosis is a likely diagnosis This is the correct answer

Shigellosis is a possible cause of profuse bloody diarrhoea as cholera and giardiasis are associated with watery diarrhoea.

Trophozoites and cysts are seen in acute amoebic dysentery, however, cysts may also be excreted in asymptomatic carrier states.

Next question | Go to summary

Work Smart

Exam Themes January 2001

Question 20 of 185

Which of the following is activated by cholera toxin?

(Please select 1 option)

○	Adenylate cyclase This is the correct answer
○	Guanylate cyclase
○	Peroxisome proliferator receptor (PPAR) gamma
○	Sodium/potassium ATPase
◉	The glucose-sodium transporter Incorrect answer selected

Cholera toxin activates adenylate cyclase with generation of cyclic adenosine monophosphate (cAMP).

Next question | Go to summary

Answer Statistics

Work Smart

Exam Themes May 2001

Question 21 of 185

Which of the following statements regarding colon cancer is correct?

(Please select 1 option)

○	In familial cases the inheritance pattern is typically autosomal recessive
○	In familial polyposis coli, the increased cancer risk is due to inheritance of a mutated tumour suppressor gene This is the correct answer
○	In non-familial cases, gene mutations in the cancerous cells are unusual
○	It is a characteristic feature of the Peutz-Jegher syndrome
◉	It occurs most commonly in the ascending colon Incorrect answer selected

Both familial polyposis coli and Gardner's syndrome are autosomal dominant.

An allelic deletion of a putative tumour suppressor gene located 5q21-q22, familial adenomatous polyposis (FAP) is an autosomal dominant disorder causing extensive adenomatous polyps of the colon and early onset colorectal cancer.

Quantitative and qualitative alterations in gene expression accumulate in colorectal cancer cells. These include alterations of pro-oncogene expression and chromosomal abnormalities (deletions at 17p and 18q are seen in 70% of colorectal carcinomas).

Peutz-Jegher's syndrome is dominantly inherited pigmentation of skin and mucous membranes and hamartomatous polyps in the stomach and larger intestine. The polyps only rarely undergo malignant change.

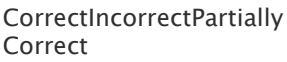
The rectum and sigmoid colon are the commonest sites, not the ascending colon.

Next question | Go to summary

Answer Statistics

Times answered: 8639

Test Analysis



Score: 23.81%

Total Answered: 21

Feedback

Work Smart

Question 22 of 185

Which of the following is true concerning a hepatitis E infection?

(Please select 1 option)

○	CT scan of the liver with contrast shows diagnostic appearances
○	It can be transmitted with hepatitis B
○	It is a recognised cause of chronic liver disease
◉	Prolonged shedding is uncommon Correct
○	The incidence of chronic liver disease is reduced by administration of alpha interferon

"In general, hepatitis E is a self-limiting viral infection followed by recovery. Prolonged viraemia or faecal shedding are unusual and chronic infection does not occur."[1]

Reference:

1. World Health Organization (WHO). Hepatitis E (Fact sheet N°280).

Next question | Go to summary

Answer Statistics

Work Smart

Question 23 of 185

Which of the following statements is characteristic of acute hepatitis B infection?

(Please select 1 option)

○	It commonly presents with distal joint arthritis
○	It confers immunity to hepatitis A
◉	Most patients present with splenomegaly Incorrect answer selected
○	Pruritus is an important early symptom
○	There is increased infectivity in the presence of the hep B e-antigen This is the correct answer

Those with hepatitis B are most likely to be asymptomatic.

Symptomatic individuals may present with:

- lethargy
- anorexia
- arthralgia
- rash (any type)
- papular acrodermatitis (Gianotti-Crosti)
- polyarthritis
- glomerulonephritis, and
- aplastic anaemia.

Twenty five per cent have jaundice.

Complications include:

- acute fulminent hepatitis
- chronic hepatitis, and
- membranous glomerulonephritis.

Hepatitis B e-antigen is present in the acute phase and indicates a highly infectious state.

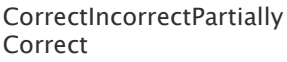
Pruritus is characteristic of chronic hepatitis.

Next question | Go to summary

Answer Statistics

Times answered: 9218

Test Analysis



Work Smart

Question 24 of 185

In the diarrhoea associated with cholera toxin, there is activation of which of the following enzyme systems?

(Please select 1 option)

○	Adenylate cyclase This is the correct answer
◉	ATP Incorrect answer selected
○	Guanylate cyclase
○	Na-glucose co-transporter
○	Na+/K+ ATPase pump

Cholera toxin has two parts, A and B.

B binds while A activates G protein, which activates adenylate cyclase.

Elevated cyclic adenosine monophosphate (CAMP) results in unrestricted chloride secretion from villous crypts.

Next question | Go to summary

Answer Statistics

Work Smart

Question 25 of 185

A 24-year-old man with chronic diarrhoea and malabsorption is suspected of having coeliac disease.

A jejunal biopsy is taken.

Which of the following findings would be expected in coeliac disease?

(Please select 1 option)

○	Appearances may resemble severe tropical sprue This is the correct answer
○	Characteristically shows epithelial cells distended with fat globules
○	Shows fissures penetrating into the submucosa
○	Shows flattening of the crypts
◉	Shows leaf-shaped villi Incorrect answer selected

In coeliac disease, the villi are shortened and the crypts lengthened with increased lymphocytic infiltrate.

Tropical sprue may also cause subtotal villous atrophy. Fissures are not found and epithelial cells are normal.

Next question | Go to summary

Work Smart

Question 26 of 185

A routine ultrasound at 18 weeks' gestation in a diabetic mother reveals a male fetus with an endocardial cushion defect.

Other abnormalities include increased nuchal thickening and a 'double bubble' sign.

Which of the following conditions is most likely to have contributed to this set of findings?

(Please select 1 option)

○	Congenital syphilis
○	Marfan's syndrome
○	Maternal folate deficiency
○	Maternal use of ACE inhibitor
◉	Trisomy 21 Correct

Diabetic mothers are more likely to have children with congenital abnormalities depending on preconception, and first-trimester blood sugar control.

Forty percent of Down's syndrome babies have atrioventricular septal defects, as in this fetus.

The double bubble sign suggests duodenal atresia, which again suggests Down's syndrome.

Gastrointestinal (GI) malformations occur in 6% of Down's patients, most commonly duodenal atresia and Hirschsprung's disease.

Work Smart

Question 13 of 50

Which of the following is correct regarding infection with *Salmonella typhi*?

(Please select 1 option)

○	Children are particularly likely to become carriers
◉	Faecal culture is almost always positive during the first week of illness Incorrect answer selected
○	Most carriers are female This is the correct answer
○	Relapse does not occur if antibiotics are taken for two weeks
○	Vaccinated individuals who develop the disease will have a mild illness

Children are rarely chronic carriers of the organism although for some unknown reason females are more commonly long term carriers than males (remember Typhoid Mary).

Faecal culture is positive in only 50% of cases during the first week of illness.

The gallbladder may act as a reservoir of infection and cause relapse in individuals treated with antibiotics. Cholecystectomy may be indicated.

Vaccinated individuals who develop the disease will have a higher threshold but the same disease.

Next question Go to summary

Work Smart

Question 27 of 185

Which of the following is true of Spontaneous bacterial peritonitis?

(Please select 1 option)

○	A survival rate of over 50% is expected at one year
○	Gentamicin is the treatment of choice
○	Is characteristically caused by aerobic bacteria This is the correct answer
◉	Is diagnosed by culture of ascitic fluid Incorrect answer selected
○	Is due to intestinal perforation

SBP is a frequent complication of the ascites of cirrhosis. It is diagnosed by ascitic fluid examination which reveals a PMN count of >250/ml. SBP has poor prognostic significance with a one-year survival after a diagnosis of between 30-50%. It is, as the name suggests a spontaneous event that is not a consequence of intestinal perforation.

It is speculated that the infective organism may leak into the ascitic fluid via the blood or from intestinal overgrowth. Organisms should be cultured by directly collecting into blood culture bottles. It is typically caused by aerobic gram-negative bacteria. Hence, antibiotics such as co-amoxiclav, tazoscin, or ciprofloxacin are typically used as first line treatment.

E. coli and *Klebsiella* should be considered aerobic organisms. They are more precisely defined as facultative anaerobes, that is to say, they reproduce best in aerobic conditions but can also reproduce in anaerobic conditions. Obligate anaerobes (e.g. Clostridia) are killed by the presence of oxygen as opposed to aerotolerant anaerobes (e.g. *Lactobacillus*) which have exclusively fermentative

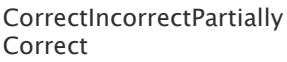
(anaerobic) metabolism but are not sensitive to the presence of oxygen.

Next question | Go to summary

Answer Statistics

Times answered: 9042

Test Analysis



Score: 25.93%

Total Answered: 27

Feedback

Work Smart

Question 28 of 185

Which of the following statements is true of autoimmune hepatitis?

(Please select 1 option)

○	It is associated with hypogammaglobulinaemia
○	It may be associated with keratoconjunctivitis sicca This is the correct answer
○	It rarely interferes with menstruation except in later stages
○	It rarely presents before 20 years of age
◉	It usually presents as an acute hepatitis Incorrect answer selected

It occurs frequently in young (10-20 years) and middle-aged women.

Twenty-five percent present as acute hepatitis but usually the onset is insidious. Some may be asymptomatic for years and then are found to have signs of chronic liver disease.

Amenorrhoea is common. It is associated with hyperglobulinaemia and other autoimmmune disease.

Sixty percent are associated with HLA-B8, DR3 and Dw3.

The sicca syndrome (xerostomia/dry eyes, keratoconjunctivitis sicca) may occur.

Next question | Go to summary

Work Smart

Question 29 of 185

Which single statement is true regarding the treatment of iron deficiency anaemia?

(Please select 1 option)

○	Absorption of iron is increased by ascorbic acid This is the correct answer
○	Ferrous sulphate 200 mg has less elemental iron than the same dose of ferrous gluconate
○	Iron is absorbed in the distal jejunum
◉	Parenteral iron is indicated when the anaemia responds slowly to oral iron Incorrect answer selected
○	Sustained release iron is a useful way of giving larger doses

Absorption of oral iron is improved by ascorbic acid.

Ferrous sulphate has more elemental iron by mass.

Iron is absorbed in the upper small intestine.

Parenteral iron acts no faster than oral iron. It is indicated when oral iron cannot be tolerated or is not absorbed.

Sustained-release preparations may improve tolerance of oral iron but do not aid absorption.

Next question | Go to summary

Work Smart

Question 30 of 185

A 28-year-old lady develops abdominal pain, jaundice and ascites worsening over a week.

She drinks ten units of alcohol each week and takes the oral contraceptive pill.

Which of the following findings would make a diagnosis of hepatic vein thrombosis (Budd-Chiari syndrome [BCS]) most likely?

(Please select 1 option)

○	Acute liver failure
○	Alanine aminotransferase (ALT) of 345 U/L (5 - 35)
○	Ankle oedema
◉	Ascites fluid protein of 38 g/L Incorrect answer selected
○	Tender enlarged liver This is the correct answer

The most common causes of an acute severe liver injury in a young woman are:

- viruses (including hepatitis A virus [HAV], hepatitis B virus [HBV])
- drugs (particularly paracetamol overdose)
- autoimmune hepatitis
- hepatic vein thrombosis (often precipitated by pregnancy or oral contraceptive pill [OCP] use).

The presence of liver failure, ankle oedema, and an exudative ascites do not help differentiate between these aetiologies.

The ALT of 345 is moderately elevated and compatible with BCS. With viral or drug-related hepatitis, the peak ALT is usually much higher than this; the ALT may already be on the way down if she has had symptoms for a week.

Tender hepatomegaly is one of the hallmarks of BCS.

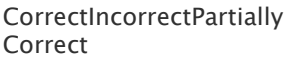
In acute severe viral, autoimmune or drug/toxin related liver disease the necrotic liver decreases in size.

Next question | Go to summary

Answer Statistics

Times answered: 8934

Test Analysis



Score: 23.33%

Work Smart

Question 31 of 185

A 60-year-old woman with known alcoholic liver cirrhosis presents with vague abdominal pains, malaise and nausea.

She has been abstinent since she was diagnosed eight months ago.

On examination, she had moderate ascites and mild, generalised abdominal tenderness.

Investigations reveal:

Haemoglobin	112 g/L	(115-165)
WCC	15 $\times 10^9$/L	(4-11)
Prothrombin time	21 secs	(11.5-15.5)
Serum albumin	28 g/L	(37-49)
Serum total bilirubin	56 µmol/L	(1-22)
Ascitic fluid albumin	14 g/L	-
Ascitic fluid amylase	Normal	-
Ascitic fluid white cell count	500 $\times 10^9$/L	-

What is the most likely reason for her current problem?

(Please select 1 option)

○	Hepatic vein thrombosis
⊙	Pancreatic pseudocyst rupture Incorrect answer selected

○	Portal vein thrombosis
○	Primary liver cancer
○	Spontaneous bacterial peritonitis This is the correct answer

The high white cell count in the ascites makes spontaneous bacterial peritonitis (SBP) much more likely than Budd- Chiari syndrome (BCS), PVT, HCC, or a ruptured pancreatic pseudocyst.

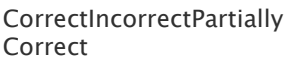
Abdominal pain is often only mild, or even absent in SBP, with patients often presenting with otherwise unexplained hepatic decompensation.

Next question | Go to summary

Answer Statistics

Times answered: 9840

Test Analysis



Work Smart

Question 32 of 185

A 56-year-old man from Thailand presented with abdominal pain and a mass in the right upper quadrant. He reported that he had been diagnosed with viral hepatitis several years previously.

Investigations showed:

Serum alpha-fetoprotein	13,500 IU/L	(< 10)

Which of the following is the most likely underlying viral infection?

(Please select 1 option)

○	Hepatitis A virus	
○	Hepatitis B virus	This is the correct answer
○	Hepatitis C virus	
◉	Hepatitis D virus	Incorrect answer selected
○	Hepatitis E virus	

The patient has chronic viral hepatitis and presents with an AFP elevated to such a degree that it is essentially diagnostic for hepatoma. The underlying cause is either HBV or HCV.

Since his country of origin is the only other detail given here this gives a clue to the cause of his hepatitis. There is a higher prevalence of HBV in the Far East, consequently, the most likely viral agent is HBV.

Work Smart

Question 33 of 185

Which of the following statements regarding the genetic and immunological basis of coeliac disease is correct?

(Please select 1 option)

○	50% of patients are HLA-DQ 2 or HLA-DQ 8 positive
○	Alpha-gliadin specific CD8 cells can be identified in the intestinal wall of untreated patients with coeliac disease
○	Cow's milk proteins may precipitate an immune-related enteropathy indistinguishable from coeliac disease
○	Tissue transglutaminase generates the antigenic epitopes present in alpha-gliadin This is the correct answer
◉	TNF-alpha plays a critical role in the inflammatory response in the intestinal wall of patients with untreated coeliac disease Incorrect answer selected

The prevalence of coeliac disease is 1% in western societies and is thus one of the commonest immune-mediated diseases.

It arises as a result of genetic predisposition (at least 95% of patients are HLA-DQ2 or HLA-DQ8 positive) and also from the specific immune response to the alpha-gliadin component of gluten.

Cow's milk can produce an immunologically mediated enteropathy but the condition is rare and transient.

The action of tissue transglutaminase on alpha-gliadin generates epitopes to CD4+ T-lymphocytes,

which provoke an inflammatory response in the intestinal wall.

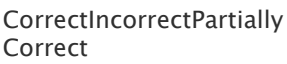
In untreated individuals, alpha-gliadin specific CD4+ T cells can be found producing interferon-gamma in the intestinal wall.

Next question | Go to summary

Answer Statistics

Times answered: 9123

Test Analysis



Score: 21.21%

Total Answered: 33

Work Smart

Question 34 of 185

A 65-year-old man is referred with abnormal liver function and undergoes a liver biopsy.

Which of the following count against hepatic cirrhosis?

(Please select 1 option)

○	Fibrous septa formation
○	Granuloma formation This is the correct answer
○	Liver cell necrosis
◉	Nodular regeneration Incorrect answer selected
○	Subendothelial fibrosis

Granuloma formation is not classically seen in cirrhosis, which can be micro- or macronodular in type.

In the micronodular form, the nodules are less than 3 mm across with uniform liver involvement - seen in alcohol or biliary disease.

In the macronodular form, there are larger nodules, classically seen in chronic viral hepatitis.

Further Reading:

1. Loyola University Chicago, Stritch School of Medicine. Liver Cirrhosis.
2. University of Connecticut Health Center. Cirrhosis of the Liver.

Work Smart

Question 35 of 185

A 29-year-old male presents with symptoms of severe gastro-oesophageal reflux.

Which one of the following is most useful in assessing the role of surgery?

(Please select 1 option)

○	Cardiac sphincter manometry
○	Gastric emptying study
○	Intragastric pH monitoring off therapy
○	Oesophageal motility and pH study This is the correct answer
◉	Water soluble contrast swallow study Incorrect answer selected

Laparoscopic fundoplication is the treatment of choice for patients with GORD refractory to, or intolerant of, proton pump inhibitor therapy.

The patient should have had an endoscopy within the six months prior to surgery to exclude any unsuspected pathology such as Barrett's oesophagus or adenocarcinoma.

An oesophageal transit study is indicated to rule out a primary motor disorder (for example, achalasia, scleroderma) when suspected, and to rule out aperistalsis, which may result in postoperative dysphagia after some forms of fundoplication.

Work Smart

Question 36 of 185

Which one of the following organs is in direct contact with the anterior surface of the left kidney, without being separated from it by peritoneum?

(Please select 1 option)

○	Duodenum
○	Jejunum
○	Pancreas This is the correct answer
○	Spleen
◉	Stomach Incorrect answer selected

This is a basic anatomy question.

However, the only retroperitoneal structure given in the answers is the pancreas, the body of which is in direct approximation to the anterior surface of the left kidney.

The adrenal gland and colon are also in direct contact with the anterior surface of the left kidney.

Further Reading:

Gray's Anatomy of the Human Body. 3b. The Urinary Organs.

Next question | Go to summary

Work Smart

Question 37 of 185

A 65-year-old woman presented with a malabsorption syndrome.

She had a past history of radiotherapy for cervical cancer.

Small intestine biopsy reveals villous atrophy, crypt hypertrophy, and chronic inflammatory cell infiltrate of the lamina propria, together with an increase in intraepithelial lymphocytes.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Bacterial overgrowth
○	Coeliac disease This is the correct answer
○	Crohn's disease
◉	Mesenteric ischaemia Incorrect answer selected
○	Radiation enteropathy

These histological features are typical of coeliac disease with:

- villous atrophy
- crypt hyperplasia/hypertrophy
- inflammatory infiltrate of the lamina propria, and
- intra-epithelial lymphocytes.

Useful serology includes anti-TTG antibodies which would be expected in over 90% of cases.

Treatment of this case would therefore entail gluten-free diet.

Reference:

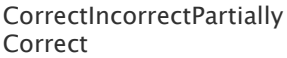
British Society of Gastroenterology. Guidelines on the diagnosis and management of adult coeliac disease.

Next question | Go to summary

Answer Statistics

Times answered: 10045

Test Analysis



Score: 18.92%

Total Answered: 37

Work Smart

Question 38 of 185

A frail, 81-year-old man was admitted with a stroke and after eight days of being nil by mouth, nasogastric feeding is commenced.

Following the commencement of feeding after previous starvation, which biochemical abnormality is the most likely cause of his drowsiness?

(Please select 1 option)

○	Hyperglycaemia
○	Hypermagnesaemia
○	Hypernatraemia
◉	Hypocalcaemia Incorrect answer selected
○	Hypophosphataemia This is the correct answer

The chronology of his presentation eight days after commencing NG feeds suggests hypophosphataemia associated with refeeding syndrome.

This is well described in elderly, frail subjects who may have prior poor nutrition in addition to any period of oral starvation.

Other electrolyte abnormalities are also described in association with NG feeds, for example, hypernatraemia, but with this briefest of histories and the eight days, hypophosphataemia is the most likely.

Work Smart

Question 39 of 185

An 80-year-old woman presents with confusion associated with a chest infection.

She received standard treatment and four days afterwards she developed green, liquid diarrhoea which shortly afterwards contained some fresh blood.

Which of the following organisms is most likely to be responsible for her diarrhoea?

(Please select 1 option)

○	*Campylobacter jejuni*
○	*Clostridium difficile* This is the correct answer
○	*Escherichia coli* 0157
◉	Methicillin-resistant *Staphylococcus aureus* Incorrect answer selected
○	Vancomycin-resistant *Enterococcus*

This is typical of *Clostridium* infection with pseudomembranous colitis induced by prior treatment with broad-spectrum antibiotics such as cefuroxime, Augmentin and the macrolides.

It is treated with oral vancomycin/metronidazole.

Next question | Go to summary

Work Smart

Question 14 of 50

A 47-year-old man presents with confusion and drowsiness.

A diagnosis of hepatic encephalopathy is suspected and treatment with lactulose is begun.

Which of the following concerning lactulose is true?

(Please select 1 option)

○	Absorbed from the gut
○	Causes hypermagnesaemia
○	Contraindicated in diabetes mellitus
○	Inhibits proliferation of ammonia-forming organisms in the gut This is the correct answer
◉	Reduces absorption of spironolactone Incorrect answer selected

Lactulose, an osmotic laxative:

- causes hypomagnesaemia associated with diarrhoea
- is not absorbed
- does not affect the absorption of spironolactone, and
- may be used in diabetics.

It is used in patients with cirrhosis/hepatic encephalopathy to limit the proliferation of ammonia-forming gut organisms and increase the clearance of protein load in the gut.

Work Smart

Question 15 of 50

Which of the following statements concerning transferrin is correct?

(Please select 1 option)

○	In the absence of anaemia, transferrin is 80% saturated with iron
○	Levels are elevated in haemochromatosis
◉	Levels are elevated in patients on the oral contraceptive pill Correct
○	Transferrin binds ferrous iron
○	Transferrin levels fall during pregnancy

Pregnancy and the oral contraceptive pill (OCP) both increase transferrin levels. Iron is carried in the blood bound to transferrin. Fe^{2+} (ferrous iron) is oxidised to Fe^{3+} (ferric iron) by caeruloplasmin to bind to transferrin which is about one-third saturated with iron.

The saturation of transferrin (plasma iron concentration/TIBC x 100) is used as a measure of iron stores. A value below 16% is indicative of iron deficiency.

The transferrin level and the TIBC rise in iron deficiency. Pregnancy and the OCP both increase transferrin levels; whereas transferrin and TIBC fall in iron overload, percentage saturation is increased in haemochromatosis.

Next question | Go to summary

Work Smart

Question 16 of 50

A 65-year-old man was investigated for weight loss and dyspepsia.

Endoscopic examination revealed an ulcerated lesion in the stomach and biopsy revealed the presence of a low-grade mucosa-associated lymphoma (MALT) with *Helicobacter pylori*.

Further investigation with CT of chest and abdomen were normal as were bone marrow aspirate and trephine.

What is the best treatment option for this patient?

(Please select 1 option)

○	Eradication therapy for *Helicobacter pylori* This is the correct answer
○	IV chemotherapy
◉	Oral chlorambucil Incorrect answer selected
○	Partial gastric resection
○	Radiotherapy

This is a gastric MALT tumour.

These are usually marginal zone B cell lymphomas and associated with an excellent prognosis.

Low-grade gastric MALT tumours associated with *Helicobacter pylori* infection respond in over 80% to *Helicobacter* eradication as the primary mode of treatment.

Radiotherapy is considered but is generally unnecessary.

Work Smart

Question 40 of 185

A 40-year-old man is referred with gastro-oesophageal reflux disease (GORD).

Which of the following concerning GORD is correct?

(Please select 1 option)

○	Acid suppressant therapy should not be given continuously
○	Endoscopy is mandatory
○	In the presence of Barrett's oesophagus, the risk of future malignancy can be assessed endoscopically without biopsy
○	Oesophageal pH monitoring is a good guide to therapy
◉	Symptoms do not correlate with mucosal status at endoscopy Correct

Symptoms of GORD do not correlate with the mucosal appearances at endoscopy.

Although endoscopy should be performed in cases that are not clear-cut or do not respond to proton pump inhibitors (PPIs), it is not mandatory.

The risk with Barrett's and hence the diagnosis of Barrett's can only be clarified with biopsy.

Monitoring of pH is not a good guide to therapy but symptomatic improvement is a good guide to the efficacy of therapy.

PPIs can be given continuously where the diagnosis has been satisfactorily proven and relapse of symptoms persist after withdrawal.

Work Smart

Question 41 of 185

A 52-year-old male presents with general deterioration.

He drinks approximately 29 units of alcohol each week and is a smoker of 5 cigarettes daily.

Examination reveals that he is jaundiced, has numerous spider naevi on his chest, and he has a temperature of 37.8°C. Abdominal examination reveals tender hepatosplenomegaly.

Investigations reveal:

Bilirubin	200 µmol/L	(1-22)
Alkaline phosphatase	550 IU/L	(45-105)
AST	258 IU/L	(1-31)
Albumin	25 g/L	(37-49)

Hepatitis B virus surface antigen positive.

Hepatitis B virus e antigen negative.

Hepatitis B virus DNA undetectable.

Which of the following is the most likely cause for his acute presentation?

(Please select 1 option)

◉	Alcoholic hepatitis Correct
○	Autoimmune chronic active hepatitis
○	Carcinoma of the pancreas

○	Chronic hepatitis B infection
○	Chronic hepatitis D (delta) infection

Tender hepatosplenomegaly and fever are consistent with a diagnosis of alcoholic hepatitis; this frequently occurs with a background of cirrhosis.

Liver function tests typically show an AST elevated greater than the ALT with at least a 2:1 ratio, transaminases are typically only slightly elevated, rarely over 300 and virtually never over 500. The alkaline phosphatase may well be significantly elevated giving the liver profile an 'obstructive' appearance.

The serology demonstrates evidence of chronic HBV infection, however, an undetectable HBV DNA load indicates that this is unlikely to be causing this acute presentation. HDV infection causes accelerated liver damage with lower HBV DNA loads however it still requires active HBV replication. Liver disease secondary to either would give rise to a 'hepatitic' rather than 'obstructive' liver panel. The same is true of autoimmune hepatitis.

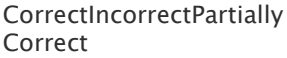
Whilst carcinoma of the head of the pancreas would cause an obstructive jaundice, it would not give rise to clinical features of chronic liver disease.

Next question | Go to summary

Answer Statistics

Times answered: 9128

Test Analysis



Work Smart

Question 42 of 185

A 60-year-old man presents with a five-day history of lower abdominal pain and diarrhoea. He has a history of chronic obstructive airways disease (COAD) and has had numerous acute infective exacerbations over the last three months.

On examination, he was dehydrated, with a temperature of 38.6°C, a blood pressure of 102/72 mmHg and has a distended, tender abdomen.

Which of the following is the most appropriate investigation for this patient?

(Please select 1 option)

○	Chest x ray
○	Plain abdominal x ray This is the correct answer
○	Sigmoidoscopy and biopsy
○	Stool microscopy
◉	Ultrasound scan of the abdomen Incorrect answer selected

This is pseudomembranous colitis due to *Clostridium difficile* secondary to antibiotic usage for his COAD.

Plain AXR is useful for diagnosing toxic dilatation and would be the investigation of choice here due to his abdominal distension. Toxic dilatation should be excluded prior to sigmoidoscopy. However, it does not establish the diagnosis.

Stool microscopy has no value but stool toxin assay is useful.

A patient with diarrhoea normally has involvement of the distal colon; rectum and sigmoidoscopy with biopsy is helpful for rapid diagnosis but should not be performed if toxic dilatation is suspected.

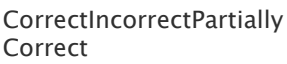
Patients with involvement of right colon usually have little or no diarrhoea.

Next question | Go to summary

Answer Statistics

Times answered: 8701

Test Analysis



Score: 21.43%

Total Answered: 42

Work Smart

Question 43 of 185

A 26-year-old woman is referred with intermittent diarrhoea, present for a couple of years.

She states that her weight has been steady but describes watery motions up to six stools per day and has also noted abdominal discomfort with bloating. She has not been aware of any blood in the motions or melaena.

She describes no other medical history and denies taking any medication.

Investigations show:

Full blood count	Normal	
Urea and electrolytes	Normal	
Albumin	39 g/L	(37-49)
Corrected calcium	2.2 mmol/L	(2.2-2.6)
Alkaline phosphatase	94 U/L	(45-105)
C-reactive protein	6 mg/L	(<10)
Prothrombin time	12 s	(11.5-15.5)

What is the most likely diagnosis?

(Please select 1 option)

○	Crohn's disease
◉	Intestinal tuberculosis Incorrect answer selected
○	

	Small bowel bacterial overgrowth
○	Laxative abuse This is the correct answer
○	Microscopic colitis

The normal albumin and C-reactive protein level count against a diagnosis of inflammatory bowel disease (Crohn's or microscopic colitis) or an infection pathology such as intestinal tuberculosis. Whilst small bowel bacterial overgrowth does not typically produce a raised C-reactive protein level it is very unusual in patients without risk factors for the condition (previous bowel surgery, Crohn's disease, motility disorders such as scleroderma).

This leaves laxative abuse as the most likely diagnosis. Laxative abuse, where not a function of chronic constipation, is usually closely linked to eating disorders (bulimia and anorexia) and as such is typically over-represented in young, female patients.

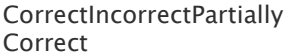
Patients may well present to medical services and be referred on to secondary care with symptoms relating to overuse of laxative agents. They may well also deny abusing any medications on initial questioning.

Next question | Go to summary

Answer Statistics

Times answered: 6616

Test Analysis



Work Smart

Core Questions

Question 44 of 185

A 55-year-old woman presents with lethargy and diarrhoea together with joint pains and intermittent fever. These symptoms have developed over the last six months during which time she has lost 6 kg in weight.

Supraclavicular lymphadenopathy is noted.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Bacillary dysentery
○	*Campylobacter* infection
○	Coeliac disease
○	Giardiasis
◉	Whipple's disease Correct

Whipple's disease is caused by *Tropheryma whippelii* and symptoms include:

- chronic diarrhoea
- arthralgia
- pyrexia, and
- lymphadenopathy.

Diagnosis is by microscopy of jejunal biopsy specimen which shows macrophages with periodic acid-

Schiff (PAS) stain positive granules.

Treatment is co-trimoxazole.

Bacillarary dysentry and *Campylobacter jejuni* infection are characterised by bloody diarrhoea and are not chronic.

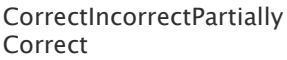
Coeliac disease and giardiasis have no lymph involvement.

Next question | Go to summary

Answer Statistics

Times answered: 9208

Test Analysis



Score: 22.73%

Total Answered: 44

Work Smart

Question 17 of 50

A 52-year-old male is admitted with haematemesis and melaena.

Examination reveals that he is icteric, confused with a flapping tremor, has signs of chronic liver disease, a pulse rate of 110 bpm, and blood pressure of 100/70 mmHg. Abdominal examination reveals ascites.

An urgent endoscopy reveals small oesophageal varices without evidence of bleeding, but an oozing portal hypertensive gastropathy.

Which of the following measures would be the most appropriate treatment for this patient?

(Please select 1 option)

○	Endoscopic banding
○	Endoscopic injection of ethanolamine
○	Intravenous terlipressin This is the correct answer
○	Intravenous vitamin K
◉	Oral propranolol Incorrect answer selected

Portal hypertensive gastropathy can result in upper gastrointestinal haemorrhage in patients with cirrhosis, specifically those with portal hypertension. It is characterised by a mosaic pattern within the stomach, usually in a proximal location. It mainly causes chronic blood loss and anaemia, but can cause acute haemorrhage.

First-line treatment for chronic haemorrhage is a non-selective beta blocker (such as propranolol) and

iron supplementation. If the bleeding or anaemia are not controlled with this, then transjugular intrahepatic portosystemic shunt (TIPS) or shunt surgery are indicated. Management of acute bleeding, as in this case, should be with a vasoactive drug (such as somatostatin or terlipressin). If the bleeding responds, the patient must be switched to a non-selective beta blocker. Shunt therapy should be considered in patients who rebleed despite adequate beta blocker therapy.

The endoscopy shows small varices with no evidence of bleeding but diffuse oozing of blood. Hence endoscopic measures like banding for small varices will not be useful.

Ethanolamine is thought to be useful in peptic ulcer disease, but is less useful in portal hypertensive gastopathy.

There is probably no evidence that vitamin K is helpful, unless the clotting is deranged (which we are not told is the case here).

Reference:

Ripoll C, Garcia-Tsao G. Treatment of gastropathy and gastric antral vascular ectasia in patients with portal hypertension. *Curr Treat Options Gastroenterol.* 2007;10:483-94.

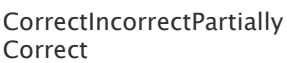
Next question

Go to summary

Answer Statistics

Times answered: 9362

Test Analysis



Work Smart

Question 45 of 185

A 70-year-old male is admitted with haematemesis. He is currently being treated with warfarin for atrial fibrillation and his INR returns as 10.

Which of the following is the most appropriate immediate treatment of his INR?

(Please select 1 option)

○	Cryoprecipitate
○	Fresh frozen plasma
○	Intravenous vitamin K
○	Oral vitamin K
◉	Prothrombin complex concentrate Correct

This gentleman is having a potentially life-threatening bleed in the setting of a grossly elevated INR.

Due to his warfarin therapy, he will have reduced levels of factors II, VII, IX, and X and requires replacement to correct his INR rapidly. This is most effectively achieved by the administration of prothrombin complex concentrate (Beriplex or Octaplex, 25-50 units/kg IV).

These result in complete reversal of the warfarin-induced anticoagulation within 10 minutes, but the clotting factors have a finite half-life and therefore 5 mg IV vitamin K should be given at the same time.

Fresh frozen plasma (FFP) contains more dilute clotting factors and therefore produces inferior correction and should not be used in the management of life-threatening bleeding (unless

prothrombin complex concentrate is not available).

Cryoprecipitate and oral vitamin K are not recommended for the management of life-threatening bleeding.

Reference:

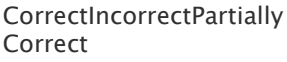
Keeling D, et al. Guidelines on oral anticoagulation with warfarin - fourth edition. *Br J Haematol.* 2011;154:311-24.

Next question | Go to summary

Answer Statistics

Times answered: 10186

Test Analysis



Score: 24.44%

Work Smart

Question 46 of 185

A 53-year-old woman with rheumatoid arthritis was referred with iron deficiency anaemia.

Endoscopy revealed several superficial antral erosions with small bowel biopsy showing mild villous blunting, apopotic bodies, occasional eosinophils and mild increase in chronic inflammatory cells.

Colonoscopy was reported as normal.

What is the most likely cause of these findings?

(Please select 1 option)

○	Coeliac disease
○	Crohn's disease
◉	Non-steroidal anti-inflammatory drug therapy Correct
○	Small bowel lymphoma
○	Whipple's disease

This salient features in this patient's case revolve around the fact that she has rheumatoid arthritis (hence the requirement for NSAIDs), the iron deficiency anaemia and the superficial ulceration on endoscopy with features indicative of inflammation due to the chronic NSAID use.

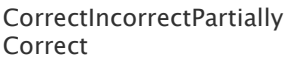
Coeliac disease is associated with villous atrophy and lymphocyte infiltration. There is no suggestion on the biopsy of lymphocyte infiltration which argues against lymphoma or coeliac.

Next question | Go to summary

Answer Statistics

Times answered: 9701

Test Analysis



Score: 26.09%

Total Answered: 46

Feedback

Question Navigator

Revision Notes

Work Smart

Question 47 of 185

A 31-years-old male teacher attends clinic with his partner who tells you that he has memory problems. The only other symptom is intermittent diarrhoea over the preceding four months.

He has limited vertical eye movements and exhibits rhythmic simultaneous eye and mouth movements.

Which pathogen is most likely to be the cause of his symptoms?

(Please select 1 option)

○	*Clostridium botulinum*
○	HIV
○	Prion protein
○	*Salmonella enteritidis*
◉	*Tropheryma whippleii* Correct

This is a tough question.

The suggestion here is that the patient has Whipple's disease, due to intestinal infection with *Tropheryma whippleii*.

Non-neurological manifestations of Whipple's disease are more common and include chronic diarrhoea, malabsorption with steatorrhoea, and associated abdominal distension and tenderness.

Neurological manifestations involve a chronic progressive impairment of higher mental function in association with seizures, myoclonus ataxia and oculomasticatory myorhythmia, found uniquely in

Whipple's.

The diagnosis is made by duodenal or jejunal biopsy and demonstrating the bacilli within the mucosa on PAS staining.

Characteristically, there is accumulation of glycoprotein and fat filled (PAS +ve) macrophage within the lamina propria.

Botulism does not produce this clinical picture.

An AIDS-related dementia is possible, but abnormal facial movements would be unusual.

Creutzfeldt-Jakob disease (CJD) could also produce this picture, although myoclonus is usually more of a feature and cognitive impairment is more generalised and acute.

Salmonella enteritidis usually causes only an acute diarrhoeal illness but may lead to bacteraemia and chronic long-term carriage and excretion.

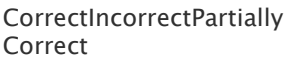
Next question

Go to summary

Answer Statistics

Times answered: 9016

Test Analysis



Work Smart

Question 48 of 185

With respect to liver cirrhosis, which of the following statements is correct?

(Please select 1 option)

○	Endothelin causes dilatation of the sinusoids, thus decreasing portal hypertension
○	In end stage cirrhosis, liver transplantation is associated with 20% five- year survival
○	The final common pathway of hepatic fibrosis is mediated by the hepatic stellate cell This is the correct answer
○	Transforming growth factor is a potent promoter of the fibrogenic response by hepatocytes
⊙	Tumour necrosis factor is an anti-inflammatory effector in fibrotic liver injury Incorrect answer selected

The hepatic stellate cells reside in the space of Disse and are central to the process of fibrosis within the liver.

Tumour necrosis factor-α is a pro-inflammatory effector in fibrotic liver injury, through activation of the stellate cells. These cells then secrete the fibrillar collagen constituting the defining features of hepatic fibrosis.

Interleukin-10 is thought to exert anti-inflammatory effects on the stellate cell.

Endothelin is a vasoconstrictor in the hepatic sinusoids (similarly in the endothelium of the systemic circulation) and functions by causing contraction of the hepatic stellate cells thus increasing intrahepatic sinusoidal resistance and promoting portal hypertension.

Nitric oxide antagonises the effects of endothelin in the liver.

Five-year survival after liver transplantation is now 75%.

Further Reading:

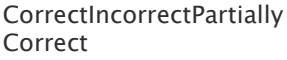
Iredale JP. Cirrhosis: new research provides a basis for rational and targeted treatments. *BMJ.* 2003;327:143-7.

Next question | Go to summary

Answer Statistics

Times answered: 8987

Test Analysis



Score: 27.08%

Total Answered: 48

Work Smart

Core Questions

Question 49 of 185

With respect to gastric carcinoma, which of the following statements is true?

(Please select 1 option)

○	Aspirin use is a risk factor for gastric carcinoma
○	Early diagnosis of gastric carcinoma results in a five-year survival rate of 20%
○	Endoscopic ultrasonography is superior to conventional CT scanning for local tumour staging This is the correct answer
○	*Helicobacter pylori* infection is not associated with gastric carcinoma
◉	Incidence of distal stomach tumours is increasing Incorrect answer selected

The incidence of distal stomach tumours is actually decreasing while the incidence of tumours in the proximal stomach is increasing.

NSAID use is associated with decreased risk of certain gastric tumours.

H. pylori infection has been associated in a number of studies with increased risk of gastric carcinoma.

Screening for gastric carcinoma in Japan detects up to 40% of gastric carcinomas at an early stage and in skilled hands, five-year survival can be upwards of 90%.

CT with gastric dilatation is a useful complementary investigation in the staging of gastric carcinoma but endoscopic ultrasonography is superior to conventional CT scanning as it is able to assess depth of infiltration and lymphatic dissemination of tumour.

Further Reading:

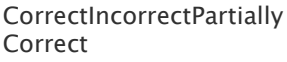
Hohenberger P, Gretschel S. Gastric cancer. *Lancet.* 2003;362:305-15.

Next question | Go to summary

Answer Statistics

Times answered: 8546

Test Analysis



Score: 26.53%

Total Answered: 49

Feedback

Work Smart

Question 18 of 50

A 22-year-old man presented to the Emergency Department one week after returning from a six-month visit to Pakistan. He complained of fever, rigours, and headache.

On examination, he was febrile (38°C) with a blood pressure of 115/65 mmHg, and a pulse of 100/minute. His abdomen was tender in the right upper quadrant.

Investigations showed:

Hb	110 g/L	(130-180)
WBC	15.5 $\times 10^9$/L	(4-11)
Neutrophils	13.5 $\times 10^9$/L	(1.5-7)
Platelets	350 $\times 10^9$/L	(150-400)
Blood film	No malaria parasites seen	
Alk Phos	450 U/L	(45-105)
AST	50 U/L	(1-31)
CRP	88 mg/L	(<10)
Stool culture	Negative	-
Chest x ray	Small right pleural effusion noted	

Which of the following investigations would be of most diagnostic value?

(Please select 1 option)

◉	Hepatitis E serology ☐ Incorrect answer selected
○	Sigmoidoscopy
○	Stool microscopy for ova, cysts, and parasites
○	Typhoid serology
○	Ultrasound scan of the abdomen ☐ This is the correct answer

The presentation is not consistent with hepatitis E infection.

Typhoid serology is unreliable.

The differential diagnosis is mainly pyogenic or amoebic liver abscess.

Pyogenic abscesses present with swinging pyrexia, neutrophilia and high inflammatory markers. Right-sided pleural effusions are common and blood cultures are often positive.

The presentation of amoebic liver abscess (ALA) is very similar. Most patients do not have bowel symptoms at any time and amoebic cysts are found in stool in less than 50% of proven cases of ALA.

Serology is the mainstay of diagnosis.

Ultrasound scan would confirm most moderate-sized to large liver abscesses and could guide a diagnostic aspiration.

Small lesions are best demonstrated by CT or MRI.

Next question | Go to summary

Answer Statistics

Times answered: 8900

Test Analysis

Work Smart

Question 50 of 185

A 33-year-old man with chronic hepatitis C is admitted with general deterioration; he has no specific symptoms.

He has missed many of his previous outpatient appointments and currently is not receiving any treatment.

On examination, he is generally unwell with a temperature of 37.4°C, blood pressure of 130/72 mmHg and appears jaundiced with the presence of ascites.

His investigations reveal:

Serum sodium	133 mmol/L	(137-144)
Serum potassium	4.3 mmol/L	(3.5-4.9)
Serum urea	21 mmol/L	(2.5-7.5)
Serum Creatinine	336 µmol/L	(60-110)
Bilirubin	78 µmol/L	(1-22)
AST	92 U/L	(5-35)
Alk phosphatase	267 U/L	(45-105)
Albumin	30 g/L	(37-49)
Urine sodium	60 mmol/L	-
Urine dipstick	+ Blood	

	+++ Protein
	Leukocytes trace
	Nitrites negative

Ascitic fluid analysis:

RBC	1,231/mm^3
WBC	190/mm^3 (60% lymphocytes)
Albumin	12 g/L

Which of the following is the likely diagnosis?

(Please select 1 option)

○	Abdominal tuberculosis
◉	Hepatorenal syndrome Incorrect answer selected
○	Mixed essential cryoglobulinaemia This is the correct answer
○	Spontaneous bacterial peritonitis
○	Urinary tract infection

This gentleman has renal failure with evidence of a primary renal pathology: significant proteinuria, relative hypertension.

Hepatitis C infection is strongly associated with mixed essential cryoglobulinaemia which may produce mesangiocapillary (also known as membranoproliferative) glomerulonephritis. This condition is associated with renal impairment, systemic vasculitic manifestations (including neuropathy, skin manifestations) and arterial thrombosis.

Hepatorenal syndrome is a diagnosis of exclusion and requires:

- correction of hypovolaemia
- withdrawal of any diuretics
- treatment of sepsis, and
- exclusion of a primary renal pathology prior to diagnosis.

In hepatorenal syndrome, the kidneys are functionally normal and biopsy is normal; where patients in this situation receive liver transplantation, the kidneys will almost always resume normal function. The urinary sodium and urine dipstick results given here indicate a primary renal pathology.

The ascitic tap results indicate that ascites is due to portal hypertension (serum albumin ascites gradient >11 g/L) and do not support the presence of infection within the ascitic fluid, counting against both abdominal tuberculosis and spontaneous bacterial peritonitis.

In the absence of symptoms, a urine dipstick indicating a trace of leukocytes and negative nitrites is poorly predictive of the presence of a urinary tract infection. Additionally this diagnosis does not adequately explain the degree of proteinuria or renal impairment.

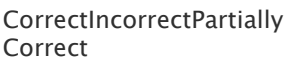
Next question

Go to summary

Answer Statistics

Times answered: 8669

Test Analysis



Work Smart

Exam Themes January 2006

Question 51 of 185

A 70-year-old man is admitted with pruritus and jaundice of two weeks duration and 2 kg weight loss over the last 2 years.

He has not drunk any alcohol for at least eight years.

One month ago, he completed a course of co-amoxiclav which had been prescribed by his GP for sinusitis and he was also taking ibuprofen for hip osteoarthritis.

Investigations reveal:

Albumin	38 g/L	(37-49)
Bilirubin	200 µmol/L	(1-22)
AST	150 U/L	(5-35)
Alkaline phosphatase	200 U/L	(45-105)

Abdominal ultrasound reveals gallstones but no biliary duct dilatation.

Which of the following is the most likely cause of his jaundice?

(Please select 1 option)

○	Cholangio-carcinoma
○	Co-amoxiclav This is the correct answer
○	Hepatitis B infection
○	Hepatitis C infection

⊙	Ibuprofen	☐ Incorrect answer selected

Co-amoxiclav (Augmentin) is notorious for causing drug-induced jaundice, often with a mixed hepatitic/cholestatic picture. A four-week delay in symptoms and signs is not unusual.

Flucloxacillin is another common culprit.

The patient must be warned that this could reoccur if he is given co-amoxiclav again.

There is nothing in the history (risk factors) to suggest that this might be acute hepatitis B infection and there is no evidence of chronic liver disease to suggest that this might be a result of chronic viral hepatitis.

Non-steroidal anti-inflammatory drugs, such as ibuprofen and diclofenac, may cause drug-induced hepatitis, however, the pattern of abnormality if a transaminitis and hyperbilirubinaemia is not usually seen.

Cholangiocarcinoma may present with an obstructive jaundice and weight loss, however, it is a relatively rare condition in those without risk factors for the disease and in a case such as this, whilst ultrasound may not demonstrate the actual lesion, one would expect it to show evidence of biliary duct obstruction and more likely than not evidence of hepatic metastases.

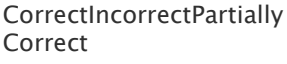
Next question

Go to summary

Answer Statistics

Times answered: 6781

Test Analysis



Work Smart

Question 52 of 185

A 65-year-old male presents with a four-month history of diarrhoea with pale stools and weight loss.

Relevant results show:

Calcium	1.8 mmol/L	(2.2-2.6)
Alkaline phosphatase	350 U/L	(45-105)

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Coeliac disease
○	*Giardia lamblia* infection
○	Pancreatic carcinoma This is the correct answer
○	Small intestinal bacterial overgrowth
◉	Whipple's disease Incorrect answer selected

The patient has a marked hypocalcaemia associated with malabsorption. A lack of pancreatic enzymes results in increased fats in the small intestine, leading to sequestration of calcium and malabsorption of calcium as a consequence. The raised alkaline phosphatase may represent osteomalacia, pancreatic carcinoma in its own right, metastases, or even biliary obstruction/disease.

At this age pancreatic carcinoma is the most probable diagnosis.

Coeliac disease very seldom causes such an increased alkaline phosphatase and is more likely to present with iron deficiency anaemia.

The villous atrophy caused by *Giardia* is very transient.

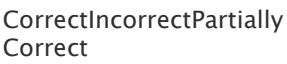
Whipple's is extremely rare, found in middle-aged men and caused by a bacillus, *Tropheryma whippelii*.

Next question | Go to summary

Answer Statistics

Times answered: 9393

Test Analysis



Score: 25%

Total Answered: 52

Work Smart

Question 53 of 185

A 24-year-old woman who has a long history of ulcerative colitis and takes mesalazine 3 g and azathioprine 125 mg per day discovers that she is 10 weeks pregnant.

She is also a smoker of 15 cigarettes daily.

She attends clinic seeking advice on the management of her medicines during her pregnancy.

Which of the following statements is correct?

(Please select 1 option)

○	Azathioprine can be used in pregnancy without significant risk to the fetus This is the correct answer
○	Initiating an elemental diet predisposes to fetal malnutrition
○	Mesalazine therapy should be withdrawn
○	Steroid therapy is contraindicated
◉	Termination of the pregnancy is advised Incorrect answer selected

Azathioprine use for the treatment of inflammatory bowel disease in pregnancy is not associated with a significant increase in complications of pregnancy, nor fetal malformations, and its use in this setting is considered safe.

Animal studies suggest an increased risk of low birth weight but this is not supported by the data available in humans. The risk to the fetus from uncontrolled inflammatory bowel disease is significant and maintenance of remission is very important.

Well-controlled ulcerative colitis is more important for the baby from a nutritional point of view.

An elemental diet simply contains predigested food and would not lead to fetal malnutrition.

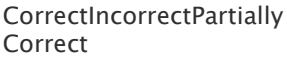
The safety of the 5-aminosalicylic acid (5-ASA) drugs in pregnancy is best supported by the data on Salazopyrin which have been available for the longest.

Next question | Go to summary

Answer Statistics

Times answered: 9447

Test Analysis



Score: 24.53%

Total Answered: 53

Work Smart

Question 54 of 185

A 30-year-old man presents with acute, profuse, watery diarrhoea with some blood after returning from a holiday in Tanzania. He had been taking oral rehydration salts.

Which one of the following is the most appropriate treatment?

(Please select 1 option)

○	Ciprofloxacin	This is the correct answer
○	Loperamide	
○	Metronidazole	
○	Prednisolone	
◉	Vancomycin	Incorrect answer selected

The most likely cause of such traveller's diarrhoea is *Escherichia coli* and hence ciprofloxacin is recommended for first-line antibiotic therapy (when needed) before stool culture results are available.

Metronidazole would be suitable for *Giardia* infection but its course is usually more insidious.

Next question | Go to summary

Answer Statistics

Work Smart

Question 55 of 185

A 36-year-old man presents with a 16-week history of indigestion.

Five years previously, he had been treated for a duodenal ulcer.

Investigations reveal:

Fasting gastrin	120 pmol/l (<55)

Which one of the following statements regarding gastrin is correct?

(Please select 1 option)

◉	It acts upon the G cells of the stomach	✗ Incorrect answer selected
○	It inhibits the secretion of pancreatic bicarbonate	
○	It is produced by the alpha cells of the pancreatic islets	
○	It is produced by the parietal cells of the stomach	
○	Its release is stimulated by gastric luminal peptides	✓ This is the correct answer

Gastrin is mainly produced in two forms by the G cells of the gastric antrum.

It stimulates the parietal cells to produce hydrochloric acid and its production is stimulated by neural reflex pathways and also by the direct effect of digested peptides on the G cells themselves.

Gastrin may have some effect in stimulating exocrine pancreatic secretions.

Work Smart

Question 56 of 185

An asymptomatic 40-year-old female underwent an abdominal ultrasound scan as part of a clinical trial and was noted to have gallstones, but entirely normal liver function tests.

Which one of the following is the most appropriate management?

(Please select 1 option)

○	Chenodeoxycholic acid
○	Laparoscopic cholecystectomy
○	Lithotripsy
○	Observation This is the correct answer
◉	Ursodeoxycholic acid Incorrect answer selected

This patient is asymptomatic and does not require any treatment at present. "If it ain't broke don't fix it" is the general rule.

There is no proven role for the use of oral drugs to try to reduce the formation of gallstones.

The only definitive treatment would be a cholecystectomy but that is not generally offered for asymptomatic gallstones.

Next question | Go to summary

Work Smart

Question 57 of 185

A 25-year-old man with a long history of heavy alcohol intake is admitted with nausea and frequent vomiting, four hours after a meal in a restaurant.

During review in the Emergency Department, he vomits a cupful of blood.

Which if the following is the cause of his haematemesis?

(Please select 1 option)

○	Duodenal ulceration
○	Haemorrhagic gastritis
○	Mallory-Weiss tear This is the correct answer
○	Oesophageal varices
◉	Oesophagitis Incorrect answer selected

Persistent vomiting can eventually lead to small tears in the oesophagus, leading to the vomiting of red blood.

Varices would produce large volumes of blood (much more than just a cupful).

Next question | Go to summary

Work Smart

Question 58 of 185

A 67-year-old man with known aortic valvular disease is admitted with deteriorating dyspnoea.

Investigations show:

Haemoglobin	90 g/L	(120-160)
MCV	70 fL	(80-96)

Upper gastrointestinal tract endoscopy	Normal
Duodenal biopsy	Normal

Which one of the following investigations is most likely to provide the diagnosis?

(Please select 1 option)

○	Barium enema
◉	Colonoscopy Correct
○	CT abdomen
○	Mesenteric angiography
○	Small bowel enema

In the older age group, investigation of the lower gastrointestinal (GI) tract is vital to exclude a lower GI malignancy.

There is an association between aortic stenosis and angiodysplasia; it has been debated and is likely to be present but weak. Angiodysplasia is more common in severe aortic disease and may regress upon treatment of the valvular lesion.

There is evidence that angiodysplasia is more frequently present in patients with aortic stenosis compared to those with other valvular dysfunction, and also that patients with aortic stenosis are over-represented in those with occult GI bleeding. This, however, does not extrapolate to mean that angiodysplasia is the most common underlying lesion in patients with aortic stenosis and GI bleeding.

Colonoscopy would have the greatest diagnostic yield in this setting.

After this, capsule endoscopy would probably be the most appropriate.

Mesenteric angiography may be useful if there is active bleeding; generally, a large arteriovenous malformation or a bleeding rate of at least 0.5 ml/min is required to obtain a diagnostic scan.

CT scans do not demonstrate colonic pathology as well as colonoscopy, which is still considered the gold standard.

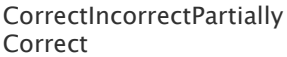
Next question

Go to summary

Answer Statistics

Times answered: 8971

Test Analysis



Work Smart

Question 59 of 185

A 78-year-old woman with hip osteoarthritis presents with altered bowel habit.

She undergoes a sigmoidoscopy and rectal biopsy shows normal epithelium and pigment-laden macrophages in the lamina propria.

What is the most likely cause of these findings?

(Please select 1 option)

○	Diverticular disease
○	Laxative use This is the correct answer
○	Mesenteric ischaemia
○	Non-steroidal anti-inflammatory drugs
◉	Ulcerative colitis Incorrect answer selected

She has 'melanosis coli' as a result of prolonged laxative use.

Often the bowel mucosa looks dark and 'stained' during colonoscopy.

She may be predisposed to constipation due to immobility from her arthritis and/or use of constipating pain killers.

Next question | Go to summary

Work Smart

Question 60 of 185

A 19-year-old student presents with weight loss and blood loss per rectum. You organise a flexible sigmoidoscopy.

Which of the following histological features would favour a diagnosis of Crohn's disease and not ulcerative colitis?

(Please select 1 option)

○	Crypt abscesses
○	Goblet cell mucus depletion
○	Lymphocyte infiltrate of the lamina propria
○	Metaplastic polyp formation
◉	Non-caseating granulomas Correct

Ulcerative colitis is characterised by mucosal inflammation with:

- general inflammatory cell infiltration
- goblet-cell mucus depletion
- crypt abscesses
- crypt shortening, and
- branching.

There is continuous inflammation, worsening from rectum to caecum.

In contrast, Crohn's disease is characterised by transmural inflammation, with:

- lymphocytic infiltrates and lymphoid aggregates
- fissures
- preservation of crypt architecture, and
- non-caseating granulomata.

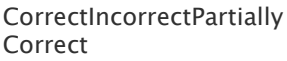
There is patchy inflammation from mouth to anus.

Next question | Go to summary

Answer Statistics

Times answered: 8843

Test Analysis



Score: 25%

Work Smart

Question 61 of 185

A 30-year-old woman presents with jaundice and her investigations reveal:

Haemoglobin	90 g/L	(115-165)
Reticulocyte count	180 $\times 10^9$/L	(25-85)
Serum bilirubin	50 µmol/L	(1-22)

Her blood film reveals the presence of spherocytes.

Which of the following is the next most useful investigation?

(Please select 1 option)

◉	Abdominal ultrasound scan Incorrect answer selected
○	Direct antiglobulin test This is the correct answer
○	Glucose-6-phosphate dehydrogenase activity
○	Haemoglobin electrophoresis
○	Red cell osmotic fragility

The results given indicate a haemolytic anaemia of which spherocytes are typical and given the age of the patient the most likely cause is immune.

The first step in analysis of a spherocytic hemolytic anaemia is to determine whether the process is hemolytic or not. The best way to do it is a direct antiglobulin test. If negative, one could go on to

confirm HS with other tests.

The osmotic fragility test is unreliable and is no longer recommended in routine clinical practice. Osmotic gradient ektacytometry is used to differentiate hereditary spherocytosis from hereditary stomatocytosis, but is only available in specialised laboratories. If the diagnosis is equivocal, the cryohaemolysis test and EMA binding can be used.

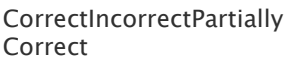
In atypical cases, gel electrophoresis analysis of erythrocyte membranes is the test of choice.

Next question | Go to summary

Answer Statistics

Times answered: 9146

Test Analysis



Score: 24.59%

Work Smart

Question 62 of 185

A 25-year-old female presents with red crusted lesions around the mouth and finger pulps three months after having had small bowel resection for Crohn's disease.

Which is the most likely cause of her skin condition?

(Please select 1 option)

○	Nicotinamide deficiency
○	Pyridoxine deficiency
○	Thiamine deficiency
○	Vitamin B12 deficiency
◉	Zinc deficiency Correct

Zinc deficiency can lead to acrodermatitis which presents with perioral dermatitis, acral involvement, and sometimes alopecia.

The features of this patient who had bowel resection suggest zinc deficiency.

Next question | Go to summary

Answer Statistics

Work Smart

Question 63 of 185

A 70-year-old woman presented with a history of pancreatitis and persistent diarrhoea.

She also gave a history of osteoporosis and had had a deep vein thrombosis.

Which one of the following drugs will become less effective after she starts taking cholestyramine to relieve intolerable itching?

(Please select 1 option)

○	Aspirin
○	Folic acid
○	Thiamine
○	Vitamin D This is the correct answer
◉	Warfarin Incorrect answer selected

Cholestyramine is an anion exchange resin and will interfere with the absorption of fat-soluble vitamins.

Thus vitamin D absorption will be reduced making treatment with this drug less effective when given with cholestyramine.

Cholestyramine may enhance or reduce the anticoagulant effect of warfarin (see BNF).

Work Smart

Question 64 of 185

A 50-year-old woman with a long history of alcohol abuse is prescribed phenytoin for epilepsy.

Examination was normal except for a liver edge.

Her full blood count reveals:

Haemoglobin	100 g/L	(115-165)
MCV	122 fL	(80-96)
White cell count	2.2 $\times 10^9$/L	(4-11)
Platelet count	85 $\times 10^9$/L	(150-400)

Which is the most likely explanation for these results?

(Please select 1 option)

◉	Alcoholic liver disease Incorrect answer selected
○	Aplastic anaemia
○	Folic acid deficiency This is the correct answer
○	Hypothyroidism
○	Vitamin C deficiency

Folic acid deficiency would give all these results. In addition, she has good reason to be folate

deficient since she drinks a considerable amount and is taking anticonvulsants.

Alcoholic liver disease on its own would not make her leucopenic.

Hypothyroidism would cause a raised MCV, but not the other parameters.

Scurvy does not cause this picture.

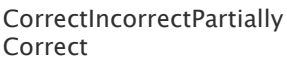
Aplastic anaemia could cause this haematological picture but the clinical scenario leads towards folic acid deficiency.

Next question | Go to summary

Answer Statistics

Times answered: 9313

Test Analysis



Score: 25%

Work Smart

Exam Themes May 2002

Question 65 of 185

A 75-year-old male presents with a two-month history of dyspnoea, weight loss and generalised lethargy. His medical history included a previous left-sided hemiparesis due to stroke for which he took aspirin and perindopril.

Examination revealed residual left-sided hemiparesis together with a pale and slightly jaundiced appearance.

Investigations show:

Haemoglobin	50 g/L	(130-180)
MCV	109 fL	(80-96)
White cell count	2 $\times 10^9$/L	(4-11)
Platelets	45 $\times 10^9$/L	(150-400)

Urinalysis showed increased urobilinogen.

Which of the following is the next most appropriate investigation?

(Please select 1 option)

◉	Bone marrow aspirate Incorrect answer selected
○	Direct antiglobulin test
○	Endoscopy
○	Serum haptoglobins

○	Vitamin B_{12} concentration	This is the correct answer

In this situation, serum B_{12} estimation is the correct choice. With a pancytopenic picture and raised mean corpuscular volume (MCV), the most appropriate step is to check the B_{12} and folate.

The other choices are considered only after the basic assays.

Haemolysis does not explain the low WCC, nor the thrombocytopenia.

A haptoglobin only adds weight to a diagnosis of haemolysis, and an RBC-labelled scan would add greater sensitivity to the diagnosis of haemolysis.

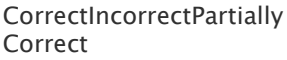
The mild jaundice is typical of megaloblastic anaemia (vitamin B_{12} or folate deficiency) because of increased destruction of red cell precursors in the bone marrow.

Next question | Go to summary

Answer Statistics

Times answered: 9338

Test Analysis



Work Smart

Question 66 of 185

A 50-year-old former footballer with a long history of alcohol excess presents with epigastric pain.

Which of the following suggests a diagnosis of peptic ulceration rather than chronic pancreatitis?

(Please select 1 option)

○	Back pain
○	Exacerbation with alcohol
○	Loose stool
◉	Relieved by food Correct
○	Weight loss

Relief with food suggests peptic, and specifically, duodenal ulceration. It is likely that food would precipitate the pain of chronic pancreatitis.

Loose stool is suggestive of pancreatitis/malabsorption. Pain referred to the back occurs in both situations and hence not suggestive.

Weight loss can occur in both gastric ulcers and pancreatitis and is not very suggestive.

Alcohol may well exacerbate both types of pain.

Next question | Go to summary

Work Smart

Core Questions

Question 67 of 185

A 17-year-old student returns from a backpacking trip to Nepal with a two-week history of offensive diarrhoea and weight loss.

Which is the most likely infective organism?

(Please select 1 option)

○	*Escherichia coli* 0157
○	*Giardia intestinalis* (*G.lamblia*) This is the correct answer
○	*Salmonella typhi*
◉	*Shigella flexneri* Incorrect answer selected
○	*Yersinia enterocolitica*

The history of diarrhoea over a couple of weeks makes giardiasis the most likely diagnosis here.

Giardia lamblia is a protozoan which can cause traveller's diarrhoea. It is transmitted by cysts from faecally contaminated water or between people. The incubation period is three days to three weeks and the symptoms can persist for several weeks.

Diarrhoea tends to be the presenting symptom and classically has a highly offensive smell. This is often followed by nausea, cramps, abdominal pain, and bloating. The diarrhoea can become persistent and lead to malabsorption and weight loss. Unlike other infective causes of chronic diarrhoea, *Giardia* readily affects immunocompetent hosts as well as the immunocompromised.

Giardia is diagnosed by visualising cysts in stool or trophozoites in small bowel mucosal biopsy. It is

treated with tinidazole (2 g single dose), or metronidazole (3-10 days). Metronidazole has been shown to cure over 90% of patients and is often better tolerated than tinidazole. Paromomycin can be used in pregnancy as there is no systemic absorption. Resistant infection can often be cured with a combination of metronidazole and quinacrine.

Escherichia coli 0157 is a rare cause of infectious gastroenteritis. It usually causes bloody diarrhoea which lasts less than a week. It can be complicated by haemolytic uraemic syndrome.

Shigella and *Yersinia* also usually cause dysentery.

Salmonella typhi causes typhoid fever which typically presents as a systemic illness with intermittent diarrhoea.

Reference:

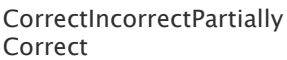
Gardner TB, Hill DR. Treatment of giardiasis. *Clin Microbiol Rev.* 2001;14:114-28.

Next question | Go to summary

Answer Statistics

Times answered: 10130

Test Analysis



Work Smart

Question 19 of 50

A 55-year-old male presents with dysphagia, retrosternal discomfort, and weight loss. Studies reveal achalasia.

Which of the following is most likely to provide symptomatic relief?

(Please select 1 option)

○	Buscopan
○	Diazepam
○	Nifedipine
○	Omeprazole
◉	Surgical cardiomyotomy Correct

Both calcium channel blockers (nifedipine) and nitrates relax the lower oesophageal sphincter. However, the effect on symptoms is variable, short-lived, and usually suboptimal. Use is frequently limited by adverse effects. Consequently, medical therapy is typically limited to those patients too frail or unwilling to undergo definitive treatment or other therapies.

Studies looking at the efficacy of medical therapies are typically small and uncontrolled and tend to overestimate the benefit of an intervention. Study estimates of symptom improvement with medical therapy vary between 53-87%. None, however, claim to achieve full symptom improvement.

On the other hand pooled results from five studies of surgical procedures (Heller myotomy) show good to excellent symptom response in 82% of patients. Other studies of surgical techniques typically

show symptom response rates of 84-100%.

Benefit seems to persist for at least 16 months beyond this although there may be some recurrence. Reflux is the most common side effect and a concomitant antireflux procedure (Nissen's fundoplication) may be performed.

Botox applied to the lower oesophageal sphincter is a recent therapy with good efficacy. However, its effects are short-lived (typically less than six months) and use is generally recommended to be restricted to the frail or elderly in whom more aggressive therapy poses high risk.

None of other choices help the symptoms.

Oesophageal dilatation is usually attempted before laparoscopic surgical myotomy.

Further Reading:

Riley SA, Attwood SEA. Guidelines on oesophageal dilatation. *Gut.* 2004;53:i1-i6.

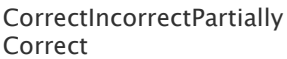
Next question

Go to summary

Answer Statistics

Times answered: 9121

Test Analysis



Work Smart

Question 68 of 185

A 55-year-old woman is referred by her GP with abnormal liver function tests.

She is overweight but otherwise well.

Liver biopsy is reported as showing evidence of non-alcoholic steatotic hepatitis (NASH).

Which of the following statements is correct concerning NASH?

(Please select 1 option)

◉	Commoner in women than men Incorrect answer selected
○	Has not shown improvement with pioglitazone
○	Is associated with insulin resistance This is the correct answer
○	Is treated with urso-deoxycholic acid
○	The majority of patients will develop cirrhosis

NASH is associated with increased prevalence of insulin resistance/type 2 diabetes.

Approximately 20% develop cirrhosis.[1]

It is more common in men due to the protective effects of oestrogen. The treatment is complex and multi-modal but should focus on weight reduction.

Data from small clinical trials using pioglitazone have shown modest improvement in liver biopsy appearance over one year.

Reference:

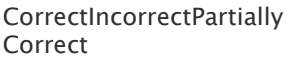
1. Falck-Ytter Y, et al. Clinical features and natural history of nonalcoholic steatosis syndromes. *Semin Liver Dis.* 2001;21(1):17-26.

Next question | Go to summary

Answer Statistics

Times answered: 9894

Test Analysis



Score: 25%

Total Answered: 68

Work Smart

Question 69 of 185

A 55-year-old male is admitted with vomiting. He has a long history of alcohol abuse, appears slightly jaundiced, and is dishevelled and unkempt.

He was started on an intravenous glucose infusion and diazepam and he symptomatically improved.

One day later he became confused, developed vomiting and diplopia, and was unable to stand.

What is the most likely diagnosis?

(Please select 1 option)

○	Benzodiazepine intoxication
○	Delirium tremens
○	Hepatic encephalopathy
○	Subdural haematoma
◉	Vitamin B deficiency Correct

This patient is manifesting signs of Wernicke's encephalopathy with confusion, oculomotor signs, and ataxia affecting gait and stance.

Wernicke's encephalopathy is a medical emergency, requiring urgent intravenous thiamine.

The episode has been precipitated by intravenous dextrose administration which has exhausted his vitamin B reserves, hence B vitamins must be administered to all alcoholic patients requiring dextrose.

Work Smart

Exam Themes September 2004

Question 70 of 185

A 42-year-old female with ulcerative colitis is found to have anti-smooth muscle antibodies.

Which is the most appropriate next test for this patient?

(Please select 1 option)

○	Abdominal ultrasound
○	Colonoscopy
○	Full blood count
○	Liver biopsy
◉	Liver function tests Correct

The most appropriate investigation for this woman is LFTs to begin with to assess if there are any features of autoimmune hepatitis, such as, raised bilirubin, aspartate aminotransferase (AST), alanine aminotransferase (ALT) and alkaline phosphatase.

If this is the case then liver biopsy may be required or further diagnostic imaging.

Autoimmune hepatitis is often seen in individuals with other autoimmune disorders such as ulcerative colitis.

Work Smart

Exam Themes September 2004

Question 71 of 185

A 43-year-old female presents with abdominal pain and watery diarrhoea.

She is taking ibuprofen for joint pains and has been previously investigated for infertility. She was given a proton pump inhibitor by her GP for six weeks with no relief of her symptoms.

Investigations:

Haemoglobin	122 g/L	(115-165)
Calcium	2.86 mmol/L	(2.2-2.6)
Albumin	42 g/L	(37-49)
Phosphate	0.8 mmol/L	(0.8-1.4)
CRP	10 mg/L	(<10)
Endoscopy	Multiple small duodenal ulcers	
H. pylori	Negative	

What is the likely diagnosis?

(Please select 1 option)

○	Crohn's disease
◉	Cushing's syndrome Incorrect answer selected
○	Multiple endocrine neoplasia This is the correct answer
○	NSAID induced PUD

○	Small bowel lymphoma

The CRP is not raised, making a diagnosis of Crohn's unlikely.

The duodenal ulcers (DUs) have persisted despite a lengthy treatment with PPIs.

Small bowel lymphoma is suggested by narrowing of the intestine lumen resulting in paraumbilical pain made worse by eating, with weight loss, vomiting and occasional intestinal obstruction. Small bowel lymphoma is diagnosed by contrast radiographs and intestinal biopsy.

The most likely diagnosis here is MEN; likely MEN1a (Wermer's syndrome).

Multiple DUs make a diagnosis of Zollinger-Ellison syndrome likely, due to gastrinomas.

Hypergastrinaemia may be the cause of the diarrhoea.

There is also hypercalcaemia as a result of the parathyroid hyperplasia indicative of this condition. There may not necessarily be a family history, sporadic cases make up 10% of new cases.

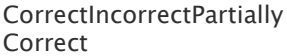
The infertility would fit with a prolactinoma.

Next question | Go to summary

Answer Statistics

Times answered: 8934

Test Analysis



Work Smart

Exam Themes September 2004

Question 72 of 185

A 50-year-old male with a history of alcohol excess presents with a two-week history of confusion.

Which of the following strongly suggests a diagnosis of Korsakoff's psychosis?

(Please select 1 option)

○	Delusional jealous beliefs
○	Epileptic seizures
○	Impaired long term memory
○	Inventing recent events — This is the correct answer
◉	Visual hallucinations — Incorrect answer selected

Korsakoff's is associated with short term memory loss with subsequent compensatory confabulation by the patient.

Other symptoms may include

- Delirium
- Anxiety
- Fear
- Depression
- Confusion
- Delusions
- Insomnia
- Painful extremities

- Sometimes bilateral wrist drop but more frequently bilateral foot drop with pain or pressure over the long nerves.

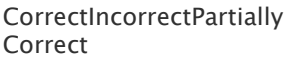
The treatment is intravenous thiamine and attention to the consequences of alcohol withdrawal.

Next question | Go to summary

Answer Statistics

Times answered: 9665

Test Analysis



Score: 26.39%

Total Answered: 72

Work Smart

Question 73 of 185

Which of the following statements regarding lactose intolerance is correct?

(Please select 1 option)

○	Lactose intolerance is best diagnosed with a methane breath test
○	Lactose intolerance is commonest in white Northern Europeans
○	Lactose intolerance is treated by glucose and galactose replacement therapy
○	Lactose is degraded to glucose and fructose by lactase
◉	Rotavirus infection may precipitate the diagnosis of lactose intolerance Correct

Lactase acts on lactose to generate glucose and galactose.

Lactose intolerance is least common in white northern Europeans and is more common in Asian, and East Asian races.

Lactose intolerance may be diagnosed with a DNA assay of the lactase gene along with a hydrogen breath test. Any GI infection may reveal lactose intolerance as gut flora may be altered by large bowel bacterial or viral load, as well as the treatment of infection.

A change from an Eastern to a Western high lactose diet may also reveal lactose intolerance.

Many patients labelled as having IBS may suffer from undiagnosed lactose intolerance and many medications use lactose as a binding and stabilising agent.

Treatment of lactose intolerance is with careful replacement of lactase.

Work Smart

Question 74 of 185

A 32-year-old female presents with pruritus and jaundice. She is 30 weeks gestation in her first pregnancy.

Two weeks earlier she had been treated by the ENT surgeons after presenting to the Emergency Department with intractable nose bleeds.

Liver function tests reveal:

ALT	72 U/L	(5-40)
Alkaline phosphatase	700 U/L	(30-110)
Bilirubin	80 µmol/L	(1-18)
Serum bile acids	100 times normal titre	

Which of the following statements is correct concerning this patient?

(Please select 1 option)

○	ALP does not increase in a normal pregnancy
○	Maternal hepatic blood flow does not increase in pregnancy This is the correct answer
◉	Treatment options include IV N-acetyl cysteine Incorrect answer selected
○	Varices are diagnostic of liver disease in pregnancy
○	Viral hepatitis is the likely diagnosis

The diagnosis here is intrahepatic cholestasis which presents with markedly elevated serum bile acids (cholylglycine).

It presents in the second or third trimester and usually, the alkaline phosphatase (ALP) is 7-10 times normal with raised alanine transaminase (ALT), aspartate transaminase (AST) and bilirubin.

Cardiac output and blood volume increase in pregnancy but hepatic blood flow does not.

Treatment options include ursodeoxychloric acid, cholestyramine, phenobarbital and vitamin K to treat the coagulopathy.

ALP rises in pregnancy but not to this extent. The placenta is the source of the raised ALP.

Viral hepatitis is the commonest cause of jaundice in pregnancy but the elevated bile acids make this unlikely in this case.

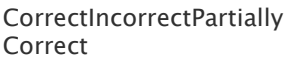
Next question

Go to summary

Answer Statistics

Times answered: 9264

Test Analysis



Work Smart

Question 20 of 50

Which of the following statements is correct concerning the relationship between type 2 diabetes and colonic cancer?

(Please select 1 option)

○	Increased concentrations of C peptide are a marker of increased colorectal cancer risk This is the correct answer
○	Insulin treatment increases recurrence free survival after treatment of colonic cancer
○	The increased risk of colorectal cancer in diabetes is related to BMI
○	The increased risk of colorectal cancer in diabetes is related to total cholesterol
◉	Type 1 diabetes has similar risks of colonic cancer as does type 2 diabetes Incorrect answer selected

Type 2 diabetes is associated with a 40-60% increase in the risk of cancer of the large bowel. This increase is linked to changes in HbA_{1c}.

Type 2 diabetes is associated with significantly higher rates of overall mortality and reduced disease-free and recurrence-free survivals after chemotherapy/radiotherapy and insulin has not been shown to have any effects on mortality.

No association has been found between colonic malignancy and type 1 diabetes, nor gestational diabetes.

A number of studies have independently linked high circulating concentrations of C-peptide, as a marker of insulin production, with increased colorectal cancer risk. The molecular basis has not been

proven but it may be reasonable to extrapolate it is linked to the growth stimulation effects of insulin.

Further Reading:

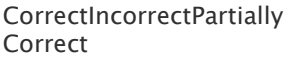
Renehan AG, Shalet SM. Diabetes, insulin therapy, and colorectal cancer. *BMJ.* 2005;330:551.

Next question | Go to summary

Answer Statistics

Times answered: 9012

Test Analysis



Score: 15%

Total Answered: 20

Work Smart

Exam Themes May 2002

Question 75 of 185

Which of the following is most likely to be reversible following venesection in a 45-year-old male with haemochromatosis?

(Please select 1 option)

○	Arthropathy
○	Cardiomyopathy This is the correct answer
○	Cirrhosis
○	Diabetes mellitus
◉	Hypopituitarism Incorrect answer selected

Disorders that are potentially reversible in haemochromatosis include the dermal pigmentation and cardiomyopathy.

Similarly, there are improvements in liver function tests.

However, diabetes, cirrhosis, hypogonadism, and arthropathy are usually irreversible.

Next question | Go to summary

Answer Statistics

Work Smart

Exam Themes May 2002

Question 76 of 185

A 45-year-old female develops profuse watery diarrhoea with lower abdominal pain seven days after undergoing laparoscopic cholecystectomy.

What is the most likely diagnosis?

(Please select 1 option)

○	Abdominal sepsis
○	Bile acid diarrhoea
○	*Campylobacter* gastroenteritis
○	Pseudomembranous colitis This is the correct answer
◉	Pseudo-obstruction Incorrect answer selected

Prophylactic antibiotics are frequently given in both laparoscopic and open cholecystectomy.

Typically broad spectrum antibiotics are administered with a consequent risk of pseudomembranous colitis. However, it must also be remembered that *Clostridium difficile* may also be contracted on the wards.

Bile acid diarrhoea may affect 10% of patients following cholecystectomy. Typically it is post-prandial; the bile, with no gallbladder to store it, is excreted directly into the gut.

Work Smart

Exam Themes May 2002

Question 21 of 50

Which of the following is most commonly associated with the development of pseudomembranous colitis?

(Please select 1 option)

○	Cefuroxime This is the correct answer
○	Co-trimoxazole
○	Erythromycin
○	Flucloxacillin
◉	Gentamicin Incorrect answer selected

Clostridium difficile, a Gram-positive anaerobic bacterium, is the cause of pseudomembranous colitis.

Studies show that when *C. difficile* colonise the gut they release two potent toxins, toxin A and toxin B, which bind to certain receptors in the lining of the colon and ultimately cause diarrhoea and inflammation of the large intestine or colon (colitis).

Commonly the disease is caused by broad-spectrum antibiotics, most commonly cephalosporins, broad-spectrum penicillins, quinolones, and clindamycin. Less commonly, macrolides, trimethoprim and sulphonamides have been reported to cause the disorder. Aminoglycosides, tetracyclines, and chloramphenicol are rarely associated with pseudomembranous colitis.

Appropriate treatment includes metronidazole and oral vancomycin.

Reference:

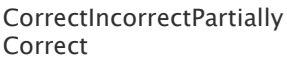
Medscape. Clostridium Difficile Colitis.

Next question | Go to summary

Answer Statistics

Times answered: 8982

Test Analysis



Score: 14.29%

Total Answered: 21

Feedback

Work Smart

Question 77 of 185

A 40-year-old male presents with a six-hour history of profuse vomiting and over the last two hours had developed left sided chest pain and dyspnoea.

On examination, he had a pulse of 110 beats per minute regular and a blood pressure of 168/90 mmHg.

On palpation, he had crepitus over the left supraclavicular region and neck, reduced heart sounds and left basal sided crackles, plus some dullness to percussion over the right base of the chest.

What is the most appropriate initial investigation?

(Please select 1 option)

○	CT with oral contrast
○	Echocardiogram
◉	Gastrografin swallow Correct
○	Rigid oesophagoscopy
○	Upper GI endoscopy

This man has a history of severe vomiting which then progressed to chest pain.

The most relevant finding on examination is the crepitus over the chest indicating surgical emphysema. The most probable cause is spontaneous rupture of the oesophagus.

Mackler's triad (vomiting, chest pain and surgical emphysema) is classical but absent in almost half the cases.

The chest x ray may confirm the surgical emphysema.

Gastrografin swallow will confirm the site of perforation in approximately 65-75% of cases and is the recommended first line investigation. Barium is more sensitive at 90% for detecting small perforations but carries the risk of a severe inflammatory response (mediastinitis).

A CT with contrast can then be performed to confirm the site of perforation, as well as imaging the other surrounding structures.

Lateral neck x rays may be useful in the early stages where the diagnosis is uncertain and surgical emphysema is not seen on a plain CXR.

Oesophagoscopy has a role in if the Gastrografin swallow is negative.

Further Reading:

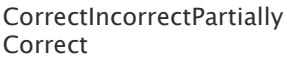
Medscape. Esophageal Rupture and Tears in Emergency Medicine.

Next question | Go to summary

Answer Statistics

Times answered: 9414

Test Analysis



Work Smart

Question 78 of 185

A group of construction workers presented to the emergency department with diarrhoea, flushing, sweating and a hot mouth.

They fell ill minutes after eating lunch in the staff canteen. They admitted that they had eaten tuna fish.

What is the likely cause of food poisoning?

(Please select 1 option)

○	*Clostridium perfringens*
○	Heavy metal
○	Mushroom
○	Scombrotoxin This is the correct answer
◉	*Staphylococcus aureus* Incorrect answer selected

Scombrotoxin food poisoning is caused by the ingestion of foods that contain high levels of histamine and possibly other vasoactive amines and compounds.

Histamine and other amines are formed by the growth of certain bacteria and the subsequent action of their decarboxylase enzymes on histidine and other amino acids in food, by spoilage of foods such as fishery products, particularly tuna or mahi-mahi.

Incubation period is 10-60 minutes.

Work Smart

Question 22 of 50

A woman had lunch at a Chinese restaurant.

In the evening she presented with diarrhoea and vomiting. There was no fever.

Which of the following is the likely cause of food poisoning in her case?

(Please select 1 option)

○	*Bacillus cereus* This is the correct answer
○	*Clostridium perfringens*
◉	*Escherichia coli* Incorrect answer selected
○	*Staphylococcus aureus*
○	*Yersinia enterocolitica*

Bacillus cereus food poisoning is the general description, although two recognised types of illness are caused by two distinct metabolites.

- The diarrhoeal type of illness is caused by a large molecular weight protein while
- The vomiting (emetic) type of illness is believed to be caused by a low molecular weight, heat-stable peptide.

The onset of watery diarrhoea, abdominal cramps and pain occurs 6-15 hours after consumption of contaminated food. Symptoms usually persist for 24 hours.

The emetic type of food poisoning is characterised by nausea and vomiting within 0.5 to 6 hours after

consumption of contaminated foods. Occasionally, abdominal cramps and/or diarrhoea may also occur. Duration of symptoms is generally less than 24 hours.

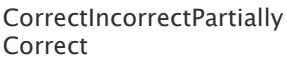
A wide variety of foods including meats, milk, vegetables, and fish have been associated with the diarrhoeal type food poisoning. The vomiting-type outbreaks have generally been associated with rice products. *Staphylococcus aureus* and *Clostridium perfringens* are associated with meat and *Yersinia enterocolitica* with milk.

Next question | Go to summary

Answer Statistics

Times answered: 9824

Test Analysis



Score: 13.64%

Total Answered: 22

Work Smart

Question 79 of 185

A 51-year-old man was brought to the Emergency Department for loose stools.

He was dehydrated, weak, and in shock. He had previously been complaining of large stool volumes for a one month period. Stool colour was normal.

There was no history of laxative abuse and no significant past medical history.

What is the most likely diagnosis?

(Please select 1 option)

○	Carcinoid syndrome
○	Diabetic diarrhoea
◉	Gastrinoma Incorrect answer selected
○	Systemic mastocytosis
○	VIPoma This is the correct answer

VIPomas are endocrine tumours that secrete excessive amounts of VIP 32 which cause a distinct syndrome characterised by

- large-volume watery diarrhoea
- hypokalaemia, and
- dehydration.

This syndrome is also called Verner-Morrison syndrome, pancreatic cholera, or WDHA syndrome (for

Watery Diarrhoea, Hypokalaemia, and Achlorhydria) which some patients develop.

The mean age of patients is 49 years; however, it can occur in children and when it does is usually caused by a ganglioneuroma or ganglioneuroblastoma.

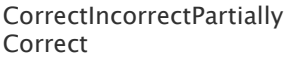
A stool volume of <700 mL/d excludes the diagnosis of VIPoma.

Next question | Go to summary

Answer Statistics

Times answered: 9174

Test Analysis



Score: 26.58%

Total Answered: 79

Work Smart

Question 80 of 185

A 24-year-old woman has ingested an unknown quantity of paracetamol tablets four hours ago.

She now presents with nausea, vomiting, anorexia, and right subchondral pain.

Which of the following features suggest that she should be transferred to the liver unit?

(Please select 1 option)

○	ALT 800 units/L
○	Blood glucose 5 mmol/L
○	Heart rate 120 BPM
○	pH 7.25 This is the correct answer
◉	Systolic BP 100 mmHg Incorrect answer selected

A pH of less than 7.3 is a poor prognostic factor for this patient.

The criteria for transfer to a specialist unit are:

- encephalopathy
- INR: >2.0 at <48 hours, or >3.5 at <72 hours
- serum creatinine: >200 µmol/L
- blood pH: <7.3
- systolic BP: <80 mmHg.

Work Smart

Question 81 of 185

A 49-year-old female presents with a six-month history of pruritus.

Examintation reveals jaundice, xanthelasma, scratch marks, vitiligo and 3 cm hepatomegaly. She was afebrile.

Liver function tests reveal raised bilirubin, alkaline phosphatase, gamma glutamyl transferase and mildly elevated alanine transaminase and aspartate transaminase.

Which of the following conditions is most likely to be found in this woman?

(Please select 1 option)

○	Constipation
○	Haemolysis
◉	Lymphadenopathy Incorrect answer selected
○	Vitamin A deficiency This is the correct answer
○	Vitamin B complex deficiency

The most likely diagnosis is primary biliary cirrhosis as evidenced by

- pruritus
- hypercholesterolaemia
- jaundice
- raised ALP, and
- γ-GT.

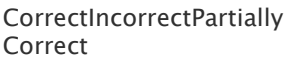
Malabsorption of fat-soluble vitamins (A, D, K) is common.

Next question | Go to summary

Answer Statistics

Times answered: 8154

Test Analysis



Score: 25.93%

Total Answered: 81

Feedback

Work Smart

Question 23 of 50

A 69-year-old man is seen in outpatients. He reports weight loss of 1 stone over three months but his history is otherwise unremarkable.

On examination, his abdomen is soft with no palpable masses. A PR examination is normal.

His blood tests show:

Haemoglobin	80 g/L	(120-160)
MCV	70 fL	(80-96)

Which of the following is the most appropriate investigation for this patient?

(Please select 1 option)

○	Abdominal x ray and colonoscopy
○	CT scan of the abdomen and upper GI endoscopy
○	Sigmoidoscopy and upper GI endoscopy
○	Ultrasound scan of abdomen and colonoscopy
◉	Upper GI endoscopy and colonoscopy Correct

This man has weight loss and an unexplained microcytic anaemia.

The likely site of blood loss is from the GI tract in absence of an alternative explanation.

This may be due to an occult GI malignancy and therefore the initial investigations of choice are

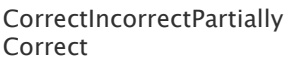
upper and lower GI endoscopy.

Next question | Go to summary

Answer Statistics

Times answered: 9504

Test Analysis



Score: 17.39%

Total Answered: 23

Feedback

Work Smart

Question 82 of 185

A 75-year-old patient presents with watery diarrhoea.

He is passing large volumes of watery diarrhoea, approximately 3 litres a day, with no noticeable blood. It has been present for approximately five months and is gradually becoming more frequent. It often wakes him at night with the urge to defecate.

Liver function tests, calcium and urea and electrolytes are normal. Stool microscopy and culture are normal, and *Clostridium difficile* toxin is negative.

A flexible sigmoidoscopy is organised and the investigator reports to you that the large bowel appears normal. Biopsies demonstrate mild thickening of the subepithelial collagen band with 10 intraepithelial lymphocytes per 100 epithelial cells. Crypt architecture is normal without evidence of cryptitis.

From which of the following treatments may this patient benefit?

(Please select 1 option)

○	Gluten free diet
○	Low residue diet
◉	Oral budesonide Correct
○	Oral cholestyramine
○	Oral prednisolone

In the absence of infection and with this typical history in an elderly individual, the diagnosis is likely to be microscopic colitis.

This does not fulfil the ROME II criteria for IBS.

Although coeliac disease is a possibility, this is unlikely given the patient's age and the presentation.

Microscopic colitis can only be diagnosed by colonoscopy and mucosal biopsy because, macroscopically, the colon appears normal.

The incidence is increasing as the use of colonoscopy increases; almost certainly due to better diagnostic workup. Microscopic colitis is diagnosed in up to 10% of all patients undergoing colonoscopy for unexplained diarrhoea, an incidence which increases to 20% in those aged over 70 years.

Budesonide is the most effective and widely studied agent for inducing (and maintaining) remission in microscopic colitis. It is likely to be more effective (and certainly less toxic) than oral prednisolone.

There are conflicting data on the association between bile acid malabsorption (BAM) and microscopic colitis though more data support an association. Where present BAM (unsurprisingly) worsens diarrhoea.

Cholestyramine is recommended where there is BAM however, there is evidence that even patients without BAM may respond to cholestyramine therapy. Use of 5-ASA compounds, with or without cholestyramine has generated high remission rates (85-91%).

Most treatment algorithms suggest a graded approach starting with antidiarrhoeal agents, cholestyramine and 5-ASAs. More severe (such as here) or non-responsive disease should be treated with budesonide in the first instance and bismuth in the second.

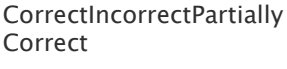
Next question

Go to summary

Answer Statistics

Times answered: 8352

Test Analysis



Work Smart

Question 83 of 185

A 19-year-old student presents with a 15-week history of diarrhoea.

He has lost 2 kg in weight and has had no recent travel abroad.

A smear of a duodenal biopsy reveals many trophozoites.

What is the best treatment option?

(Please select 1 option)

○	Ciprofloxacin
○	Gluten free diet
○	Metronidazole This is the correct answer
◉	Prednisolone Incorrect answer selected
○	Quinine

The diagnosis here is giardiasis caused by *Giardia lamblia*.

Giardia has been reported as a cause of chronic diarrhoea.

Most patients respond to oral metronidazole 250-400 mg tds for five days.

Next question | Go to summary

Work Smart

Question 84 of 185

A 45-year-old gentleman presents with dyspepsia of five months duration and loss of weight.

Examination reveals mild pallor and slight epigastric tenderness.

Gastroscopy reveals 5 mm posterior ulcer in the first part of the duodenum and 2 cm mass on the lesser curve of the stomach. Biopsy of the mass reveals mucosa-associated lymphoid tumour confined to gastric mucosa.

He has tested positive for *H. pylori* infection.

Which of the following treatment options will be appropriate for him?

(Please select 1 option)

○	Chemotherapy
○	*H. pylori* eradication This is the correct answer
○	Proton pump inhibitor
◉	Radiotherapy Incorrect answer selected
○	Surgery

Lymphomas restricted to the gastric mucosa usually disappear when *H. pylori* is eradicated.

These lesions are less likely to respond to *H. pylori* eradication alone if they extend beyond the gastric mucosa. Chemotherapy or surgical excision may then be indicated.

Duodenal ulcer will also disappear with *H. pylori* eradication.

Work Smart

Question 85 of 185

A 35-year-old obese Afro-Caribbean lady presents with abnormal liver function tests. She claims to be a teetotaler and her BMI is 30 kg/m^2.

Investigations reveal the following results:

Haemoglobin	140 g/L	(115-165)
U+Es	Normal	-
Bilirubin	25 µmol/L	(1-22)
Aspartate transaminase	140 U/L	(1-31)
Alanine transaminase	155 U/L	(5-35)
Alkaline phosphatase	160 U/L	(60-110)
Random blood glucose	11.2 mmol/L	(3.0-6.0)
Hepatitis A IgG	Positive	-
Hepatitis B and C screening	Negative	-
Antinuclear antibodies	1:16 titre	-

Ultrasound abdomen reveals hyperechogenic hepatic parenchyma.

Liver biopsy reveals lesions suggestive of alcoholic liver disease.

On review of her notes, liver function tests performed six months previously showed similar values.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Alcoholic liver disease
○	Autoimmune hepatitis
○	Non-alcoholic steatohepatitis This is the correct answer
○	Primary biliary cirrhosis
◉	Viral hepatitis Incorrect answer selected

This is a case of non-alcoholic steatohepatitis, the diagnosis of which is made only by histology of liver biopsy which shows lesions suggestive of ethanol intake in a patient known to consume less than 40 g of alcohol per week.

The diagnosis is supported by the presence of obesity, hyperglycaemia, and hyperechogenic hepatic parenchyma.

In alcoholic hepatitis, the AST is normally raised more than the ALT typically with a ratio of at least 2:1.

Next question Go to summary

Answer Statistics

Times answered: 8816

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Question 86 of 185

A patient is referred to hepatology department for possible treatment of hepatitis B.

He has stigmata of chronic liver disease. There is portal hypertension and ascites. His INR is 2.2 (<1.4) and albumin 25 g/L (37-49). HBsAg and HBeAg positive. Hepatitis C screen is negative.

What will you suggest for treatment?

(Please select 1 option)

○	Beta interferon
○	Entecavir This is the correct answer
○	Lamivudine plus interferon
○	Ribavirin alone
◉	Ribavirin plus interferon Incorrect answer selected

This patient has hepatitis B related decompensated liver disease. High viral load is associated with poorer prognosis for these patients, and therefore prompt treatment with antivirals can improve outlook. Entecavir or tenofovir are the most appropriate medications and can be used in combination. However, their use in this situation is not without risk and may precipitate a lactic acidosis so careful monitoring is required

Interferon use is discouraged for patients with hepatic decompensation associated with hepatitis B, as it has been associated with life-threatening disease flares and infectious complications.

Lamivudine alone is safe in decompensated HBV infection however it is no longer the drug of choice

in this setting as there is increasing concern with regard to lamivudine resistance. Additionally, entecavir and tenofovir give more rapid control of HBV DNA levels.

Ribavirin is used for hepatitis C infection. Its combination with interferon confers more success in treating HCV infection.

References & Further Reading:

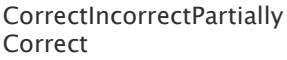
[Treatment of Hepatitis B in Decompensated Liver Cirrhosis]

Next question | Go to summary

Answer Statistics

Times answered: 9092

Test Analysis



Score: 25.58%

Work Smart

Question 87 of 185

Which one of the following requires urgent referral for upper endoscopy?

(Please select 1 option)

○	A 35-year-old male who has a history of waterbrash and dyspepsia which has responded to a course of ranitidine but since stopping has recurred
○	A 45-year-old male with a one month history of persistent dyspepsia
○	A 56-year-old male with a one month history of dyspepsia and a pulsatile central abdominal mass
○	A 62-year-old male with a three month history of unexplained weight loss, tenesmus and a right abdominal mass
◉	A 73-year-old male with a three month history of dyspepsia which has failed to respond to a course of proton pump inhibitors Correct

Criteria for referral for urgent endoscopy include

- Dysphagia (at any age)
- Dyspepsia at any age combined with any one of weight loss, anaemia or vomiting
- Dyspepsia in a patient aged 55 or above with onset of dyspepsia within one year and persistent symptoms
- Dyspepsia with one of Barrett's oesophagus, family history of upper gastrointestinal (GI) carcinoma, pernicious anaemia or upper GI surgery more than 20 years ago
- Jaundice
- Abdominal mass.

With regard to the presented cases, the 56-year-old man has dyspepsia with what seems to be an aortic aneurysm. This requires an ultrasound and vascular opinion.

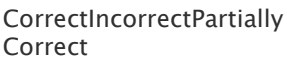
In the case of unexplained weight loss, tenesmus and upper right mass the problem is likely to be a colonic carcinoma.

Next question | Go to summary

Answer Statistics

Times answered: 8823

Test Analysis



Score: 26.44%

Total Answered: 87

Work Smart

Exam Themes May 2006

Question 88 of 185

A 61-year-old man has a 2 cm adenoma removed from his sigmoid colon.

The biopsy results confirm an adenocarcinoma in situ with moderately differentiated dysplastic cells. The pathology report confirms total excision with clear resection margins.

What is the most appropriate follow-up management for this patient?

(Please select 1 option)

○	Annual carcinoembryonic antigen (CEA)
○	Chemotherapy
○	No follow up
○	Regular follow up with colonoscopy This is the correct answer
◉	Regular follow up with no colonoscopy Incorrect answer selected

The first thing to note is that the question is about planned management

This patient has been picked up early and has had a tumour resected. His CEA would be normal and would not be expected to be elevated until the disease was quite established on the TNM scale.

However, this patient's prognosis would be excellent but he is by definition someone with increased risk. Therefore he should continue to be reviewed with colonoscopy annually for at least two years.

Work Smart

Core Questions

Question 89 of 185

A 38-year-old woman presents with a recent history of pruritus, fatigue, and jaundice.

Liver biopsy revealed periportal fibrosis with periportal inflammation and prominent enlargement of the portal tracts.

Which one of the following antibodies is most likely to be found in the blood?

(Please select 1 option)

○	Anticardiolipin
○	Anticentromere
◉	Antimitochondrial Correct
○	Antimyeloperoxidase
○	Antinuclear

Primary biliary cirrhosis (PBC) is a slowly progressive autoimmune disease of the liver that primarily affects women in their fifth decade.

It is characterised by portal inflammation and immune-mediated destruction of the intrahepatic bile ducts which results in reduced bile secretion and retention of toxic substances. This leads to further hepatic damage, fibrosis, and cirrhosis.

Serologically, PBC is characterised by antimitochondrial antibodies, which are present in 90-95% of patients (often before clinical signs develop) and have a specificity of 98%.

These antibodies are specific for the E2 subunit of the pyruvate dehydrogenase complex and it is

unclear why they affect only the liver when all nucleated cells contain mitochondria. Twin and family studies suggest there is a significant genetic predisposition. Treatment is empirical and patients may go on to require a liver transplant.

Anticardiolipin antibodies are most commonly associated with antiphospholipid syndrome which increases the risk of thrombosis.

Anticentromere antibodies are associated with limited systemic sclerosis.

Myeloperoxidase is the antigen which p-ANCA (antineutrophil cytoplasmic antibodies) targets. It is associated with a number of vasculitides but most classically microscopic polyangiitis.

Antinuclear antibodies are associated with 80-90% of cases of systemic lupus erythematosus but are also found with Sjögren's syndrome, rheumatoid arthritis, autoimmune hepatitis, systemic sclerosis, and polymyositis, and dermatomyositis.

Reference:

1. Hirschfield GM, et al. Primary biliary cirrhosis associated with HLA, IL12A, and IL12RB2 variants. *N Engl J Med.* 2009;360:2544-55.
2. Kaplan MM, Gershwin ME. Primary biliary cirrhosis. *N Engl J Med.* 2005;353:1261-73.

Next question

Go to summary

Answer Statistics

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Question 24 of 50

A 72-year-old man is discharged from hospital following a stroke.

During his stay, he was started on several new medications. He presents with diarrhoea.

Which of the following medications is most likely to be the cause?

(Please select 1 option)

○	Clopidogrel
○	Enalapril
○	Metformin This is the correct answer
◉	Pioglitazone Incorrect answer selected
○	Simvastatin

Although all the medications listed could cause gastrointestinal disturbances, it is metformin that is by far the most likely.

Next question | Go to summary

Answer Statistics

1 6%

Work Smart

Question 90 of 185

A 58-year-old man presents to your clinic with dysphagia for solids for the past three months. He also complains of weight loss and loss of appetite. There is no other past medical history, apart from symptoms of indigestion and heartburn for the past five years.

He regularly takes Gaviscon and Rennie tablets. He is a heavy smoker and a regular drinker. He undergoes endoscopy, which reveals a small tumour at the lower end of the oesophagus.

What is the most likely aetiological cause for the tumour?

(Please select 1 option)

○	Alcohol
◉	Barrett's oesophagus Correct
○	*Helicobacter pylori*
○	Oesophageal candidiasis
○	Oesophageal pouch

The history suggests a five-year history of gastro-oesophageal reflux.

This can cause metaplasia of the oesophageal mucosa, resulting in replacement of the normal squamous epithelium with columnar epithelium (also known as Barrett's oesophagus), which is a premalignant state. Surveillance endoscopies are recommended every two to five years, depending on the length of the Barrett's segment, for metaplasia. The detection of dysplasia prompts more intense surveillance or therapeutic intervention.

The development of dysphagia for solids and weight loss suggests the presence of oesophageal carcinoma.

Further Reading:

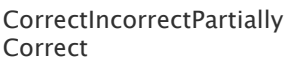
British Society of Gastroenterology. Guidelines for the diagnosis and management of Barrett's columnar-lined oesophagus.

Next question | Go to summary

Answer Statistics

Times answered: 9258

Test Analysis



Score: 27.78%

Total Answered: 90

Work Smart

Question 91 of 185

A man is admitted with acute abdominal pain and vomiting. He is diagnosed and treated for acute pancreatitis.

Which of the following features is associated with a worse prognosis in acute pancreatitis?

(Please select 1 option)

○	Plasma glucose of 11.1 mmol/L (3.5-5.5) This is the correct answer
○	Plasma sodium of 125 mmol/L (133-144)
○	Serum amylase of 1200 IU/L (24-100)
○	The patient is 50 years of age
◉	White cell count of 13.9 $\times 10^9$/L Incorrect answer selected

There are a number of criteria used in the Ranson's scoring system which reflect prognosis associated with acute pancreatitis.

Ranson's criteria on admission that signify a worse prognosis include:

Criteria present at 0 hours:

- Age >55 years old - 1 point
- WBC >16 $\times 10^9$ - 1 point
- Glucose >11.1 mmol/L - 1 point
- LDH >350 U/L - 1 point
- AST >250 U/L - 1 point

Criteria present at 48 hours:

- Hematocrit fall of 10% or greater - 1 point
- Urea rise of 1.8 mmol/L or more despite fluids - 1 point
- Serum Calcium <2 mmol/L - 1 point
- pO2 <60 mmHg - 1 point
- Base deficit >4 meq/L - 1 point
- Fluid sequestration >6000 mL - 1 point

Next question | Go to summary

Answer Statistics

Times answered: 6500

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Question 92 of 185

A 52-year-old male is admitted with vomiting and acute epigastric abdominal pain which radiates through to his back. Investigations confirm severe acute pancreatitis.

Which of the following figures most accurately reflect the mortality associated with severe acute pancreatitis?

(Please select 1 option)

○	Less than 5%
○	Approximately 10%
○	Approximately 20% This is the correct answer
○	Approximately 30%
◉	Approximately 40% Incorrect answer selected

Mortality in acute pancreatitis varies according to age, comorbitities and severity and is scored through the Ranson scoring system.

However, average mortality with severe disease has remained pretty much unchanged over the last two decades, and is approximately 20%.

Next question | Go to summary

Work Smart

Question 93 of 185

A 64-year-old lady presents with symptoms suggestive of irritable bowel syndrome.

Which of the following would represent a 'red flag' indicator and prompt further investigation?

(Please select 1 option)

○	A recent change to more frequent stools in the last two months	This is the correct answer
○	Abdominal pain	
○	Bloating	
○	Change in bowel habit present for at least the last two years	
◉	Weight gain	Incorrect answer selected

The 'red flag' indicators are listed in the NICE guidelines as:

- unintentional and unintended weight loss
- rectal bleeding
- a family history of bowel or ovarian cancer, and
- a change in bowel habit to looser and/or more frequent stools persisting for more than six weeks in a person aged over 60 years.

Also on clinical examination, the other 'red flag' indicators are:

- anaemia
- abdominal mass

- rectal mass, and
- inflammatory markers for inflammatory bowel disease.

Reference:

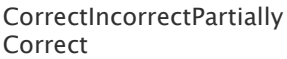
NICE: Irritable bowel syndrome in adults (CG61).

Next question | Go to summary

Answer Statistics

Times answered: 8140

Test Analysis



Score: 26.88%

Total Answered: 93

Work Smart

Question 94 of 185

A 68-year-old man presents with a history of abdominal discomfort that is relieved by passing flatus and stool.

His symptoms have been present on and off for six or seven years and have improved with the reduction of dairy products in his diet. In the past month, his stools have been looser in nature but there is no passage of blood or mucus.

He has lost 3 kg in weight over the last month and his appetite is reduced. There is no family history of note.

Examination of the abdomen is unremarkable and rectal examination is normal.

Which ONE of the following is the most appropriate diagnostic investigation?

(Please select 1 option)

◉	Barium enema Incorrect answer selected
○	Barium follow through
○	Colonoscopy This is the correct answer
○	CT scan of the abdomen and pelvis
○	Flexible sigmoidoscopy

This man may have irritable bowel syndrome or diverticular disease.

The symptoms of benign disease and malignancy are frequently similar and malignancy may arise equally in patients with a long or short history of a change in bowel habit. Change in bowel habit due

to malignancy may arise due to the partially obstructing effects of a bowel cancer and is always significant.

Weight loss may be caused by dietary modification but may also indicate metastatic spread of a cancer.

A diagnosis of colon cancer, diverticular disease, or colonic inflammation is most readily excluded by colonoscopy and biopsy and this is initially the most helpful investigation.

Flexible sigmoidoscopy is helpful in the investigation of patients with symptoms typical of benign anorectal disease such as painful bright red bleeding during or after the passage of a stool but colonoscopy remains the preferred investigation for a possible cancer, inflammatory bowel disease or diverticular disease.

If colonoscopy is normal the patient will require further investigation of his symptoms.

Irritable bowel syndrome remains a diagnosis of exclusion.

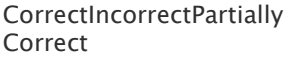
Next question

Go to summary

Answer Statistics

Times answered: 8371

Test Analysis



Work Smart

Question 95 of 185

A 60-year-old lady has a six-month history of abdominal discomfort, bloating and altered frequency in stools.

Her symptoms seem to be worse following a large meal when she also feels nauseated. Clinical examination is normal. She is suspected of fulfilling the criteria for irritable bowel syndrome.

Which of the following investigations should be undertaken to exclude other diagnoses?

(Please select 1 option)

○	Anti-tissue transglutaminase (TTG) antibodies This is the correct answer
○	Faecal occult blood
◉	Faecal ova/parasite tests Incorrect answer selected
○	Sigmoidoscopy
○	Thyroid function test

Patients who fulfil the diagnostic criteria for irritable bowel syndrome should be screened for other conditions with:

- full blood count (FBC)
- erythrocyte sedimentation rate (ESR) (or plasma viscosity)
- C-reactive protein (CRP)
- anti-endomysial antibodies (EMA), and
- tissue transglutaminase (TTG) antibodies.

This lady's presentation fits with a diagnosis of coeliac disease, which can present at any age (although peaks occur in babies and in the third decade).

In the UK 1% - 2% of the population are affected but many cases go under-diagnosed. The condition is caused by an immunological reaction to the gliadin fraction of wheat which provokes an inflammatory response and results in partial or total villous atrophy in the proximal small bowel (which resolves with a gluten-free diet).

HLA DQ2 is present in 90-95% of Caucasian patients with coeliac disease, the majority of the remainder have HLA DQ8. HLA-DQ2 is present in 20-30% of the Caucasian population and the possession of this HLA antigen alone is insufficient for development of coeliac disease.

Patients with coeliac disease present with diarrhoea, oral ulcers, weight loss, malaise, and abdominal pain. Nutritional deficiencies can result in neurological symptoms (ataxia, weakness, paraesthesia) and amenorrhoea. Folate, B12, or iron deficiency can be present as can osteomalacia and abnormal liver function tests. Some patients have dermatitis herpetiformis (an itchy rash mainly affecting the extensor aspects of the elbows).

Diagnosis is with anti-endomysial or tissue transglutaminase antibodies and upper GI endoscopy with duodenal biopsy. Treatment is by strict avoidance of wheat, rye, and barley. Folate, iron and calcium supplements may be required. Antibodies typically become negative if there is good compliance with a gluten-free diet.

There is no history of tropical travel so parasite infection is less likely here.

You would expect other symptoms to be described if this patient has hyperthyroidism.

This history is not classical for lower gastrointestinal malignancy and therefore sigmoidoscopy and faecal occult blood are less likely to reveal the underlying diagnosis here.

Next question

Go to summary

Answer Statistics

Times answered: 8462

Work Smart

Question 96 of 185

Which of the following gut hormones stimulates acid secretion in the stomach?

(Please select 1 option)

○	Cholecystokinin (CCK)
○	Gastrin This is the correct answer
◉	Polypeptide P Incorrect answer selected
○	Secretin
○	Vasoactive intestinal peptide (VIP)

Gastrin is secreted from the antrum of the stomach when stimulated by parasympathetic nerves and the presence of amino acids in the stomach.

It stimulates gastric motility, growth and acid secretion, and intestinal motility.

The secretion of gastrin is inhibited by acid in stomach and somatostatin.

Next question | Go to summary

Answer Statistics

1 4%

Work Smart

Question 25 of 50

Which of the following stimulates bicarbonate secretion from the pancreas and liver?

(Please select 1 option)

○	Cholecystokinin (CCK)
○	Gastrin
○	Motilin
○	Secretin This is the correct answer
◉	Vasoactive intestinal peptide (VIP) Incorrect answer selected

Secretin is secreted from the small intestine when there is acid in the small intestine. It inhibits gastric motility and acid production and stimulates bicarbonate secretion from the pancreas and liver.

CCK stimulates gallbladder emptying and pancreatic enzyme release.

Gastrin stimulates gastric acid secretion and gastric motility.

Motilin stimulates intestinal peristalsis.

VIP induces smooth muscle relaxation, stimulates secretion of water into pancreatic juice and bile, and causes inhibition of gastric acid secretion; whilst in the intestine, it greatly stimulates secretion of water and electrolytes.

Work Smart

Exam Themes May 2001

Question 26 of 50

Which of the following statements regarding jejunal biopsy is correct?

(Please select 1 option)

○	Electron microscopy is necessary to confirm the presence of villous atrophy
○	In tropical countries apparently healthy people have a mucosal structure which would be regarded as abnormal in Europe
○	It can be used to diagnose Whipple's disease This is the correct answer
○	It is contraindicated over the age of 70 years
⊙	Sub-total villous atrophy is diagnostic of gluten-sensitive enteropathy and is not found in other conditions Incorrect answer selected

Subtotal villous atrophy is seen in a number of conditions other than coeliac disease, such as:

- severe tropical sprue
- cow's milk/soya sensitivity in children
- gastroenteritis
- Whipple's disease
- hypogammaglobulinaemia
- neomycin therapy
- laxative abuse, and
- Norwalk agent.

The villous atrophy may be seen with a magnifying glass.

Apparently healthy people with a mucosal structure that would be regarded as abnormal in Europe would not be 'healthy'.

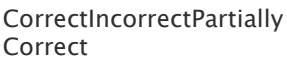
There is a group of patients who present with coeliac disease in older age - sometimes in their 90s. They present with iron deficiency anaemia, osteoporosis or weight loss.

Next question | Go to summary

Answer Statistics

Times answered: 8997

Test Analysis



Score: 15.38%

Total Answered: 26

Work Smart

Question 97 of 185

A study comparing contrast CT colonography with the reference technique of colonoscopy for large bowel carcinoma reveals the following data in 400 patients:

Investigation	CT Positive	CT Negative
Colonoscopy positive	30	10
Colonoscopy negative	20	340

Which one of the following most accurately describes the performance of CT versus colonoscopy for the diagnosis of large bowel cancer?

(Please select 1 option)

○	There are 10 false positives
○	There are 20 false positives This is the correct answer
◉	There are 20 true negatives Incorrect answer selected
○	There are 340 false negatives
○	There are 370 false negatives

In this question, colonoscopy is the reference standard whilst CT colonography is the new test being evaluated.

There are 40 patients with bowel cancer as identified by colonoscopy. CT scanning correctly identifies 30 of these (true positives) but fails to identify 10 (false negatives). There are 360 patients without the

disease with 20 identified as having cancer by CT (false positives), the remaining 340 are true negatives.

This is perhaps best illustrated by annotating the table from above:

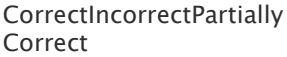
		New Test	
		CT Positive	CT Negative
Reference Standard	Colonoscopy +	30 (*True Positive*)	10 (*False Negative*)
	Colonoscopy −	20 (*False Positive*)	340 (*True Negative*)

Next question | Go to summary

Answer Statistics

Times answered: 9268

Test Analysis



Work Smart

Question 98 of 185

A 17-year- old girl is commenced on nasogastric feeding due to severe anorexia nervosa. Five days later she becomes increasingly confused.

On examination, she was apyrexial, appeared appropriately hydrated, with a pulse of 98 beats per minute, and blood pressure 96/60 mmHg.

Which one of the following investigations should be requested forthwith?

(Please select 1 option)

○	Arterial blood gases
○	Serum calcium
○	Serum phosphate This is the correct answer
◉	Serum sodium Incorrect answer selected
○	Vitamin B concentrations

The patient appears to have developed refeeding syndrome.

Refeeding malnourished patients increases basal metabolic rate, with glucose being the predominant energy source.

This anabolic response causes intracellular movement of minerals, and serum levels may fall significantly. These rapid changes in metabolism and electrolyte movement may lead to severe cardiorespiratory and neurological problems resulting in:

- cardiac and respiratory failure
- oedema
- lethargy
- confusion
- coma
- convulsions, and
- death.

The symptoms of refeeding syndrome are thought to be due predominantly to hypophosphataemia, but metabolic changes in potassium, magnesium, glucose, and thiamine can also contribute.

The probable answer here is therefore phosphate, as hypophosphataemia seems probable.

Calcium depletion is possible but there is absence of tetany.

Zinc deficiency causes skin rashes periorally and around nostrils.

It is extremely difficult to measure vitamin B concentrations, plus her presentation does not sound like Wernicke's neuro-ophthalmological features.

Reference:

Mehanna HM, Moledina J, Travis J. Refeeding syndrome: what it is, and how to prevent and treat it. *BMJ.* 2008;336:1495.

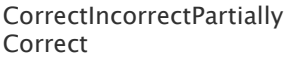
Next question

Go to summary

Answer Statistics

Times answered: 8700

Test Analysis



Work Smart

Question 27 of 50

A 20-year-old woman was referred for investigation of iron deficiency anaemia. Her mother died aged 28 years from colonic carcinoma complicating Peutz-Jegher syndrome.

Which is the most likely mode of inheritance of Peutz-Jegher syndrome?

(Please select 1 option)

○	Autosomal dominant This is the correct answer
○	Autosomal recessive
○	Mitochondrial
◉	Polygenic Incorrect answer selected
○	X linked dominant

Peutz-Jegher syndrome is a condition characterised by perioral pigmentation and numerous hamartomas of the bowel.

Originally it was assumed that these did not predispose to malignancy but studies now suggest the contrary.

The condition is autosomal dominant.

Next question | Go to summary

Work Smart

Question 99 of 185

A 51-year-old male labourer presents with a haematemesis and undergoes urgent upper GI endoscopy.

Using the Rockall score, which one of the following features would categorise him into a high-risk group for a subject presenting with GI bleed?

(Please select 1 option)

○	A blood pressure of 134/88 mmHg
○	A history of ischaemic heart disease This is the correct answer
○	A plasma glucose of 7.2 mmol/L
○	A pulse of 90 beats per minute
◉	His age Incorrect answer selected

There are a number of available scoring systems which stratify subjects with gastrointestinal bleed into high and low-risk groups.

The Rockall scoring system is based on:

- age (the higher the age the worse the prognosis)
- comorbidities, e.g. ischaemic heart disease (IHD)
- presence of shock, and
- endoscopic abnormalities.

The Canadian Consensus Conference Statement utilises a similar system, incorporating endoscopic factors including:

- active bleeding
- major stigmata of recent haemorrhage
- ulcers greater than 2 cm in diameter, and
- the location of ulcers in proximity to large arteries.

The Baylor bleeding score attaches a score to pre- and post-endoscopic features.

The Blatchford score is based on clinical parameters alone:

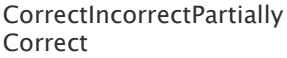
- elevated blood urea nitrogen
- reduced haemoglobin
- a drop in systolic blood pressure
- raised pulse rate
- the presence of melaena or syncope, and
- evidence of hepatic or cardiac disease.

Next question | Go to summary

Answer Statistics

Times answered: 9031

Test Analysis



Work Smart

Question 28 of 50

A patient presents with haematemesis. An oesophagogastroduodenoscopy detects a bleed in the lesser curvature of the stomach.

Which of the following arteries is most likely to be the cause of the bleeding?

(Please select 1 option)

○	Left gastro-omental artery
○	Pancreaticoduodenal artery
◉	Right gastric artery Correct
○	Right hepatic artery
○	Splenic artery

The pancreaticoduodenal artery supplies mainly the upper and lower duodenum and the head of the pancreas.

The gastro-omental arteries supply the greater curvature of the stomach.

The right gastric artery arises from the hepatic artery or the left hepatic artery supplies the pylorus and travels along the lesser curvature of the stomach, supplying it, and anastomosing with the left gastric artery.

Work Smart

Core Questions

Question 29 of 50

A patient presents with haematemesis.

An oesophagogastroduodenoscopy detects a bleed in the greater curvature of the stomach.

Which of the following arteries is most likely to be the source of the bleeding?

(Please select 1 option)

○	Cystic artery
○	Right gastric artery
○	Right hepatic artery
◉	Left gastroepiploic artery Correct
○	Superior pancreaticoduodenal artery

The superior pancreaticoduodenal artery, a branch of the gastroduodenal artery, supplies the head of the pancreas and the upper duodenum and anastomoses with the inferior pancreaticoduodenal artery.

The right hepatic artery supplies the right lobe of the liver and part of the caudate lobe.

The right gastric artery is mainly found to supply the pylorus and the lesser curvature of the stomach.

The right and left gastroepiploic arteries supply the greater curvature of the stomach.

Work Smart

Question 100 of 185

In which part of the body is conjugated bilirubin metabolised to urobilinogen?

(Please select 1 option)

○	Common bile duct
○	Hepatic sinusoids
○	Large intestine This is the correct answer
○	Small intestine
◉	Splenic macrophages Incorrect answer selected

Unconjugated bilirubin is conjugated to glucuronic acid in the hepatocyte.

Conjugated bilirubin passes into the enterohepatic circulation and the bilirubin which evades this system is metabolised by bacteria, primarily in the large intestine, to urobilinogen, then stercobilinogen and eventually oxidised to stercobilin.

Stercobilin gives faeces its brown colour.

Next question | Go to summary

Answer Statistics

Work Smart

Question 101 of 185

A 58-year-old female with type 2 diabetes is admitted with diarrhoea and vomiting. She has noticed small amounts of blood in her stools. The vomiting had commenced one day after a meal of chicken and chips.

The patient's type 2 diabetes is treated with diet alone. Stool cultures taken by the GP reveal *Campylobacter jejuni*.

Which of the following is the most appropriate therapy?

(Please select 1 option)

○	Amoxicillin
○	Cefaclor
◉	IV fluids Correct
○	Metronidazole
○	Trimethoprim

Campylobacter is a leading cause of diarrhoeal illness, often caused by ingestion of undercooked meat harbouring the pathogen. It is also a major cause of traveller's diarrhoea.

The use of antibiotic therapy for the management of *Campylobacter* infection in adults is controversial. Antibiotic of choice in this infection is erythromycin, although ciprofloxacin and tetracycline may also be appropriate.

However, appropriate fluid replacement and anti-emetics are initially indicated; most units advocate

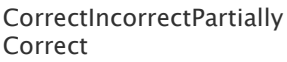
no antibiotic treatment.

Next question | Go to summary

Answer Statistics

Times answered: 8186

Test Analysis



Score: 25.74%

Total Answered: 101

Feedback

Work Smart

Question 102 of 185

A 17-year-old man presents to the Emergency Department complaining of intense pain on defecation, which persists for some hours after the event. The pain recurs with each bowel movement, and is so severe that he is now scared to defecate.

He is passing harder stools over the past few months and has noticed fresh blood on the paper and occasionally even drips of blood into the toilet.

From the history, which of the following is the most likely diagnosis?

(Please select 1 option)

○	Anal fissure This is the correct answer
○	Crohn's disease
○	Irritable bowel syndrome
◉	Rectal carcinoma Incorrect answer selected
○	Ulcerative colitis

The history is of an anal fissure, which arises as a mucosal tear following passage of a hard stool. Most anal fissures occur in the posterior midline.

The majority of cases respond to conservative therapy which includes stool softeners and bulking agents.

Topical GTN treatment may also be useful for sphincter relaxation.

Surgery is reserved for resistant cases.

Work Smart

Core Questions

Question 103 of 185

A 24-year-old man has returned a few days earlier from a Nile cruise.

He has begun suffering from profuse bloody diarrhoea. He opens his bowels several times per day, and blood and mucus are mixed in with the motion each time. He is also complaining of dull abdominal pain.

There is no past medical history of note. On further questioning, he admits to buying fruit from local stalls on the river side. On examination, he is pyrexial 37.8°C, and has generalised lower abdominal tenderness.

Investigations show:

Haemoglobin	121 g/L	(135-180)
White cell count	11.4 $\times 10^{9}$/L	(4-10)
Platelets	204 $\times 10^{9}$/L	(150-400)
Sodium	139 mmol/L	(134-143)
Potassium	3.9 mmol/L	(3.5-5)
Creatinine	125 µmol/L	(60-120)
Stool	Blood	
	White cells ++	
	Trophozoites	

Which of the following is the most appropriate initial therapy?

(Please select 1 option)

◉	IV cefotaxime Incorrect answer selected
○	Oral ciprofloxacin
○	Oral diloxanide
○	Oral metronidazole This is the correct answer
○	Supportive therapy only with fluid resuscitation

This man has amoebic dysentery which occurs around seven days after exposure to *Entamoeba histolytica*.

Acute amoebic dysentery is managed with a course of oral metronidazole or tinidazole, to be followed by a ten-day course of diloxanide to eradicate colonisation of the gut.

With appropriate diagnosis and treatment, mortality from amoebiasis is less than 1%.

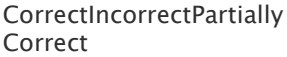
Amoebic liver abscess may appear at any time from eight weeks after infection, and presents with night sweats, anorexia, and right upper quadrant pain.

Next question | Go to summary

Answer Statistics

Times answered: 6764

Test Analysis



Work Smart

Question 104 of 185

A 41-year-old woman comes to the gastroenterology clinic for review. She underwent extensive resection of her distal small bowel for Crohn's disease around three months earlier.

She is still suffering from diarrhoea and is worried that her Crohn's disease is still active. On examination, her BP is 105/70 mmHg with a pulse of 80. Her abdomen is soft and non-tender.

Investigations show:

Haemoglobin	104 g/L	(135-180)
White cell count	4.5 $\times 10^{9}$/L	(4-10)
Platelets	195 $\times 10^{9}$/L	(150-400)
Sodium	138 mmol/L	(134-143)
Potassium	3.4 mmol/L	(3.5-5)
Creatinine	140 µmol/L	(60-120)
C reactive protein	9 mg/L	(<10)

Which of the following is the most likely diagnosis?

(Please select 1 option)

◉	Active Crohn's disease	Incorrect answer selected
○	Bacterial overgrowth syndrome	
○	Bile acid diarrhoea	This is the correct answer

○	Ischaemic colitis
○	Short bowel syndrome

We are told that this patient has undergone extensive distal small bowel resection, but she does not have an ileostomy. As such, it is most likely that she has colonic bile acid irritation leading to diarrhoea.

Short bowel syndrome is usually associated with voluminous diarrhoea of up to 5 litres per day, normally through the ileostomy outlet.

There is no indication of active Crohn's disease, and bacterial overgrowth syndrome is usually associated with symptoms of abdominal bloating.

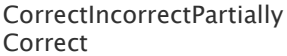
Cholestyramine may be effective for the treatment of bile acid diarrhoea.

Next question | Go to summary

Answer Statistics

Times answered: 6393

Test Analysis



Work Smart

Question 105 of 185

A 32-year-old woman has presented to the Emergency Department for the third time with abdominal pain which typically lasts several days. The previous two occasions she has been discharged home without a firm diagnosis. Between episodes, the patient is symptom-free. She complains of feeling anxious.

She has recently restarted the combined oral contraceptive pill after completing her family.

On examination, she is anxious and hypertensive at 155/98 mmHg with a pulse of 102. She has no rashes. Her abdomen is diffusely tender.

Investigations show:

Haemoglobin	128 g/L	(135-180)
White cell count	8.1 $\times 10^{9}$/L	(4-10)
Platelets	220 $\times 10^{9}$/L	(150-400)
Sodium	135 mmol/L	(134-143)
Potassium	3.9 mmol/L	(3.5-5)
Creatinine	100 µmol/L	(60-120)

Which of the following is the most likely diagnosis?

(Please select 1 option)

- ◉ Acute intermittent porphyria □ Correct
- ○ Appendicitis

○	Depression
○	Porphyria cutanea tarda
○	Variegate porphyria

Acute intermittent porphyria (AIP) is a rare disorder characterised by abdominal pain and neuropsychiatric symptoms which usually presents in the 20-40 age group.

Rash is not a feature of AIP, unlike other porphyrias. Hypertension and tachycardia are common examination findings.

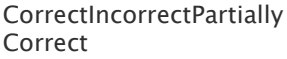
The progesterone component of the combined oral contraceptive pill is known to precipitate porphyria attacks. Many other drugs have been described in association with an attack.

Next question | Go to summary

Answer Statistics

Times answered: 6752

Test Analysis



Work Smart

Core Questions

Question 106 of 185

A 21-year-old anorexic is admitted for parenteral nutrition and has a tunnelled line inserted.

A few days after parenteral feeding has begun you are asked to see her as she has begun complaining of diplopia, lethargy and muscle weakness. She also has paraesthesia affecting her hands and feet.

Examination confirms global muscle weakness and peripheral sensory loss.

Which of the following electrolyte abnormalities is the most likely to have occurred?

(Please select 1 option)

○	Hyperkalaemia
○	Hypermagnesaemia
○	Hyperphosphataemia
○	Hypocalcaemia
◉	Hypophosphataemia Correct

This patient is suffering from re-feeding syndrome, where patients complain of a range of symptoms which can include:

- muscle weakness
- peripheral neuropathy
- neurological impairment, and
- myocardial depression.

It is characterised by a fall in phosphate, magnesium, potassium and fluid accumulation, which in combination can lead to cardiac failure.

Patients at risk from re-feeding include those who are fed after a prolonged period of starvation, such as those with anorexia and those with chronic alcoholism.

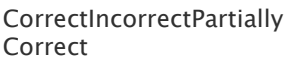
The key to avoiding re-feeding syndrome and hypophosphataemia is involvement of a specialist dietician who will be able to advise on adequate phosphate replacement during the initial stages of re-feeding.

Next question | Go to summary

Answer Statistics

Times answered: 6358

Test Analysis



Work Smart

Question 30 of 50

A 35-year-old woman comes to the clinic for review. She has been suffering from abdominal bloating, very strongly smelling bowel gas and intermittent diarrhoea over the past two months since returning from honeymoon in Africa.

On examination, her BP is 125/82 mmHg, and her temperature is 37.2°C. Her BMI is 23 kg/m^2, and her abdomen is mildly distended.

Investigations show:

Hb	111 g/L	(135-180)
WCC	8.1 ×10 ^{9}/L	(4-10)
PLT	271 ×10 ^{9}/L	(150-400)
Na	139 mmol/L	(134-143)
K	4.6 mmol/L	(3.5-5)
Cr	104 µmol/L	(60-120)

Stool sample: Trophozoites in the fresh stool sample.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Giardiasis	This is the correct answer
◉	Schistosomiasis	Incorrect answer selected
○		

	Shigellosis
○	Tropical sprue
○	Whipple's disease

The history of abdominal bloating with intermittent diarrhoea and strong smelling bowel gas is typical of giardiasis. As long as a fresh stool sample is examined, trophozoites are found in 60%+ of samples.

A single dose of tinidazole or a course of metronidazole is the treatment of choice.

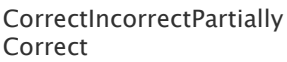
Adequate sanitation is the key to reducing the risk of infection, although the infection rate from uncooked foods is high in areas where *Giardia* is endemic.

Next question | Go to summary

Answer Statistics

Times answered: 6757

Test Analysis



Work Smart

Question 107 of 185

A 27-year-old woman presents to the Emergency Department very agitated, complaining of abdominal pain. This has been her third attendance over the past six months, and each time there have been no significant findings. Her only medication of note is the oral contraceptive pill.

On this occasion her BP is elevated 155/90 mmHg, her pulse is 92, and her temperature is 37.8°C. Her abdomen is generally tender but soft, and she has active bowel sounds. She complains of lower limb weakness, and she appears to have 4/5 power weakness below the knee.

Investigations show:

Hb	134 g/L	(135-180)
WCC	10.2 $\times 10^{9}$/L	(4-10)
PLT	194 $\times 10^{9}$/L	(150-400)
Na	132 mmol/L	(134-143)
K	4.4 mmol/L	(3.5-5)
Cr	110 µmol/L	(60-120)

Which of the following is the most likely diagnosis?

(Please select 1 option)

⊙	Acute intermittent porphyria Correct
○	Mesenteric adenitis
○	Münchausen's disease

○	Somatisation disorder
○	Variegate porphyria

Acute intermittent porphyria (AIP) is associated with:

- hypertension
- a mild increase in temperature
- non-specific abdominal pain, and
- hyponatraemia.

Patients feel normal between attacks, and the disease itself is due to accumulation of both porphobilinogen and amino-levulinic acid.

In general, drugs that lead to increased activity of the hepatic P450 system, such as phenobarbital, sulfonamides, oestrogens, and alcohol, are associated with increased risk of acute attacks.

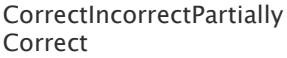
The risk of other drugs is difficult to predict, and lists of agents thought to precipitate acute porphyria are available from the internet.

Next question | Go to summary

Answer Statistics

Times answered: 6718

Test Analysis



Work Smart

Question 108 of 185

A 17-year-old man presents to the clinic with intermittent severe pain when passing a motion, accompanied by bright red rectal bleeding. The pain often lasts for hours afterwards and he is afraid of going to the toilet.

He says he does not like eating fruit and vegetables and that his motion is usually very hard and he only passes faeces every two to three days. He has not lost any weight and otherwise feels well, holding down a job in a computer shop whilst doing his A levels.

His BP is 122/72 mmHg, pulse is 72, general physical examination is normal.

Investigations show:

Hb	131 g/L	(135-180)
WCC	6.2 $\times 10^{9}$/L	(4-10)
PLT	203 $\times 10^{9}$/L	(150-400)
Na	138 mmol/L	(134-143)
K	4.4 mmol/L	(3.5-5)
Cr	102 µmol/L	(60-120)

Given these findings, which of the following is the most likely diagnosis?

(Please select 1 option)

○	Anal fissure This is the correct answer
○	Anal fistula

◉	Irritable bowel syndrome	☐ Incorrect answer selected
○	Piles	
○	Ulcerative colitis	

Paroxysms of pain, accompanied by episodes of bleeding are typical of anal fissure. The initiating factor for formation of an anal fissure is thought to be passage of a particularly hard motion which leads to trauma.

In most people, acute tears in the anal mucosa heal spontaneously but in some, they lead to a chronic anal fissure.

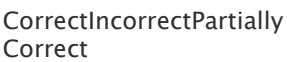
Stool softeners are the mainstay of therapy, with surgery reserved for those who fail medical intervention.

Next question | Go to summary

Answer Statistics

Times answered: 6627

Test Analysis



Work Smart

Core Questions

Question 109 of 185

A 71-year-old man presents to the Emergency Department with acute severe abdominal pain and diarrhoea. He describes the pain as a dull ache across his abdomen.

He apparently underwent a bowel resection some four months earlier, and he has a history of ischaemic heart disease and two previous myocardial infarctions. He reports intermittent abdominal pain leading up to this latest event, which seemed to be worse if he had eaten a heavy meal.

On examination his BP is 100/55 mmHg, his pulse is 105 in atrial fibrillation (AF). His abdomen is generally tender, with sparse bowel sounds.

Investigations show:

Hb	110 g/L	(135-180)
WCC	14.5 $\times 10^{9}$/L	(4-11)
PLT	207 $\times 10^{9}$/L	(150-400)
Na	139 mmol/L	(135-146)
K	5.4 mmol/L	(3.5-5)
Cr	172 µmol/L	(79-118)
Amylase	450 U/L	(60-180)
Lactate	4.2 mmol/L	(0.5-2.2)

A plain abdominal film is unremarkable.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Acute pancreatitis
◉	Inflammatory colitis ☐ Incorrect answer selected
○	Irritable bowel syndrome
○	Mesenteric ischaemia ☐ This is the correct answer
○	Small bowel obstruction

The history of ischaemic heart disease and presence of AF is suspicious for mesenteric ischaemia. Abdominal pain in the presence of a relatively normal x ray, diarrhoea, and a raised serum lactate add significantly to the suspicion.

CT scanning has become the imaging modality of choice for confirming the diagnosis, with a sensitivity and specificity for mesenteric ischaemia of over 90%.

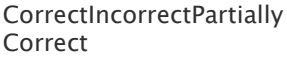
Angiography is still used where the diagnosis is in doubt.

Next question | Go to summary

Answer Statistics

Times answered: 6395

Test Analysis



Work Smart

Question 110 of 185

A 19-year-old woman returns from her gap year travels with chronic low-grade fever, intermittent abdominal pain, and diarrhoea. She has been feeling unwell for the past months and has returned to the UK because she has begun to lose weight. Her only medication is the combined oral contraceptive pill.

On examination she looks pale, her BP is 110/60 mmHg, pulse is 75, and her BMI is 18 kg/m^2. Her abdomen is soft, but she does complain of some right-sided abdominal pain.

Investigations show:

Hb	110 g/L	(115-165)
WCC	9.8 ×10 ^{9}/L	(4-11)
PLT	187 ×10 ^{9}/L	(150-400)
CRP	67 mg/L	(<10)
Na	139 mmol/L	(135-146)
K	4.8 mmol/L	(3.5-5)
Cr	120 µmol/L	(79-118)

Colonoscopy reveals areas of discrete ulceration identified, punctuated by normal mucosa. The biopsy reveals transmural non-caseating granulomata.

Which of the following is the most likely diagnosis?

(Please select 1 option)

⊙

	Amoebiasis ✗ Incorrect answer selected
○	Behçet's syndrome
○	Crohn's disease ✓ This is the correct answer
○	Ulcerative colitis
○	*Yersinia* infection

The presence of skipping and full thickness inflammation with granuloma formation is typical of Crohn's disease. Whilst an infectious agent is a possibility, it is less likely than inflammatory bowel disease here.

We are not given a history of significant oral or genital ulceration, which makes Behçet's less likely.

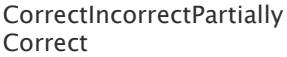
Corticosteroids and 5-ASA compounds are the mainstay of therapy for Crohn's.

Next question | Go to summary

Answer Statistics

Times answered: 6707

Test Analysis



Work Smart

Question 111 of 185

A 52-year-old man returns for repeat endoscopy. He was last scoped some six months earlier after persistent indigestion, upon which both duodenal ulceration and *Helicobacter* was found. He underwent eradication therapy but his indigestion has worsened, particularly over the past four to six weeks.

On examination his BP is 132/72 mmHg, his pulse is 70 and regular. He has mild epigastric tenderness.

Investigations show:

Haemoglobin	109 g/L	(135-177)
White cell count	7.2 $\times 10^{9}$/L	(4-11)
Platelets	240 $\times 10^{9}$/L	(150-400)
Serum sodium	143 mmol/L	(135-146)
Serum potassium	4.0 mmol/L	(3.5-5)
Creatinine	110 µmol/L	(79-118)
Serum gastrin	850 pg/ml	(<200)

Repeat endoscopy: extensive duodenal ulceration.

Which of the following is the most appropriate next step in his management?

(Please select 1 option)

- ○ Calcium stimulation test
- ○ CT abdomen

○	Omeprazole 40 mg
◉	Partial gastrectomy ☐ Incorrect answer selected
○	Secretin stimulation test ☐ This is the correct answer

This patient's gastrin is moderately elevated, levels above 1,000 are strongly indicative of a gastrinoma. Unless there is concomitant high-dose PPI therapy, at a gastrin level of 850 this patient should be subject to stimulation testing.

Secretin is the first choice, and a rise of greater than 200 is a pointer towards a gastrinoma as the underlying diagnosis. It would be sensible to perform the secretin first, prior to attempting pancreatic imaging.

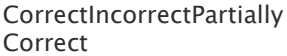
He should not be committed to high dose PPI therapy until gastrinoma has been ruled out.

Next question | Go to summary

Answer Statistics

Times answered: 6361

Test Analysis



Work Smart

Core Questions

Question 31 of 50

A 40-year-old woman with a history of Crohn's disease and multiple previous operations presents to the gastroenterology clinic.

She has begun suffering from increasing symptoms of early satiety, loss of appetite, bloating and diarrhoea over the past few months. She has lost weight, and is worried as she finds it very difficult to maintain her weight anyway.

On examination her BMI is 18.5 kg/m ^{2}. Physical examination is unremarkable apart from mild abdominal distension, and a number of old scars related to previous surgery.

Investigations show:

Haemoglobin	102 g/L	(115-165)
MCV	104 fL	(80-96)
White cell count	6.1 ×10 ^{9}/L	(4-11)
ESR	11 mm/hr	(<10)
Platelets	175 ×10 ^{9}/L	(150-400)
Serum sodium	136 mmol/L	(135-146)
Serum potassium	3.9 mmol/L	(3.5-5)
Creatinine	90 µmol/L	(79-118)
Serum albumin	32 g/L	(35-50)
Hydrogen breath test	Positive	

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Bacterial overgrowth syndrome This is the correct answer
○	Exacerbation of Crohn's disease
◉	Functional diarrhoea Incorrect answer selected
○	Pernicious anaemia
○	Short bowel syndrome

Symptoms of bloating, abdominal distension and diarrhoea are very consistent with a diagnosis of bacterial overgrowth syndrome. The hydrogen breath test further supports the diagnosis.

The fact that the ESR is normal significantly reduces the likelihood that this is an exacerbation of Crohn's.

The raised MCV is related to B_{12} deficiency, which is also caused by bacterial overgrowth.

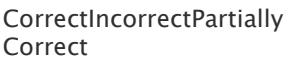
Both metronidazole and tetracyclines are used in the management of the condition.

Next question | Go to summary

Answer Statistics

Times answered: 7375

Test Analysis



Work Smart

Core Questions

Question 112 of 185

A 42-year-old man with a history of ulcerative colitis (UC) comes to the gastroenterology clinic. He currently takes mesalazine and has quiescent disease. He has had three episodes of severe disease, the last one some two years ago.

On examination he looks well, his BP is 115/72 mmHg, his pulse is 75 and regular, and his BMI is 23. His abdomen is soft and non-tender.

Investigations show:

Haemoglobin	130 g/L	(135-177)
White cells	7.8 $\times 10^{9}$/L	(4-11)
Platelets	189 $\times 10^{9}$/L	(150-400)
Sodium	138 mmol/L	(135-146)
Potassium	4.4 mmol/L	(3.5-5)
Creatinine	95 µmol/L	(79-118)
Albumin	40 g/L	(35-50)
Alanine aminotransferase	35 U/L	(5-40)

He asks questions about his UC and risk of colonic malignancy with respect to his UC.

Which of the following features would give you most cause for concern?

(Please select 1 option)

⊙ Disease confined to the rectum only Incorrect answer selected

○	Disease duration of six years
○	Disease throughout the colon This is the correct answer
○	No signs of primary sclerosing cholangitis
○	Three episodes of severe disease flare ups

Of these factors, pancolitis would give most cause for concern with respect to risk of colonic malignancy. The relative risk for colonic carcinoma versus the general population is 14.8 for pancolitis, versus 1.7 for distal disease only.

Other features of concern in patients with UC include:

- primary sclerosing cholangitis
- presence of dysplastic lesions within the colon, and
- prolonged disease (8-10 years after diagnosis or more).

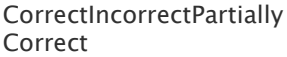
High-grade dysplasia or carcinoma necessitates colectomy, while many also recommend colectomy in patients with low-grade dysplasia.

Next question | Go to summary

Answer Statistics

Times answered: 6386

Test Analysis



Work Smart

Question 113 of 185

A 54-year-old man comes to the gastroenterology clinic for follow up of his ulcerative colitis. Over the past few months, he has suffered problems with increasing lethargy, and most recently has been off his food and has begun to suffer from intense itching.

On examination, his BP is 145/82 mmHg and pulse 78. He has mildly jaundiced sclerae, and some scratch marks, predominantly on his arms. The rest of the physical examination was unremarkable.

Investigations show:

Haemoglobin	120 g/L	(135-177)
White cells	7.8 $\times 10^{9}$/L	(4-11)
Platelets	189 $\times 10^{9}$/L	(150-400)
Sodium	138 mmol/L	(135-146)
Potassium	4.4 mmol/L	(3.5-5)
Creatinine	95 µmol/L	(79-118)
Albumin	35 g/L	(35-50)
Alanine aminotransferase	85 U/L	(5-40)
Alkaline phosphatase	395 U/L	(39-117)
pANCA	Positive	

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Autoimmune hepatitis
◉	Churg-Strauss syndrome ☐ Incorrect answer selected
○	Pancreatic carcinoma
○	Primary biliary cirrhosis
○	Primary sclerosing cholangitis ☐ This is the correct answer

This man's history of lethargy and itching, together with a blood picture consistent with obstructive liver disease is typical of the condition.

In total, between 75 and 90% of patients with primary sclerosing cholangitis (PSC) are thought to have co-existent inflammatory bowel disease, although only around 4% of patients with inflammatory bowel disease develop the condition.

There is often an increase in IgM; and pANCA, aCL antibodies, and ANA are present in up to 84%, 66%, and 53% of patients, respectively.

Endoscopic retrograde cholangiopancreatography (ERCP), the gold standard investigation, demonstrates multiple intrahepatic and extrahepatic bile duct strictures and dilatations, although the non-invasive magnetic resonance cholangiopancreatography (MRCP) is often performed initially.

PSC is chronically progressive with median time to liver failure put at around 12 years. Patients are additionally at increased risk of developing cholangiocarcinoma.

Next question | Go to summary

Answer Statistics

Times answered: 6356

Work Smart

Question 114 of 185

A 36-year-old alcoholic has an endoscopy some 16 hours after his admission with a variceal haemorrhage. This is his second admission in six months with an upper GI bleed and he has required a 4 unit blood transfusion.

Endoscopy reveals a number of large oesophageal varices, including one with adherent clot.

Which of the following is the therapy with the best evidence with respect to reducing the risk of a variceal bleed over the next few months?

(Please select 1 option)

○	High dose omeprazole
○	Propanolol
○	Sclerotherapy
○	Variceal banding This is the correct answer
◉	Vasopressin Incorrect answer selected

The answer is variceal banding.

Banding is proven to eliminate varices with fewer procedures and complications than injection sclerotherapy.

A recent trial has demonstrated that beta blockade and sclerotherapy are better than beta blockade alone in prophylaxis against bleeding.

The vasopressin analogue, terlipressin is used to control bleeding acutely, along with somatostatin

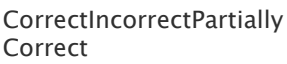
analogues.

Next question | Go to summary

Answer Statistics

Times answered: 6111

Test Analysis



Score: 25.44%

Total Answered: 114

Feedback

Work Smart

Question 115 of 185

A 64-year-old man presents to the hospital with bleeding. He has a heavy dependence on alcohol.

On examination, he has petechiae and bleeding gums.

What is the likely vitamin deficiency?

(Please select 1 option)

○	B_1
○	B_{12}
○	C This is the correct answer
○	E
◉	K Incorrect answer selected

Alcoholics have malabsorption resulting in multiple possible vitamin deficiencies. Vitamin C deficiency, or scurvy, results in perifollicular haemorrhages and bleeding gums.

Vitamin C, also known as ascoric acid, is found in fruit and vegetables, milk, fish, and offal. It cannot be synthesised by the body and, as such, is an essential dietary vitamin. It is used for collagen formation, which maintains the integrity of skin and connective tissues, bone, vessels and dentition. It also facilitates the absorption of iron.

Chronic, severe deficiency, which can occur in alcoholics, results in scurvy. Early symptoms are non-specific such as malaise and lethargy. This can progress to dyspnoea, arthralgia, and myalgia. Ecchymoses, perifollicular haemorrhages, purpura, splinter haemorrhages, petechiae, and poor

wound healing then becomes apparent.

In addition, there can be conjunctival haemorrhages, flame-shaped retinal haemorrhages and cotton wool spots can be seen. In the late stages jaundice, oedema, fractures, cardiac failure, neuropathy, and seizures can occur.

Deficiencies in:

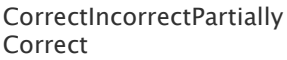
- B_1 or thiamine can result in Wernicke's encephalopathy
- Vitamin B_{12} or cyanocobalamin can result in subacute degeneration of the spinal cord
- Vitamin K can result in anticoagulant effects and elevated INR causing more profuse bleeding
- Vitamin E deficiency can result in myopathies, neuropathies and red cell dyscrasias.

Next question | Go to summary

Answer Statistics

Times answered: 6441

Test Analysis



Work Smart

Core Questions

Question 116 of 185

A 37-year-old woman gives an eight-month history of bloody diarrhoea. On average she has six bowel motions per day with associated urgency. She also reports weight loss of approximately 3 kg.

On examination, she is dehydrated and tachycardic. There is evidence of pallor and abdominal examination reveals left-sided tenderness.

Which of the following pathological features would you expect to find given the likely underlying diagnosis?

(Please select 1 option)

○	Diffuse mucosal inflammation This is the correct answer
○	Lymphoid aggregates
○	Normal crypt architecture
○	Presence of goblet cells
◉	Transmural inflammation Incorrect answer selected

Chronic (particularly for this duration) bloody diarrhoea in a young patient is very suggestive of a diagnosis of ulcerative colitis. The time course is too long for an infective cause and whilst Crohn's may cause a colitis, this is less frequent.

Bloody diarrhoea occurs in 90-100% of cases of UC. Crohn's disease often presents with intermittent abdominal pain, diarrhoea is usually watery and in half of all cases, presentation is with perianal disease. Bloody diarrhoea may be a feature of Crohn's colitis but this is less common than UC. The

predominant left sided symptoms (urgency and anatomical distribution of the tendency) should also point towards UC.

The answer here, therefore, is diffuse mucosal inflammation, all the remaining options are histological features of Crohn's disease. Mucosal inflammation is one of the histological findings in UC; transmural inflammation is seen in Crohn's disease.

Lymphocytes are seen in Crohn's disease, whereas neutrophils are found in UC.

Crypt abscesses and goblet cell depletion are also found in UC.

Reference:

1. Atkinson RJ, et al. *Medical Masterclass: Gastroenterology and Hepatology.* 2nd ed. London: Royal College of Physicians; 2008.
2. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

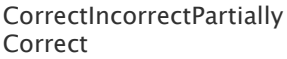
Next question

Go to summary

Answer Statistics

Times answered: 7083

Test Analysis



Work Smart

Question 117 of 185

Mutation of STK11/LKB1 gene is associated with which of the following diseases?

(Please select 1 option)

○	Familial adenomatous polyposis
○	Hereditary non-polyposis colorectal cancer
○	Neurofibromatosis
◉	Peutz-Jeghers syndrome Correct
○	Tuberous sclerosis

Mutation of APC gene leads to familial adenomatous polyposis.

Defective mismatch repair genes hMLH1 and hMSH2 leads to hereditary non-polyposis colorectal cancer.

Mutation of tumour suppressor genes NF1 (neurofibromin) and NF2 (merlin) results in neurofibromatosis type 1 and type 2, respectively.

In tuberous sclerosis, there is mutation of TSC1 or TSC2 genes.

Reference:

1. Green AJ, et al. The tuberous sclerosis gene on chromosome 9q34 acts as a growth suppressor. *Hum Mol Genet.* 1994;3:1833-4.
2. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

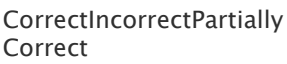
3. Yohay KH. The genetic and molecular pathogenesis of NF1 and NF2. *Semin Pediatr Neurol.* 2006;13:21-6.

Next question | Go to summary

Answer Statistics

Times answered: 6320

Test Analysis



Score: 25.64%

Total Answered: 117

Feedback

Work Smart

Core Questions

Question 118 of 185

A 42-year-old man presents with a six-month history of diarrhoea and abdominal cramps. On further questioning, it appears he has also noticed facial flushing.

On examination, there is wheeze on auscultation of his chest and abdominal examination reveals hepatomegaly.

Which of the following investigations would confirm the likely diagnosis?

(Please select 1 option)

○	24-hour urinary 5-HIAA This is the correct answer
○	24-hour urinary copper
○	24-hour urinary free cortisol
○	24-hour urinary protein
◉	24-hour urinary VMA Incorrect answer selected

This patient has carcinoid syndrome. The diagnosis is made by 24-hour urine collection for 5-hydroxyindoleacetic acid (5-HIAA) - excretion is greater than 0.3 mmol.

Forty-five percent of carcinoid tumours arise in the appendix, 30% arise in the small bowel, and 20% in the rectum.

Most patients with carcinoid syndrome have liver metastases.

5-HT, kinins, prostaglandins and other vasoactive substances are secreted.

Clinical features of carcinoid syndrome include diarrhoea and abdominal cramps in the majority of patients.

Flushing, which is often provoked by alcohol, is also a feature, as are bronchoconstriction and cardiac involvement with tricuspid or pulmonary incompetence.

Diagnosis also includes chest x ray, abdominal ultrasound scan, small bowel radiology, and echocardiography to establish the extent of disease. Surgical resection of the primary tumour is possible in some cases; octreotide is the treatment of choice.

In the majority of cases of Wilson's disease, 24-hour urinary copper is greater than 3 μmol.

In Cushing's syndrome, 24-hour urinary free cortisol is elevated.

Nephrotic syndrome is defined as proteinuria greater than 3.5 g/1.75 m^2 of body surface per 24 hours, hypoalbuminaemia, and oedema.

Screening for phaeochromocytoma can be performed by 24-hour urine collection for 4-OH-3-methoxymandelate (HMMA, VMA).

Reference:

1. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.
2. Hope RA, et al. *Oxford Handbook of Clinical Medicine* 4th ed. Oxford: Oxford University Press; 1998.
3. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

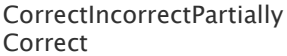
Next question

Go to summary

Answer Statistics

Times answered: 6355

Test Analysis



Work Smart

Question 119 of 185

A 21-year-old man was admitted with confusion.

He was noted to have Kayser-Fleischer rings and his liver function tests were consistent with acute hepatitis.

Which chromosome contains the gene for this disease?

(Please select 1 option)

○	Chromosome 6	
○	Chromosome 13	This is the correct answer
◉	Chromosome 15	Incorrect answer selected
○	Chromosome 17	
○	Chromosome 22	

The gene involved in Wilson's disease is located on chromosome 13.

Wilson's disease is an autosomal recessive disorder which results in copper deposition in the liver and brain, and impaired incorporation of copper into caeruloplasmin.

Wilson's disease is a cause of acute liver failure and can also lead to decompensated cirrhosis.

Patients with neurological disease often have Kayser-Fleischer rings.

In the majority of patients plasma caeruloplasmin is low (< 200 mg/L); serum copper is < 11 µmol/L and in 65% of patients 24-hour urinary copper is elevated at > 3 µmol.

Liver biopsy will aid the diagnosis.

Treatment includes penicillamine, which leads to urinary copper excretion.

Ninety per cent of cases of haemochromatosis are caused by the substitution of tyrosine for cysteine at position 282 of the HFE gene found on chromosome 6.

Marfan's syndrome is caused by defects in fibrillin; the gene responsible is located on chromosome 15.

Neurofibromatosis type 1 is due to a mutation or deletion of the NF111 gene located on chromosome 17.

Neurofibromatosis type 2 is the result of a mutation or deletion of the NF2 gene11 found on chromosome 22.

Reference:

1. Aaseth J, et al. Hereditary iron and copper deposition: diagnostics, pathogenesis and therapeutics. *Scand J Gastroenterol.* 2007;42:673-81.
2. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.
3. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

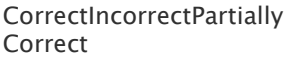
Next question

Go to summary

Answer Statistics

Times answered: 6449

Test Analysis



Work Smart

Question 120 of 185

Which of the following stimulates the secretion of gastrin?

(Please select 1 option)

○	Amino acids This is the correct answer
○	Fasting
○	High level gastric acid in the stomach
◉	Low gastric pH Incorrect answer selected
○	Somatostatin

Gastrin is released from specialised endocrine cells, called G cells, in response to a meal. Protein, peptides, and amino acids are specific components which will stimulate gastrin release.

Fasting and increased gastric acid in the stomach both inhibit the release of gastrin. High gastric pH is a strong stimulus for the secretion of gastrin.

G cells are tightly regulated by two hormones: gastrin-releasing peptide has a stimulatory effect causing the secretion of gastrin, while somatostatin is inhibitory.

Next question | Go to summary

Work Smart

Core Questions

Question 121 of 185

Which of the following features, seen on barium studies, is typical of both ulcerative colitis and Crohn's disease?

(Please select 1 option)

○	Cobblestone mucosa
○	Pseudopolyps This is the correct answer
◉	Rose-thorn ulcers Incorrect answer selected
○	Skip lesions
○	Strictures

Pseudopolyps are seen in both ulcerative colitis and Crohn's disease.

Each of the remaining options listed tend to be features of Crohn's disease rather than of ulcerative colitis.

Reference:

Travis SPL, et al. *Pocket Consultant Gastroenterology.* 3rd ed. Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Work Smart

Question 122 of 185

From where is the hormone somatostatin released?

(Please select 1 option)

○	Duodenum
◉	Jejunum Incorrect answer selected
○	Liver
○	Pancreas This is the correct answer
○	Stomach

Somatostatin is released from delta cells in the pancreas and is a strong inhibitor of insulin and glucagon secretion.

Reference:

Kelly C, Flatt PR, McClenaghan NH. Cell-to-cell communication and cellular environment alter the somatostatin status of delta cells. *Biochem Biophys Res Commun.* 2010;399:162-6.

Next question | Go to summary

Answer Statistics

Work Smart

Question 123 of 185

Which of the following demonstrates autosomal co-dominant inheritance?

(Please select 1 option)

○	Alpha-1-antitrypsin deficiency This is the correct answer
○	Cowden's disease
◉	Familial adenomatous polyposis Incorrect answer selected
○	Hereditary haemorrhagic telangiectasia
○	Peutz-Jeghers syndrome

Alpha-1-antitrypsin (A1AT) deficiency is an autosomal co-dominant disorder - both alleles contribute to the phenotype. The most common allele is M (normal), whilst there are over 100 abnormal alleles (leading to decreased A1AT levels) the most common are Z and S. Individuals with a single normal allele may have reduced levels of A1AT but still produce sufficient normal protein to prevent development of a disease phenotype, this is why some texts will refer to the condition as autosomal recessive. In the disease state there is impaired cellular transport of alpha-1-antitrypsin leading to accumulation within the liver and hepatic injury.

Cowden's disease is an autosomal disorder resulting in multiple hamartomas of skin and mucous membranes.

Familial adenomatous polyposis is the commonest adenomatous polyposis syndrome demonstrating autosomal dominant inheritance.

Hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu syndrome) demonstrates autosomal dominant inheritance and is characterised by telangiectasia affecting the skin and mucous membranes; severe gastrointestinal haemorrhage may occur.

Peutz-Jeghers syndrome demonstrates autosomal dominant inheritance. There is characteristic mucocutaneous pigmentation; polyps can occur anywhere in the gastrointestinal tract but are commonly in the small bowel.

Reference:

Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.

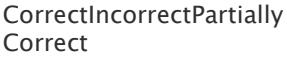
Next question

Go to summary

Answer Statistics

Times answered: 6262

Test Analysis



Work Smart

Question 124 of 185

Which of the following drugs is an inhibitor of cytochrome P450 hepatic enzymes?

(Please select 1 option)

○	Carbamazepine
○	Griseofulvin
○	Omeprazole This is the correct answer
○	Phenytoin
◉	Rifampicin Incorrect answer selected

The correct answer is omeprazole.

The remainder of the listed options are all cytochrome P450 inducers.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Work Smart

Question 125 of 185

Which of the following demonstrates autosomal dominant inheritance?

(Please select 1 option)

○	Acute intermittent porphyria This is the correct answer
○	Cystic fibrosis
○	Dubin-Johnson syndrome
○	Haemochromatosis
◉	Wilson's disease Incorrect answer selected

Acute intermittent porphyria is an autosomal disorder. Clinical features include abdominal pain and constipation. Associated neurological manifestations such as polyneuropathy and epilepsy are also seen. Urinary porphobilinogen is greater than four times the upper limit of normal. Management includes analgesia - opiates are often required. High carbohydrate intake and in severe attacks haem infusion inhibit haem production and thereby reduce porphyrin synthesis.[1]

Cystic fibrosis is an autosomal recessive disease, where mutations in the gene for the CFTR (cystic fibrosis transmembrane conductance regulator) results in the production of dry protein-rich secretions leading to pulmonary and gastrointestinal complications.

Dubin-Johnson syndrome is a rare autosomal recessive disorder where there is conjugated hyperbilirubinaemia and impaired bilirubin excretion resulting in mild jaundice but normal liver function.

Haemochromatosis demonstrates autosomal recessive inheritance where iron overload can lead to cirrhosis. Other systems are also affected and patients may suffer from:

- cardiomyopathy
- diabetes mellitus
- hypogonadism
- skin pigmentation ('bronze diabetes') and
- arthropathy.

Wilson's disease is an autosomal recessive disorder caused by copper retention and impaired incorporation of copper into caeruloplasmin. Patients may develop acute liver failure, and the disease is also a cause of cirrhosis. There may be neuropsychiatric manifestations such as parkinsonism and cognitive impairment.[1]

Reference:

1. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.

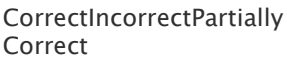
Next question

Go to summary

Answer Statistics

Times answered: 6397

Test Analysis



Work Smart

Core Questions

Question 32 of 50

Which of the following is an inhibitor of gastric acid secretion?

(Please select 1 option)

○	Acetylcholine
○	Histamine
○	Prostaglandins This is the correct answer
○	Stomach distension
◉	Swallowing Incorrect answer selected

The correct answer is prostaglandins.

The remaining listed options all stimulate the release of gastric acid.

Next question | Go to summary

Answer Statistics

Work Smart

Core Questions

Question 126 of 185

Which of the following hormones stimulates contraction of the gallbladder?

(Please select 1 option)

◉	Cholecystokinin Correct
○	Gastrin
○	Secretin
○	Somatostatin
○	Vasoactive intestinal peptide (VIP)

Gastrin leads to the release of gatric acid.

Secretin stimulates the release of pancreatic fluid and bicarbonate.

Somatostatin inhibits gastrointestinal endocrine secretion.

Vasoactive intestinal peptide (VIP) functions as a vasodilator and also regulates smooth muscle activity, epithelial cell secretion and gastrointestinal blood flow.

Next question | Go to summary

Answer Statistics

Work Smart

Core Questions

Question 127 of 185

A 22-year-old man has been admitted with severe ulcerative colitis. He has been on high-dose steroids intravenously for three days but there have been no signs of improvement.

The gastroenterology team have decided to commence ciclosporin.

Which of the following is a recognised adverse effect of ciclosporin?

(Please select 1 option)

○	Eczema
○	Hypertension This is the correct answer
◉	Nephrotic syndrome Incorrect answer selected
○	Psoriasis
○	Rheumatoid arthritis

The correct answer is hypertension.

The remainder are all indications for ciclosporin use; in cases of eczema, psoriasis, and rheumatoid arthritis patients will have severe disease.

Cyclosporine also results in nephrotoxicity.

Gum hypertrophy, hirsutism and convulsions are rare adverse reactions.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing;

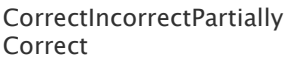
2005.

Next question | Go to summary

Answer Statistics

Times answered: 6339

Test Analysis



Score: 24.41%

Total Answered: 127

Feedback

Work Smart

Question 33 of 50

A 28-year-old woman presents with a six month history of diarrhoea and weight loss.

On examination her abdomen is mildly distended. She is found to be anaemic, liver function tests are abnormal and iron and folate levels are both low.

Tissue transglutaminase antibody level is elevated and duodenal biopsies demonstrate increased intraepithelial lymphocytes and villous atrophy consistent with a diagnosis of coeliac disease.

Which cell type is responsible for the hypersensitivity response against gluten?

(Please select 1 option)

○	B cell
○	Macrophage
○	Monocytes
◉	Natural killer (NK) cell Incorrect answer selected
○	T cell This is the correct answer

Coeliac disease results from small bowel inflammation and atrophy due to T-cell mediated hypersensitivity reaction to the alpha-gliadin component of gluten.

Reference:

Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

Work Smart

Question 34 of 50

Which of the following genotypes is associated with the lowest levels of alpha-1-antitrypsin (AAT)?

(Please select 1 option)

○	PiMM
◉	PiMS Incorrect answer selected
○	PiMZ
○	PiSZ
○	PiZZ This is the correct answer

PiMM is the normal phenotype.

The null phenotype (not in the list of options) is the least common but the most severe form of the disease where there is no detectable AAT in the serum.

Next question | Go to summary

Answer Statistics

1 16%

2 7%

Work Smart

Question 128 of 185

Which of the following drugs is a P450 hepatic enzyme inducer?

(Please select 1 option)

◉	Ciprofloxacin Incorrect answer selected
○	Erythromycin
○	Ketoconazole
○	Phenobarbitone This is the correct answer
○	Sodium valproate

The correct answer is phenobarbitone.

The remainder of the listed options are all inhibitors of cytochrome P450.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Work Smart

Question 35 of 50

A 23-year-old man presents with steatorrhoea and weight loss.

On examination he is found to have a vesicular rash over his elbows and knees which he describes as extremely pruritic.

Which of the following immunoglobulins is characteristically present at the dermo-epidermal junction?

(Please select 1 option)

◉	IgA Correct
○	IgD
○	IgE
○	IgG
○	IgM

Dermatitis herpetiformis is characterised by IgA at the dermo-epidermal junction.

Dermatitis herpetiformis is associated with coeliac disease which is the underlying diagnosis in this patient.

The rash which is pruritic and vesicular is found over the elbows, knees, buttocks, sacrum, trunk, face and neck. Treatment is with dapsone and a gluten-free diet.

Reference:

Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford

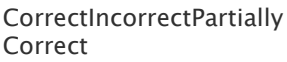
University Press; 2006.

Next question | Go to summary

Answer Statistics

Times answered: 6286

Test Analysis



Score: 20%

Total Answered: 35

Feedback

Work Smart

Question 129 of 185

Which of the following dermatological conditions is associated with oesophageal carcinoma?

(Please select 1 option)

○	Acanthosis nigricans
○	Ichthyosis
○	Necrolytic migratory erythema
◉	Tylosis Correct
○	Vasculitis

Acanthosis nigricans is associated with gastric adenocarcinoma.

Ichthyosis is associated with lymphoma.

Glucagonoma is associated with necrolytic migratory erythema.

Malignancy-associated vasculitis is associated with haematological rather than solid malignancies.

Next question | Go to summary

Answer Statistics

Work Smart

Question 130 of 185

Which of the following is consistent with a diagnosis of insulinoma?

(Please select 1 option)

○	High fasting glucose, low insulin, high C peptide
○	Low fasting glucose, high insulin, high C peptide This is the correct answer
○	Low fasting glucose, high insulin, low C peptide
◉	Low fasting glucose, low insulin, high C peptide Incorrect answer selected
○	Low fasting glucose, low insulin, low C peptide

In patients with an insulinoma there is low fasting glucose due to high levels of insulin and C peptide is elevated. Insulinoma is a pancreatic endocrine cell tumour. Patients suffer from recurrent hypoglycaemia due to the secretion of insulin.

In contrast, insulin overdose will cause high insulin levels but a low C peptide.

Next question | Go to summary

Answer Statistics

1 2%

Work Smart

Question 131 of 185

Which of the following is a cause of primary iron overload?

(Please select 1 option)

○	Alcoholic liver disease
○	Aplastic anaemia
○	Haemochromatosis This is the correct answer
◉	Insulin resistance syndrome Incorrect answer selected
○	Repeated blood transfusions

Haemochromatosis is the correct answer.

The remaining options are all associated with secondary iron overload.

Iron overload secondary to repeated blood transfusion is a particular problem for patients with hereditary anaemia, and can be a major cause of morbidity.

The association between the metabolic syndrome (insulin resistance,obesity, hyperlipidaemia) and the development of hepatic iron overload has been described on a number of occasions over the last couple of decades. These patients are usually middle-aged men with mild to moderate iron excess. It is thought compound heterozygosity for the HFE mutations (C282Y and H63D) may have a role, but the link is not yet fully understood.

Aplastic anaemia is often associated with chronic haemolysis, and repeated blood transfusions, both of which are linked with iron overload.

Following heavy alcohol intake, hepatocytes may lose their ability to compensate for inborn errors in iron metabolism, resulting in iron overload. The link between iron and alcohol is further demonstrated by the fact that alcohol increases the severity of liver damage in hereditary haemochromatosis.

Reference:

1. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.
2. Gramenzi A, et al. Review article: alcoholic liver disease--pathophysiological aspects and risk factors. *Aliment Pharmacol Ther.* 2006;24:1151-61.

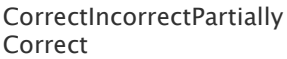
Next question

Go to summary

Answer Statistics

Times answered: 6327

Test Analysis



Work Smart

Question 36 of 50

Which of the following is a cause of macroglossia?

(Please select 1 option)

○	Amyloidosis This is the correct answer
○	Crohn's disease
○	Glossitis
○	Peutz-Jeghers syndrome
◉	Tuberous sclerosis Incorrect answer selected

Crohn's disease can affect any part of the gastrointestinal tract from the mouth to the anus. Aphthous ulceration is common in active disease.

Aphthous ulcers and glossitis are both features of coeliac disease.

Patients with Peutz-Jeghers syndrome have characteristic mucocutaneous pigmentation, that is, perioral freckling.

Gingival fibromas are seen in tuberous sclerosis.

Reference:

1. Atkinson RJ, et al. *Medical Masterclass: Gastroenterology and Hepatology.* 2nd ed. London: Royal College of Physicians; 2008.
2. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed.

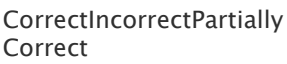
Oxford: Oxford University Press; 2006.
3. Travis SPL, et al. *Pocket Consultant Gastroenterology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Times answered: 6328

Test Analysis



Score: 19.44%

Total Answered: 36

Feedback

Work Smart

Question 132 of 185

Which of the following is a recognised cause of gingival hyperplasia?

(Please select 1 option)

○	Allopurinol
○	Hyoscine
◉	Penicillamine Incorrect answer selected
○	Phenytoin This is the correct answer
○	Prednisolone

A rare adverse effect of allopurinol includes a metallic taste.

Hyoscine commonly causes a dry mouth.

Penicilliamine can cause oral ulceration and loss of taste.

Prednisolone commonly results in *Candida* infection.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Work Smart

Core Questions

Question 37 of 50

A 45-year-old woman presents with pruritus.

On examination she has clubbing, palmar erythema and spider naevi. There is also evidence of excoriations and xanthelasma.

Blood results demonstrate deranged liver function tests with a predominantly cholestatic picture but the abdominal ultrasound scan is normal. A subsequent autoimmune screen is positive for antimitochondrial antibodies.

Given the likely diagnosis, which of the following HLA antigens is associated with this disease?

(Please select 1 option)

○	HLA-A3
○	HLA-B5
○	HLA-B27
◉	HLA-B35 Incorrect answer selected
○	HLA-DR8 This is the correct answer

This woman has primary biliary cirrhosis (PBC) which is associated with HLA-DR8. Antimitochondrial antibodies are positive in 95% of cases of PBC.

HLA-A3 is associated with haemochromatosis.

HLA-B5 is associated with Behcet's disease.

Subacute thyroiditis has an association with HLA-B35.

Ankylosing spondylitis is associated with HLA-B27.

Reference:

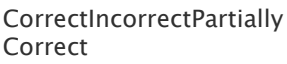
Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.

Next question | Go to summary

Answer Statistics

Times answered: 6400

Test Analysis



Score: 18.92%

Total Answered: 37

Work Smart

Core Questions

Question 133 of 185

Which of the following drugs is a recognised cause of pancreatitis?

(Please select 1 option)

○	Alendronic acid
○	Amiodarone
◉	Amitriptyline — Incorrect answer selected
○	Atenolol
○	Azathioprine — This is the correct answer

The correct answer is azathioprine.

The remaining listed options are not known to cause pancreatitis.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Work Smart

Question 134 of 185

Which of the following drugs does not undergo extensive hepatic first-pass metabolism?

(Please select 1 option)

○	Budesonide
◉	Glyceryl trinitrate Incorrect answer selected
○	Ketoconazole
○	Salbutamol
○	Warfarin This is the correct answer

The correct answer is warfarin.

The remaining listed drugs all undergo extensive hepatic first-pass metabolism.

Reference:

Tofield C, Milson A, Chatu S. *Hands-on guide to clinical pharmacology.* Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Work Smart

Question 135 of 185

A 58-year-old man presents with a history of indigestion which has been steadily worsening over the past few months. He tells you that he has lost 4 kg in weight in the past half a year.

There is no past medical history of note apart from smoking of 10 cigarettes/day. On examination his BP is 152/90 mmHg, pulse is 75 and regular. His BMI is 22.

Investigations show:

Haemoglobin	109 g/L	(135-177)
White cell count	7.5 $\times 10^9$/L	(4-11)
Platelets	280 $\times 10^9$/L	(150-400)
Sodium	139 mmol/L	(135-146)
Potassium	3.9 mmol/L	(3.5-5)
Creatinine	88 µmol/L	(79-118)

Which of the following is the most appropriate course of action?

(Please select 1 option)

○	Barium swallow
○	Magnesium trisilicate
◉	Omeprazole Incorrect answer selected
○	Ranitidine

○	Upper GI endoscopy	This is the correct answer

Guidelines from the Department of Health suggest that urgent endoscopy is warranted when there is indigestion and weight loss at any age, combined with anaemia and vomiting and in the over 55s when there is a history of <1 year of dyspepsia and symptoms are continuous.

Barium swallow is not the usual first line investigation, with upper gastrointestinal (GI) endoscopy preferred for the majority of patients.

Magnesium trisilicate is an antacid used for short term relief of symptoms only.

Ranitidine is predominantly used now as an over the counter indigestion relief tablet.

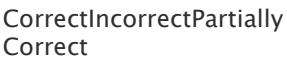
Omeprazole is standard pharmacological therapy for gastro-oesophageal reflux disease, although not until an endoscopy has excluded a serious underlying diagnosis in this case.

Next question | Go to summary

Answer Statistics

Times answered: 6119

Test Analysis



Work Smart

Question 38 of 50

A 39-year-old man who is known to drink three bottles of wine per day presents to the Emergency Department with dull abdominal pain. He tells you that he has suffered from increasing abdominal swelling over the past month.

On examination his BP is 105/72 mmHg, his pulse is 92 and regular. He is pyrexial 37.9°C. His abdomen is generally tender but there are bowel sounds on auscultation. He is penicillin allergic.

Investigations show:

Haemoglobin	105 g/L	(135-177)
White cell count	11.5 $\times 10^9$/L	(4-11)
Platelets	125 $\times 10^9$/L	(150-400)
Sodium	134 mmol/L	(135-146)
Potassium	3.6 mmol/L	(3.5-5)
Creatinine	90 µmol/L	(79-118)
Neutrophils / ml in ascitic fluid	280	(<250)

Which of the following is the most appropriate treatment?

(Please select 1 option)

◉	Ciprofloxacin and vancomycin Correct
○	Co-amoxiclav

○	Erythromycin and ciprofloxacin
○	Erythromycin and metronidazole
○	Piperacillin and tazobactam

The diagnosis here is spontaneous bacterial peritonitis. Note the history of alcohol excess, gradully increasing abdominal girth, and elevated neutrophil count in the ascitic fluid.

Spontaneous bacterial peritonitis should be managed aggressively, and whilst piperacillin and tazobactam are an appropriate choice in those who are not penicillin allergic. In this case ciprofloxacin and vancomycin are the default choice due to the presence of penicillin allergy. Oral continuation therapy is with ciprofloxacin alone or co-trimoxazole.

Co-amoxiclav is not appropriate due to the presence of penicillin allergy, nor is the piperacillin and tazobactam combination.

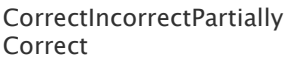
The two erythromycin combinations do not provide an adequate breadth of coverage.

Next question | Go to summary

Answer Statistics

Times answered: 6304

Test Analysis



Work Smart

Core Questions

Question 136 of 185

A 71-year-old woman comes to the clinic for advice.

Over the course of the past year or two, she has had increasing problems with regurgitation of rotten food, has lost weight and acquired a chronic cough. According to her partner, she has problems with halitosis which have not improved on multiple visits to the dentist.

On examination her BP is 145/82 mmHg, pulse is 70 and regular and her BMI is 27. She has a neck mass which appears to gurgle when she swallows.

Investigations show:

Haemoglobin	132 g/L	(115-160)
White cell count	7.3 $\times 10^9$/L	(4-11)
Platelets	161 $\times 10^9$/L	(150-400)
Sodium	141 mmol/L	(135-146)
Potassium	4.0 mmol/L	(3.5-5)
Creatinine	95 µmol/L	(79-118)

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Achalasia
○	Gastro-oesophageal reflux disease (GORD)
○	

	Oesophageal carcinoma
○	Pharyngeal pouch This is the correct answer
⊙	Plummer-Vinson's disease Incorrect answer selected

The history of regurgitation of rotten food, coupled with chronic cough and a gurgling mass on examination fits best with a pharyngeal pouch. Aspiration of food from the pouch may lead in some cases to pneumonia. Management involves either diverticulectomy for larger lesions or endoscopic diverticulotomy (Dohlman's procedure) for smaller pouches.

Whilst GORD is a possible alternative diagnosis, a pouch would not be found on examination.

Achalasia is usually associated with progressive dysphagia to both liquids and solids, oesophageal carcinoma with progressive dysphagia first to solids then liquids. Again, external examination is typically normal.

Plummer-Vinson's disease is associated with progressive dysphagia due to oesophageal webs and is associated with chronic iron deficiency. A neck mass would not be typical.

Oesophageal carcinoma often presents with systemic malaise as well as progressive dysphagia. The patient may appear cachetic, and there may be palpable nodes in the neck (if the carcinoma is proximal), but a gurgling mass would be less typical. If left untreated for a couple of years, you would expect the presence of metastatic disease and absolute dysphagia.

Next question | Go to summary

Answer Statistics

Times answered: 6961

Test Analysis

CorrectIncorrectPartially

Work Smart

Question 137 of 185

A 55-year-old post-menopausal woman presents with tiredness and lethargy, she denies any other symptoms. Her blood tests show that she is anaemic.

Tests reveal:

Haemoglobin	103 g/L	(115-165)
Mean corpuscular volume	76 fL	(80-96)
Ferritin	5 µg/L	(15-300)

Anti-tissue transglutaminase IgA and IgG antibodies are negative. Gastroscopy and CT colonography are both performed and do not reveal any cause for iron deficiency. She is commenced on oral ferrous sulphate and three months later her haemoglobin is 115 g/L.

She comes to see you three months after this asking whether it is possible to stop the oral iron as she feels it is making her nauseated.

According to the British Society of Gastroenterology guidelines on the management of iron deficiency anaemia what is the most appropriate course of action?

(Please select 1 option)

○	Change to parenteral iron
○	Offer transfusion as required
○	Refer for further investigation
◉	Stop oral iron and monitor haemoglobin Correct

Trial of alternative oral iron preparation

Parenteral iron replacement should be considered where iron replacement is necessary but an oral preparation cannot be tolerated or absorbed.

There is no indication for transfusion and there has been a response to iron supplementation that is likely to be replicated, if necessary, in the future.

Initial investigations for a gastrointestinal cause for the iron deficiency have been completed and are negative, in the absence of other symptoms to suggest an alternative source for blood loss and in the presence of a good response to oral iron further investigation is not warranted. Further monitoring is required to ensure that any response is sustained.

Supplementary iron is no longer required at this stage in the patient's management so switching to an alternative is not required.

Alternative preparations and dose reduction may help where oral iron is not well tolerated.

Reference:

Goddard AF, McIntyre AS, Scott BB. Guidelines for the management of iron deficiency anaemia. *Gut.* 2000;46:IV1-IV5.

Next question | Go to summary

Answer Statistics

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Question 138 of 185

A 43-year-old man with known chronic liver disease secondary to alcohol is admitted to hospital with confusion.

He is currently taking spironolactone 400 mg and furosemide 40 mg in addition to several vitamin supplements.

On examination there are peripheral stigmata of chronic liver disease and shifting dullness can be elicited. His pulse rate is 102 beats per minute and blood pressure 95/40 mmHg.

His blood tests show:

Sodium	118 mmol/L	(137-144)
Potassium	4.8 mmol/L	(3.5-4.9)
Urea	8.4 mmol/L	(2.5-7.5)
Creatinine	87 µmol/L	(60-110)

According to the British Society of Gastroenterology guidelines on the management of ascites what is the most appropriate way to manage this gentleman's hyponatraemia?

(Please select 1 option)

◉	Fluid restrict Incorrect answer selected
○	No change in current management
○	Reduce diuretics
○	Stop diuretics

○	Stop diuretics and give normal saline	This is the correct answer

Patients with chronic liver disease and ascites often develop hyponatraemia, the management of which can be difficult. Diuretic therapy for the management of ascites often contributes to the hyponatraemia.

The British Society of Gastroenterology guidelines suggest that where the serum sodium is ≤120 mmol/L diuretic therapy should be stopped and patients should receive volume expansion with colloid or normal saline.

These guidelines also advise that fluid restriction should only be used in patients who are clinically euvolaemic, not on diuretics and have severe hyponatraemia with a normal serum creatinine.

No specific intervention other than careful monitoring is advised where the serum sodium is 126-135 mmol/L. In the range 121-125 mmol/L where the serum creatinine is normal, diuretic therapy may be continued but may need to be reduced with a view to stopping if necessary.

If the sodium is in this range but the serum creatinine is rising diuretics should be stopped and patients should receive volume expansion.

Reference:

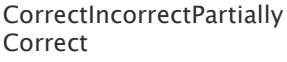
British Society of Gastroenterology. Guidelines on the Management of Ascites in Cirrhosis.

Next question | Go to summary

Answer Statistics

Times answered: 6154

Test Analysis



Work Smart

Question 39 of 50

A 37-year-old homeless gentleman with a history of alcohol excess presents to hospital with progressive abdominal distension. He now complains of early satiety and abdominal discomfort as a result of the distension.

Examination reveals a significantly distended abdomen with shifting dullness. An ascitic tap is performed and the fluid sent for analysis.

According to the British Society of Gastroenterology guidelines on the management of ascites, what is the most appropriate first-line treatment for his ascites?

(Please select 1 option)

○	Amiloride
○	Dietary salt restriction
○	Furosemide
○	Paracentesis This is the correct answer
◉	Spironolactone Incorrect answer selected

The treatment of choice for large, symptomatic ascites is large volume therapeutic paracentesis.

Where the volume of ascites is not sufficient to warrant paracentesis then first line treatment is dietary salt restriction (to no more than 90 mmol/day) and spironolactone.

Initial dose of spironolactone in this setting is 100 mg/day and may be titrated up to 400 mg/day. Once the maximum dose of spironolactone has been reached furosemide can be added if there is still

significant ascites accumulation and the renal function and electrolytes will tolerate further diuresis. Doses of furosemide are advised start at 40 mg/day titrating up to 160 mg/day as tolerated or needed.

Furosemide alone has poor efficacy in cirrhosis.

Amiloride is not generally recommended for use in cirrhosis and ascites as, although it produces a natriuresis, its efficacy is significantly inferior to spironolactone.

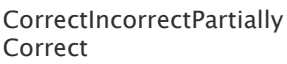
Bumetanide may be used instead of furosemide.

Next question | Go to summary

Answer Statistics

Times answered: 6188

Test Analysis



Work Smart

Question 139 of 185

You are asked to review the blood results of an 18-year-old woman who is known to have anorexia nervosa. She is under close review by the dietician who has asked you to ensure electrolytes are checked daily.

Which of the following is a feature of the potentially life-threatening complication this lady is at risk of developing?

(Please select 1 option)

○	Hypercalcaemia
○	Hyperkalaemia
○	Hypermagnesaemia
○	Hyperphosphataemia
◉	Hypophosphataemia Correct

There are potentially fatal complications which can result from refeeding patients who have had periods of starvation, including those with anorexia nervosa. Hypophosphataemia is a key feature of refeeding syndrome.

Refeeding syndrome is defined as the clinical complications which arise as a consequence of fluid and electrolyte shifts during the nutritional support of malnourished patients.

Refeeding syndrome comprises:

- Hypophosphataemia

- Hypokalaemia
- Hypomagnesaemia
- Deficiencies in vitamins, for example, thiamine and trace minerals, and
- Fluid overload with oedema.

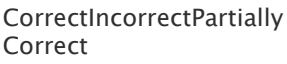
The fluid retention may contribute to cardiac failure.

Next question | Go to summary

Answer Statistics

Times answered: 6191

Test Analysis



Score: 24.46%

Total Answered: 139

Work Smart

Question 40 of 50

A 34-year-old man with ulcerative colitis is admitted with severe bloody diarrhoea. He is opening his bowels approximately 15 times a day and has abdominal pain.

His current medication includes Mezavant and on admission he is commenced on intravenous hydrocortisone. You are asked to request a thiopurine methyltransferase (TPMT) level as the plan is to start azathioprine at a later date.

What percentage of the population has normal or high TPMT activity?

(Please select 1 option)

○	1%	
○	10%	
○	25%	
◉	50%	Incorrect answer selected
○	90%	This is the correct answer

Ninety per cent of the population have normal or high enzyme activity, that is, are homozygous for the wild-type allele.

The enzyme activity of thiopurine methyltransferase (TPMT) is under the control of a genetic polymorphism.

Ten per cent of the population have intermediate levels of TPMT activity, that is, one wild-type and one variant allele.

One in 300 people have no functional enzyme activity.

Several groups of patients - not only those with inflammatory bowel disease - have developed azathioprine induced myelosuppression linked to TPMT deficiency.

Reference:

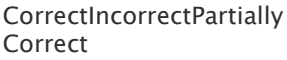
Mowat C, et al. Guidelines for the management of inflammatory bowel disease in adults. *Gut.* 2011;60:571-607.

Next question | Go to summary

Answer Statistics

Times answered: 6293

Test Analysis



Score: 20%

Work Smart

Question 140 of 185

A 65-year-old woman presents with a one month history of jaundice.

She reports her urine is darker than normal and her stools are a pale colour. On direct questioning she admits to pruritus but denies abdominal pain. There is no history of foreign travel. She has lost approximately 1 stone in weight.

On examination she is jaundiced, there are no stigmata of chronic liver disease and no asterixis. Abdominal examination reveals hepatomegaly 4 cm below the costal margin.

Given the most likely diagnosis, which tumour marker is most likely to be elevated?

(Please select 1 option)

○	AFP
○	Beta-hCG
○	CA 19-9 This is the correct answer
○	CA 125
◉	CEA Incorrect answer selected

The presentation is of painless obstructive jaundice; this is most commonly associated, particularly in the presence of systemic symptoms, with development of a hepatobiliary malignancy. The most likely diagnosis in this case is pancreatic carcinoma. The most useful tumour marker for pancreatic cancer is CA 19-9, of which the sensitivity and specificity for pancreatic carcinoma are 80% and 90% respectively.

These figures are closely related to tumour size and the accuracy of using CA 19-9 to identify patients with small surgically resectable tumours is limited.

CA 19-9 does not distinguish between cholangiocarcinoma, pancreatic or gastric carcinoma and may also be raised in patients with severe liver injury due to any other cause.

Concentrations of alpha fetoprotein (AFP) and/or the beta subunit of human chorionic gonadotrophin (beta-hCG) are raised in 80-85% of men who have non-seminomatous germ cell tumours. These markers (as well as lactate dehydrogenase [LDH]) are useful in prognosis, risk stratification and assessing response to treatment in testicular cancer.

The serum concentration of AFP is usually raised in patients with hepatocellular carcinoma (HCC). However the levels do not correlate well with other clinical features such as the size of the tumour, stage or prognosis of the disease. Levels greater than 500 µg/L (normal range 10-20 µg/L) in a high-risk patient is diagnostic of HCC.

AFP may also be elevated in patients with chronic liver disease without HCC for example, acute, or chronic viral hepatitis.

Measurement of the CA 125 is the most widely studied biochemical method of screening for ovarian cancer. The level is raised in approximately 50% of women with early stage disease and in more than 80% of women who have advanced ovarian carcinoma.

Carcinoembryonic antigen (CEA) and CA 19-9 are associated with colorectal cancer (CRC), but they have low diagnostic ability to detect primary CRC in view of overlap with benign disease and low sensitivity for early stage disease.

Other causes of raised CEA include gastritis, peptic ulcer disease, diverticulitis, liver disease, COPD, and diabetes mellitus as well as any acute or chronic inflammatory condition.

Hepatocellular carcinoma would be unlikely in this case as hepatocellular carcinomas do not usually cause obstructive jaundice. Additionally, HCC is rare outside the setting of cirrhosis (typically presenting with decompensation or on routine screening) or chronic HBV.

Reference:

Khan SA, et al. Guidelines for the diagnosis and treatment of cholangiocarcinoma: consensus document. *Gut.* 2002;51:VI1-9.

Next question

Go to summary

Answer Statistics

1 46%

Work Smart

Question 41 of 50

A 55-year-old man is admitted with frank haematemesis.

The patient is a poor historian but a recent discharge summary reports he was under the gastroenterology team two months previously with decompensated alcoholic liver disease.

On examination he appears anxious; he is tachycardic at 105 beats per minute with a blood pressure of 122/90 mmHg. There is evidence of palmar erythema and spider naevi. Abdominal examination reveals hepatosplenomegaly and mild ascites.

There is no evidence of melaena on rectal examination. He has a further episode of haematemesis while in the Emergency Department which the nursing staff estimates at approximately 500 ml.

Which class of hypovolaemic shock is applicable to this patient's clinical state?

(Please select 1 option)

○	Class I
○	Class II This is the correct answer
○	Class III
◉	Class IV Incorrect answer selected
○	Class V

Class II of hypovolaemic shock by blood loss in adults is where there is 750-1500 ml blood loss with 15-30% loss of circulating blood volume. Systolic blood pressure may be normal but the diastolic is raised, heart rate is 100-120 beats per minute. Patients may have a normal respiratory rate but they

are anxious or aggressive in view of the hypovolaemia.

This patient is likely to have had a variceal haemorrhage. There are four classes of hypovolaemic shock by blood loss in adults - I to IV (not five). The criteria are determined by volume of blood lost, vital signs and conscious state.

Classification of haemorrhage:

Parameter	I	II	III	IV
Blood loss (ml)	<750	750-1500	1500-2000	>2000
Blood loss (%)	<15%	15-30%	30-40%	>40%
Pulse rate (beats/min)	<100	>100	>120	>140
Blood pressure	Normal	Decreased	Decreased	Decreased
Respiratory rate (breaths/min)	14-20	20-30	30-40	>35
Urine output (ml/hour)	>30	20-30	5-15	Negligible
CNS symptoms	Normal	Anxious	Confused	Lethargic

CNS = central nervous system.

Modified from Committee on Trauma [Committee on Trauma Advanced Trauma Life Support Manual. Chicago: American College of Surgeons; 1997. pp. 103-112.]

Next question | Go to summary

Answer Statistics

Times answered: 6291

Test Analysis

Work Smart

Question 141 of 185

A 48-year-old man presents with haematemesis and melaena. He admits to high alcohol intake.

On examination he is shocked, his heart rate is 110 beats per minute and blood pressure is 92/74 mmHg. There is evidence of leukonychia and abdominal examination reveals tenderness in the epigastrium.

What is the most likely underlying cause of the gastrointestinal haemorrhage?

(Please select 1 option)

○	Gastric antral vascular ectasia (GAVE)
○	Gastro-oesophageal varices
○	Mallory-Weiss tear
◉	Peptic ulceration Correct
○	Portal hypertensive gastropathy

Peptic ulceration is the commonest cause of acute upper gastrointestinal (GI) haemorrhage.

Epigastric tenderness also points towards peptic ulcer disease. The history of high alcohol intake can be misleading in directing the candidate towards varices.

In this case the answer is the most common cause of an acute upper GI bleed which is peptic ulceration: 25-50% of cases of non-variceal upper GI bleeding and 5% of cases of upper GI haemorrhage are due to varices.

Gastric antral vascular ectasia is a relatively uncommon condition. It typically presents as a cause of

iron-deficiency anaemia as a result of chronic GI blood loss. Overt symptoms of upper GI haemorrhage may be precipitated by administration of anti-platelet agents or anti-coagulants. The mean age of diagnosis is around 70 and there is an association with scleroderma.

Portal hypertensive gastropathy is a poorly understood complication of portal hypertension (usually as a result of chronic liver disease). There is a typical mosaic or snakeskin like appearance to the gastric mucosa which, with increasing severity of the condition, can develop vascular ectasia and become very friable. Typical presentation is with chronic GI blood loss but acute haemorrhage may occur.

References:

Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* 2nd ed. Oxford: Oxford University Press; 2006.

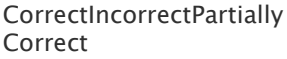
Next question

Go to summary

Answer Statistics

Times answered: 6223

Test Analysis



Work Smart

Core Questions

Question 142 of 185

A 34-year-old woman is referred to the gastroenterology clinic. The GP referral letter states the patient has persistent lethargy and blood results have demonstrated iron deficiency anaemia.

Which of the following statements regarding iron deficiency anaemia is correct?

(Please select 1 option)

○	Endomysial antibody serology to investigate for coeliac disease should always be requested in addition to duodenal biopsies
○	Low serum iron with a low total iron-binding capacity confirms iron deficiency
○	Microcytosis may be absent where there is combined iron and folate deficiency This is the correct answer
○	The presence of Howell-Jolly bodies on blood film would go against coeliac disease
◉	Thrombocytosis indicates chronic blood loss Incorrect answer selected

Iron-deficiency typically results in a microcytosis, but this can be absent when the is concurrent folate deficiency (which typically results in a macrocytosis).

Coeliac disease is the cause of iron-deficiency in 2-3% of cases, and needs to be excluded. The gold-standard for diagnosis are distal duodenal (D2) biopsies. Endomysial antibody serology can be useful to confirm the subtotal villous atrophy is not due to another cause, or as a screening test prior to endoscopy. Antibody titres can also help to determine whether or not a patient is adhering to a gluten-free diet. However, it is not true to say that serology should ALWAYS be requested with biopsies.

Low serum iron (<10 pmol/L) with a high total iron-binding capacity (>70 pmol/L) confirms iron

deficiency.

Howell-Jolly bodies on blood film indicate hyposplenism and are consistent with a diagnosis of coeliac disease.

Thrombocytosis may occur in acute haemorrhage but is also found in a number of other situations such as inflammatory conditions.

Reference:

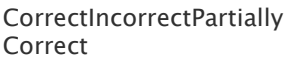
Travis SPL, Ahmad T, Collier J, Steinhart AH. (eds.) *Pocket Consultant Gastroenterology.* 3rd ed. Massachusetts: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Times answered: 6326

Test Analysis



Work Smart

Question 143 of 185

You review an 84-year-old lady in the gastroenterology clinic.

She has been referred by her GP with a three month history of change in bowel habit and weight loss. Recently she has noticed PR bleeding with blood in the stool. There is a history of ischaemic heart disease with a previous myocardial infarction three years ago. She suffers from stable angina and congestive cardiac failure.

Which of the following investigations would be most appropriate to make the diagnosis?

(Please select 1 option)

○	Barium enema
○	Colonoscopy
○	CT abdomen
○	CT colonography
◉	Flexible sigmoidoscopy Correct

Colorectal carcinoma needs to be excluded in this case. This is the third most common cancer in the UK, after breast and lung. Three quarters of cases occur in people aged over 65 years. Around 50% survive for over five years following diagnosis, but it remains the second most common cause of cancer death in the UK. The UK now has a national screening programme for those over 60 years, which uses faecal occult blood testing.

With regard to the investigation of colorectal carcinoma, colonoscopy should be offered to patients

without major co-morbidity. If a lesion suspicious of cancer is detected, a biopsy should be performed to obtain a histological diagnosis.

If the colonoscopy is incomplete, it should be repeated, or CT colongraphy or barium enema should be performed.

Flexible sigmoidoscopy then barium enema should be offered for patients with major co-morbidity. CT colonography is an alternative if the local radiology service is competent in this technique. A small dose of oral contrast is administered 24 hours prior to the procedure and then the colon is imaged using helical CT scanning. Most CT colonography protocols require the use of bowel cleansing agents. The advantages over colonoscopy include no requirement for sedation, smaller risk of perforation, and extra-colonic pathology can also be demonstrated.

If a lesion suspicious of cancer is detected on CT colonography, a colonoscopy and biopsy should be offered (unless there are absolute contraindications).

CT chest, abdomen, pelvis should be offered after the diagnosis is made to estimate the state of the disease. Patients with a rectal tumour should also undergo MRI to assess local disease. Endorectal ultrasound can then be offered if MRI shows disease amenable to local excision (or if MRI is contraindicated). Digital rectal examination is not part of the staging investigations.

In this case, the presence of congestive cardiac failure is a major co-morbidity. A flexible sigmoidoscopy should therefore be first line (especially as she complains of fresh red bleeding, increasing the chance that this is a left-sided lesion). This would allow biopsy if a lesion is seen. If the flexible sigmoidoscopy is normal, a barium enema or CT colonography would be done.

Reference:

NICE. Colorectal cancer: The diagnosis and management of colorectal cancer (CG131).

Next question

Go to summary

Answer Statistics

Times answered: 7079

Test Analysis

Work Smart

Question 144 of 185

A 25-year-old man who is known to have diabetes mellitus and suffers from recurrent chest infections is referred to the gastroenterology team with chronic diarrhoea.

The letter from his GP states the patient has had persistently abnormal liver function tests over the last three months and an abdominal ultrasound scan showed a fatty liver and gallstones.

Given the most likely diagnosis, what is the disease prevalence in northern Europe?

(Please select 1 option)

○	1:300
○	1:1000
○	1:3000 This is the correct answer
○	1:5000
◉	1:10000 Incorrect answer selected

This patient has cystic fibrosis which has a disease prevalence of 1:3000 northern Europeans and gene carriage 1:25.

Cystic fibrosis (CF) is an autosomal recessive disorder which results from mutations in the gene for the CFTR (cystic fibrosis transmembrane conductance regulator). This is a cAMP-activated chloride channel found in secretory epithelia.

Patients have dry protein-rich secretions which lead to complications of the pulmonary and gastrointestinal systems.

CF is the commonest cause of exocrine pancreatic insufficiency. The disease presents with failure to thrive, steatorrhoea, and abdominal pain. Diabetes mellitus can occur.

Twenty per cent have a fatty liver and gallstones are seen in 15% of young adults with the disease. Patients may also develop secondary biliary cirrhosis with mucus plugging of bile ducts and portal hypertension.

Diagnosis is usually clinical based on the pulmonary and gastrointestinal manifestations, family history, and a positive sweat test. Confirmation is with genetic studies.

Management requires a multi-disciplinary team approach with attention to nutrition. Vitamin deficiencies require replacement and pancreatic enzyme supplements are given for exocrine insufficiency.

There has been success with lung and liver transplantation; gene therapy remains the ultimate goal for treatment.

Reference:

Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* Oxford University Press, 2006.

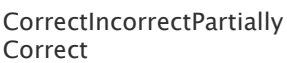
Next question

Go to summary

Answer Statistics

Times answered: 6117

Test Analysis



Work Smart

Question 145 of 185

A 28-year-old woman is referred by her GP to the gastroenterology clinic after a recent gastroscopy with duodenal biopsies confirmed the diagnosis of coeliac disease.

What is the prevalence of coeliac disease in Europe?

(Please select 1 option)

○	1:10
○	1:30
○	1:300 This is the correct answer
○	1:1000
◉	1:3000 Incorrect answer selected

The prevalence of coeliac disease in Europe varies widely and is in the region of between 1:100 and 1:300. It is more common in the Celtic population.

Coeliac disease is caused by a T cell mediated hypersensitivity reaction to gluten which causes intestinal inflammation and atrophy. It presents at any age but in adults the commonest age of presentation is 20s and 30s. Women are slightly more commonly affected.

Patients usually have diarrhoea and steatorrhoea may be present. There is often a mild macrocytic anaemia with low folate. Classically iron or folate deficiency is seen.

Ten per cent to 15% of patients have abnormal liver function tests. Patients may also have thrombocytosis. Low corrected calcium, vitamin D, and zinc are also seen.

IgA anti-endomysial and anti-tissue transglutaminase antibodies are useful serological tests. Anti-endomysial antibodies are 90% sensitive and almost 100% specific. Biopsies from the second part of the duodenum are essential and demonstrate villous atrophy.

Management includes a gluten-free diet - patients should avoid wheat, barley and rye.

Reference:

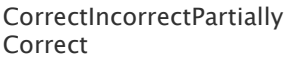
Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* Oxford: Oxford University Press; 2006.

Next question | Go to summary

Answer Statistics

Times answered: 6353

Test Analysis



Work Smart

Question 146 of 185

A 22-year-old man returned from a back-packing holiday three weeks ago. While abroad he developed bloody diarrhoea with abdominal pain. Stool cultures have confirmed *Salmonella enteritidis*.

Which of the following antibiotics would be first line treatment?

(Please select 1 option)

○	Ampicillin
◉	Ciprofloxacin Correct
○	Erythromycin
○	Metronidazole
○	Tetracycline

Ciprofloxacin is the antibiotic of choice for the treatment of *Salmonella* - 500 mg bd for 10-14 days.

Diarrhoea occurs due to increased water in the stool. The definition of chronic diarrhoea is the abnormal passage of three or more loose or liquid stools per day for more than four weeks and/or a daily stool volume > 200 ml/day (weight > 200 g/day).

Ampicillin or ciprofloxacin can be used for the treatment of *Shigella*.

Erythromycin is used in *Campylobacter jejuni*.

Metronidazole is used for *Clostridium difficile*.

Tetracycline is given for *Yersinia enterocolitica*.

Reference:

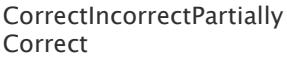
1. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* Oxford: Oxford University Press; 2006.
2. Travis SPL, Ahmad T, Collier J, Steinhart AH. *Pocket Consultant Gastroenterology.* 3rd ed. Oxford: Blackwell Publishing; 2005.

Next question | Go to summary

Answer Statistics

Times answered: 6228

Test Analysis



Score: 25.34%

Work Smart

Question 147 of 185

A 21-year-old woman is referred from the Emergency Department with a paracetamol overdose.

Which of the following is an indication for liver transplantation in acute liver failure as a result of paracetamol overdose?

(Please select 1 option)

○	Arterial pH <7.35
○	Bilirubin >200 µmol/L
○	Creatinine >250 µmol/L
◉	Grade I encephalopathy Incorrect answer selected
○	Prothrombin time >100 seconds (INR >6.7) This is the correct answer

The King's College Criteria are the most widely accepted prognostic tool for patients who present with acute liver failure. Fulfilment of these criteria has a high specificity for mortality, but the sensitivity and negative predictive value remain low. They can be used to guide which patients should be considered for liver transplanation.

For acute liver failure secondary to paracetamol overdose, the criteria are:

pH <7.30 or

INR >6.5 (PT >100 seconds) and serum creatinine >300 µmol/L (>3.4 mg/dL) in patients with grade 3 or 4 hepatic encephalopathy.

Serum bilirubin is only considered in cases of acute liver failure not secondary to paracetamol

overdose.

There are a variety of complications with liver transplantation such as:

- immunological rejection
- effects of immunosuppressive drugs used
- infection, and
- disease recurrence.

Reference:

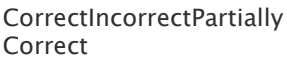
1. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* London: Oxford University Press; 2006.
2. BMJ Best Practice. Acute liver failure.

Next question | Go to summary

Answer Statistics

Times answered: 6319

Test Analysis



Work Smart

Question 148 of 185

A 75-year-old woman is admitted with headache and vomiting. She denies abdominal pain. She reports weight loss of one stone over the last six weeks.

On further questioning it becomes apparent that she has noticed the vomitus contains food from several days ago. Abdominal x ray reveals a prominent gastric bubble.

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Acute cholecystitis
○	Colon carcinoma
○	Gastric outflow obstruction This is the correct answer
○	Peptic ulceration
◉	Raised intracranial pressure Incorrect answer selected

Vomiting of food from several meals ago suggests gastric stasis or gastric outflow obstruction. In this case, with the history of weight loss, an underlying malignancy such as antral gastric carcinoma is likely.

Patients with acute cholecystitis typically have abdominal pain, usually in the right upper quadrant or epigastrium. Nausea and vomiting may also occur. Patients are often febrile.

Abdominal pain and change in bowel habit are the common clinical presentations of colorectal cancer.

Upper abdominal pain or discomfort is the most prominent symptom in patients with peptic ulcer disease; occasionally there may be vomiting.

Clinical features of raised intracranial pressure include headache, reduced consciousness and vomiting. Signs include sixth cranial nerve palsy and papilloedema. Hypertension and bradycardia (Cushing's reflex) may also be seen.

Reference:

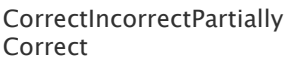
Atkinson RJ, et al. *Medical Masterclass: Gastroenterology and Hepatology.* 2nd ed. London: Royal College of Physicians; 2008.

Next question | Go to summary

Answer Statistics

Times answered: 6299

Test Analysis



Work Smart

Question 149 of 185

A 35-year-old man is referred to the gastroenterology clinic with persistent pain in the rectum. The patient reports recurrent painful oral ulcers.

On direct questioning he admits to red and painful eyes. He also reports he has recently noticed an ulcer over his scrotum.

On examination there is evidence of oral aphthous ulceration; abdominal examination reveals tenderness in the right iliac fossa and a bruit on auscultation of the abdomen. Rectal examination demonstrates perianal ulceration.

What is the most likely diagnosis?

(Please select 1 option)

○	Behçet's syndrome This is the correct answer
○	Crohn's disease
○	HIV infection
◉	Syphilis Incorrect answer selected
○	Tuberculosis

Behçet's syndrome is a vasculitis of unknown pathophysiology.

Onset of disease is typically in the third and fourth decades. It is more common in men in the Middle East and women in the Far East.

Diagnostic criteria include oral aphthous ulcers which are painful, recurrent and non-scarring and two

of:

- genital ulceration
- uveitis
- pustular vasculitis and synovitis, and
- meningoencephalitis.

And the exclusion of inflammatory bowel disease, systemic lupus erythematosus, Reiter's syndrome, and herpes.

Aphthoid ulcers can occur anywhere in the gastrointestinal tract but are most commonly found in the ileo-caecal region, right colon and oesophagus.[1]

The presence of genital ulcers and the absence of significant bowel symptoms both go against a diagnosis of Crohn's disease, rather than the presence of an abdominal bruit which is a rare finding in vasculitis.[2]

Reference:

1. Bloom S, Webster G. *Oxford Handbook of Gastroenterology and Hepatology.* Oxford; Oxford University Press: 2006.
2. Travis SPL, Ahmad T, Collier J, Steinhart AH. *Pocket Consultant Gastroenterology.* Oxford; Blackwell Publishing: 2005.

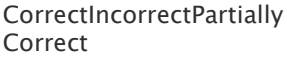
Next question

Go to summary

Answer Statistics

Times answered: 6247

Test Analysis



Work Smart

Core Questions

Question 150 of 185

A 20-year-old man was found to have iron deficiency anaemia when he went to donate blood. The Blood Transfusion Service contacted his general practitioner who referred the patient to the outpatient clinic for further investigation.

Generally, the patient was very well. He had a good appetite, his weight was steady and he ate a normal diet. He had a normal bowel habit and had never passed any blood, mucus or diarrhoea in his stools. The patient denied knowledge of any overt blood loss from any other source.

His general practitioner had organised an open access endoscopy which was normal; duodenal biopsies were unremarkable. He had a limited knowledge of his family history as his mother had died in childbirth and as a result he was an only child. His father had died of what he thought was secondary liver and lung cancer but he was unsure.

On general physical examination he was fit and athletic. The skin and mucosal membranes were unremarkable. Pulse was 70 beats per minute and regular with a blood pressure of 132/78 mmHg. Heart sounds were normal and the chest was clear. His abdomen was soft and non-tender with no palpable masses or organs. Rectal examination was normal. On viewing the rectal mucosa through a rigid sigmoidoscope the colonic mucosa was covered in innumerable polyps.

What specific genetic abnormality is responsible for this appearance?

(Please select 1 option)

○	Germline mutation of the STK11 gene on chromosome 19
○	Homozygous mutation of the MYH gene
○	Loss of the APC gene on chromosome 5 — This is the correct answer
◉	Mutations in mismatch repair genes (e.g. MSH2) — Incorrect answer selected

○	Mutation of the p53 tumour suppressor gene

The patient will need a full colonoscopy and biopsy but the information presented is highly suggestive of familial adenomatous polyposis (FAP), caused by the loss of the APC gene on the long arm of chromosome 5.

Peutz-Jeghers syndrome (PJS) is an autosomal dominant inherited disorder caused by a germline mutation of the STK11 (serine threonine kinase 11) gene, usually located on the long arm of chromosome 19. Peutz-Jeghers syndrome is associated with intestinal hamartomatous polyps, but is usually (90%) associated with peri-oral pigmentation.

Hereditary nonpolyposis colon cancer (HNPCC) and MYC polyposis do not cause multiple polyps as suggested in this case. In HNPCC, affected individuals inherit a mutation in one of several genes involved in DNA mismatch repair, including MSH2, MLH1, and PMS2. Homozygous mutations in the MYH gene have been associated with a phenotype of multiple colorectal adenomas with or without cancer. This accounts for a proportion of FAP patients without a pathogenic APC mutation.

Mutations in the p53 tumour suppressor gene are found in many different cancers. While mutations in p53 are seen in cases of colon cancer, the question asks for the specific mutation associated with polyposis coli.

The main differential in this question is between FAP and PJS but the lack of perioral pigmentation favours FAP as the diagnosis.

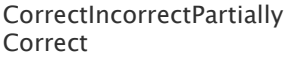
Next question

Go to summary

Answer Statistics

Times answered: 6804

Test Analysis



Work Smart

Core Questions

Question 42 of 50

At what threshold is hypertriglyceridaemia considered a risk factor for pancreatitis?

(Please select 1 option)

○	>5 mmol/L
○	>7 mmol/L
◉	>9 mmol/L Incorrect answer selected
○	>10 mmol/L
○	>11 mmol/L This is the correct answer

Hypertriglyceridaemia is considered a risk factor for pancreatitis when triglyceride levels are above 11.2 mmol/L.

Hypertriglyceridaemia is the third commonest cause of acute pancreatitis after alcohol and gallstones. The definition of hypertriglyceridaemia is a level greater than 1.7 mmol/L. Severe hypertriglyceridaemia is defined as 11.2-22.4 mmoL/L and very severe as above 22.4 mmol/L.

The exact pathophysiology is unclear but it is thought that hydrolysis of triglycerides by pancreatic lipase and the production of free fatty acids lead to inflammatory changes. Although the clinical features are no different to cases of acute pancreatitis due to other causes, pancreatitis secondary to hypertriglyceridaemia has greater severity and is associated with a higher complication rate.

Reference:

Ewald N, Hardt PD, Kloer HU. Severe hypertriglyceridemia and pancreatitis: presentation and

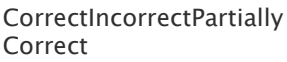
management. *Curr Opin Lipidol.* 2009;20(6):497-504.

Next question | Go to summary

Answer Statistics

Times answered: 3808

Test Analysis



Score: 19.05%

Total Answered: 42

Feedback

Work Smart

Core Questions

Question 43 of 50

Approximately what proportion of patients with primary sclerosing cholangitis (PSC) will have a normal physical examination at the time of diagnosis?

(Please select 1 option)

○	10%
○	25%
○	50% This is the correct answer
○	90%
◉	100% Incorrect answer selected

Approximately half of patients with primary sclerosing cholangitis (PSC) will have normal examination findings at the time of diagnosis.

PSC is a progressive liver disease the aetiology of which is unclear. It is characterised by inflammation and destruction of the intra- and/or extra-hepatic bile ducts which leads to liver fibrosis. It can ultimately lead to cirrhosis, increased risk of malignancy, and liver failure. PSC is associated with inflammatory bowel disease and up to 75% of patients with PSC have ulcerative colitis.

Examination findings can include jaundice, hepatomegaly, splenomegaly, and excoriations. However half of patients will have a normal physical examination.

There is no effective treatment for PSC. Ursodeoxycholic acid has not been shown to have a successful impact on the progression of disease and the majority of patients will eventually require

liver transplantation.

Reference:

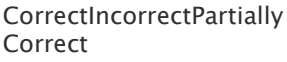
Ali AH, Carey EJ, Lindor KD. Current research on the treatment of primary sclerosing cholangitis. *Intractable Rare Dis Res.* 2015;4(1):1-6.

Next question | Go to summary

Answer Statistics

Times answered: 3796

Test Analysis



Score: 18.6%

Total Answered: 43

Work Smart

Question 151 of 185

The criteria for the clinical diagnosis of toxic megacolon includes evidence of colonic dilatation on x ray in addition to which of the following?

(Please select 1 option)

○	Electrolyte disturbances This is the correct answer
○	Heart rate above 90 beats per minute
○	Hypertension
○	Polycythaemia
◉	Pyrexia above 40°C Incorrect answer selected

Electrolyte disturbance is one of the criteria in addition to radiographic colonic dilatation for the diagnosis of toxic megacolon.

The transverse or right colon is usually the most dilated part in toxic megacolon, often greater than 6 cm and occasionally up to 15 cm on supine films.

Jalan et al[2]. described the following criteria for the clinical diagnosis of toxic megacolon:

Radiographic evidence of colonic distension plus at least three of the following:

- fever >38.6°C
- heart rate >120 beats per minute
- neutrophilic leucocytosis >10.5 × 10^9/L, or
- anaemia.

Plus at least one of the following:

- dehydration
- altered mental status
- electrolyte disturbances, or
- hypotension.

Reference:

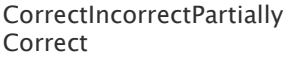
1. BMJ Best Practice. Toxic megacolon.
2. Jalan KN, Sircus W, Card WI, et al. An experience of ulcerative colitis. I. Toxic dilation in 55 cases. *Gastroenterology.* 1969;57(1):68-82.

Next question | Go to summary

Answer Statistics

Times answered: 3829

Test Analysis



Work Smart

Question 152 of 185

Early dumping syndrome is a complication of bariatric surgery.

On average how long does it take to resolve?

(Please select 1 option)

○	1-2 weeks
○	7-12 weeks This is the correct answer
○	6-8 months
○	1 year
◉	3-5 years Incorrect answer selected

Dumping syndrome can occur in up to 50% of patients who have undergone gastric bypass when high levels of simple carbohydrates are ingested.

The onset of early dumping syndrome is rapid, usually within 15 minutes of eating and results from rapid emptying of food into the small bowel. Due to the hyperosmolality of the food there are rapid fluid shifts from the plasma into the bowel leading to hypotension and a sympathetic nervous system response. The presenting symptoms are often colicky abdominal pain, diarrhoea, nausea, and tachycardia.

Patients should avoid foods high in simple sugar and replace them with high fibre, complex carbohydrates and protein-rich foods. Small, frequent meals and leaving a 30 minute gap between solids and liquids are also advised. Early dumping is usually self-limiting and resolves within seven to

12 weeks.

Late dumping syndrome occurs as a result of the hyperglycaemia and subsequent insulin response leading to hypoglycaemia which takes place two to three hours after a meal. Symptoms include dizziness, fatigue, sweating, and weakness. Management is similar to early dumping syndrome.

Reference:

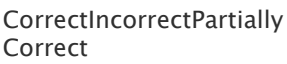
Hammer HF. Medical complications of bariatric surgery: focus on malabsorption and dumping syndrome. *Dig Dis.* 2012;30(2):182-6.

Next question | Go to summary

Answer Statistics

Times answered: 3821

Test Analysis



Work Smart

Question 153 of 185

What is the mode of inheritance of Gilbert's syndrome?

(Please select 1 option)

○	Autosomal dominant
○	Autosomal recessive This is the correct answer
○	X-linked dominant
◉	X-linked recessive Incorrect answer selected
○	None of the above

Gilbert's syndrome results from a defect in the promotor of the gene which encodes the enzyme uridine diphosphoglucuronate glucuronosyltransferase 1A1 (UGT1A1). This enzyme is responsible for the conjugation of bilirubin with glucuronic acid. Inheritance is autosomal recessive therefore the condition manifests only in people who are homozygous for the variant promoter.

Jaundice in patients with Gilbert's syndrome can be triggered by events which lead to increased production of bilirubin, including:

- fasting
- haemolysis
- intercurrent febrile illnesses
- physical exertion
- stress, and
- menses.

Reference:

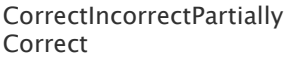
VanWagner LB, Green RM. Evaluating elevated bilirubin levels in asymptomatic adults. *JAMA.* 2015;313(5):516-7.

Next question | Go to summary

Answer Statistics

Times answered: 4277

Test Analysis



Score: 24.18%

Total Answered: 153

Work Smart

Core Questions

Question 154 of 185

Which of the following electrolyte disturbances are seen in patients with gastric outflow obstruction?

(Please select 1 option)

○	Hyperchloraemic metabolic acidosis
○	Hyperchloraemic metabolic alkalosis
◉	Hypochloraemic metabolic acidosis — Incorrect answer selected
○	Hypochloraemic metabolic alkalosis — This is the correct answer
○	None of the above

Patients with gastric outflow obstruction and recurrent vomiting may have electrolyte disturbance such as hypokalaemia or a hypochloraemic metabolic alkalosis.

The pathophysiology of the biochemical abnormalities seen with gastric outflow obstruction is due to persistent vomiting of gastric hydrochloric acid which in turn leads to hypochloraemia and metabolic alkalosis. With worsening dehydration the metabolic disturbance becomes more severe with compromised renal function.

In the early stages the urine has low chloride and high bicarbonate levels in order to compensate for the loss of gastric hydrochloric acid and is appropriately alkaline. With the continued dehydration, sodium is preferentially reabsorbed over the potassium and hydrogen ions which are excreted by the kidneys. The urine becomes paradoxically acidic, hypokalaemia develops, and alkalosis leads to lower circulating levels of ionised calcium.

Anaemia can be seen in patients where the underlying cause includes peptic ulcer disease, malignant disease or large gastric polyps.

Reference:

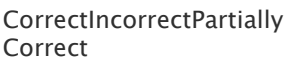
Ahmad J, Thomson S, Taylor M, Scoffield J. A reminder of the classical biochemical sequelae of adult gastric outlet obstruction. *BMJ Case Rep.* 2011.

Next question | Go to summary

Answer Statistics

Times answered: 3914

Test Analysis



Score: 24.03%

Total Answered: 154

Work Smart

Core Questions

Question 155 of 185

Which of the following allows a diagnosis of spontaneous bacterial peritonitis (SBP) on ascitic fluid?

(Please select 1 option)

○	Lymphocyte count ≥100 cells/mm^3	
○	Lymphocyte count ≥250 cells/mm^3	
○	Lymphocyte count ≥300 cells/mm^3	
◉	Neutrophil count ≥100 cells/mm^3	✗ Incorrect answer selected
○	Neutrophil count ≥250 cells/mm^3	✓ This is the correct answer

SBP is diagnosed if there is:

- high ascitic fluid neutrophil count ≥250 cells/mm^3
- positive ascitic fluid bacterial culture, and
- absence of secondary causes of peritonitis (such as bowel perforation).

The absolute neutrophil count in ascitic fluid is calculated by multiplying the total white blood cell count by the percentage of neutrophils in the differential.

Reference:

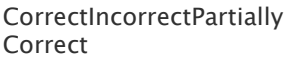
BMJ Best Practice. Spontaneous bacterial peritonitis.

Next question | Go to summary

Answer Statistics

Times answered: 3948

Test Analysis



Score: 23.87%

Total Answered: 155

Feedback

Question Navigator

Work Smart

Question 44 of 50

Which of the following symptoms is most commonly seen in patients with achalasia?

(Please select 1 option)

○	Aspiration
○	Dysphagia to liquids
○	Dysphagia to solids This is the correct answer
○	Regurgitation
◉	Retrosternal fullness Incorrect answer selected

Dysphagia is the most common symptom in patients with achalasia, with 91% presenting with dysphagia to solids and 85% with dysphagia to liquids.

Achalasia involves the selective loss of inhibitory neurones in the myenteric plexus. This leads to the production of vasoactive intestinal polypeptide, nitric oxide, and inflammatory infiltrate responsible for abnormal lower oesophageal sphincter dysfunction and failure to relax in response to swallowing.

The mechanisms responsible for the loss of inhibitory neurones is not well understood. Previous studies suggest hereditary, neurodegenerative, genetic, infectious and autoimmune mechanisms. It is thought most likely to be caused by viral and autoimmune factors leading to the inflammatory changes and damage to the myenteric plexus.

Regurgitation of undigested food or saliva also occurs in patients with achalasia and regurgitation may lead to aspiration (occurring in 8%). Patients may also suffer from a sensation of retrosternal

fullness following a meal.

Reference:

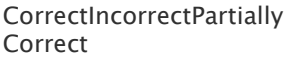
Chuah SK, Hsu PI, Wu KL, et al. 2011 update on esophageal achalasia. *World J Gastroenterol.* 2012;18(14):1573-8.

Next question | Go to summary

Answer Statistics

Times answered: 3775

Test Analysis



Score: 18.18%

Total Answered: 44

Work Smart

Core Questions

Question 156 of 185

How soon after acute exposure to hepatitis B does hepatitis B surface antigen (HBsAg) appear in the serum?

(Please select 1 option)

○	1-10 weeks This is the correct answer
○	2-4 months
○	6-9 months
◉	1-2 years Incorrect answer selected
○	3-5 years

Hepatitis B surface antigen (HBsAg) is the serologic hallmark of hepatitis B virus infection. HBsAg appears in the serum one to 10 weeks following acute exposure to the hepatitis B virus prior to the onset of symptoms or a rise serum alanine aminotransferase (ALT).

In those who recover HBsAg will usually become undetectable after four to six months. Persistence of HBsAg for more than six months indicates chronic infection. Approximately <1% of immunocompetent patients with acute hepatitis B progress to chronic infection. Of those patients with chronic HBV infection the rate of clearance of HBsAg is approximately 0.5% per year.

Reference:

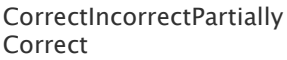
Centers for Disease Control and Prevention (CDC). Hepatitis B Serology.

Next question | Go to summary

Answer Statistics

Times answered: 3958

Test Analysis



Score: 23.72%

Total Answered: 156

Feedback

Question Navigator

Work Smart

Question 157 of 185

What proportion of patients diagnosed with primary biliary cirrhosis (PBC) are positive for anti-mitochondrial antibodies (AMA)?

(Please select 1 option)

○	25%
○	45%
○	65%
○	85%
◉	95% Correct

Anti-mitochondrial antibodies (AMA) are the serologic hallmark of primary biliary cirrhosis (PBC) and are positive in approximately 95% of patients.

Occasionally AMA are found in patients with no other features suggestive of PBC. Many of these patients will eventually develop features of PBC. Anti-nuclear antibodies (ANA) can be seen in up to 70% of patients with PBC.

PBC is a progressive autoimmune liver disease characterised by a triad of:

- chronic cholestasis
- circulating AMA, and
- characteristic liver biopsy findings of non-suppurative destructive cholangitis and interlobular bile duct destruction.

It is thought to be related to environmental exposure in genetically vulnerable individuals and typically occurs in middle-aged females. The main clinical features include:

- fatigue
- pruritis
- jaundice
- xanthomata
- osteoporosis, and
- dyslipidaemia.

Ursodeoxycholic acid is the mainstay of treatment which works partly by reducing the concentration and injury from toxic bile acids. Liver transplantation is the definitive therapy for advanced disease with a ten year survival rate of approximately 70% post-transplantation.

Reference:

Purohit T, Cappell MS. Primary biliary cirrhosis: Pathophysiology, clinical presentation and therapy. *World J Hepatol.* 2015;7(7):926-41.

Work Smart

Core Questions

Question 158 of 185

Which of the following analgesics would be most suitable for the management of liver capsule pain?

(Please select 1 option)

○	Codeine
○	Dexamethasone This is the correct answer
○	Naproxen
◉	Oramorph Incorrect answer selected
○	Paracetamol

Corticosteroids can be used in the management of liver capsule pain and dexamethasone is usually the choice of steroid.

Pain-sensitive structures in the region of the liver include the liver capsule, vessel, and biliary tract. Stretching of the liver capsule by a primary hepatoma or metastases within the liver can cause chronic cancer pain. This commonly presents as dull, right-sided subcostal pain. Referred pain at the top of the ipsilateral shoulder occurs due to diaphragmatic irritation if the superior aspect of the capsule is involved.

Dexamethasone 8-16 mg can be administered in single or divided doses. If there is no improvement after four to seven days of use then it should be discontinued by gradually reducing the dose by 2-4 mg every three to five days with the aim of stopping completely.

Reference:

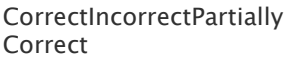
Hall EJ, Sykes NP. Analgesia for patients with advanced disease: 2. *Postgrad Med J.* 2004;80(942):190-5.

Next question | Go to summary

Answer Statistics

Times answered: 3796

Test Analysis



Score: 24.05%

Total Answered: 158

Feedback

Work Smart

Core Questions

Question 159 of 185

In severe acute pancreatitis, supplemental parenteral nutrition should be provided if enteral feeding is not achieved within what period of time?

(Please select 1 option)

○	1 to 2 days
○	2 to 3 days This is the correct answer
○	5 to 7 days
○	7 to 10 days
◉	10 to 14 days Incorrect answer selected

To maintain gut barrier function and prevent early bacterial translocation, enteral feeding should ideally be started within the first 24 hours of admission. The presence of fluid collections in severe pancreatitis or raised pancreatic enzymes is not necessarily a contraindication to oral or enteral feeding.

In a subgroup of patients there is correlation of pain, recurrence of disease, or worsening of fluid collections with feeding, whether oral or enteral. If the fluid collections are not suitable for drainage or if enteral feeding is not achieved within 48 to 72 hours, supplemental parenteral nutrition should be provided.

Reference:

Oláh A, Romics L Jr. Enteral nutrition in acute pancreatitis: a review of the current evidence. *World J*

Gastroenterol. 2014;20(43):16123-31.

Next question | Go to summary

Answer Statistics

Times answered: 3781

Test Analysis

CorrectIncorrectPartially Correct

Score: 23.9%

Total Answered: 159

Feedback

Work Smart

Question 45 of 50

What is the most common presenting symptom of small bowel lymphoma?

(Please select 1 option)

○	Bleeding
○	Constipation
○	Loss of appetite
◉	Pain Correct
○	Weight loss

Pain is the most common presenting feature of small bowel lymphoma the pathogenesis of which is poorly understood.

Lymphoma comprises 15-20% of all small bowel tumours with the ileum most commonly affected. Primary lymphomas of the small bowel include:

- mucosa-associated lymphoid tissue (MALT) lymphoma
- diffuse large B cell lymphoma
- immunoproliferative small intestinal disease (IPSID), and
- enteropathy-associated T cell lymphoma (EATL).

Patients with coeliac disease are at higher risk of T cell lymphoma. There is a male predominance and the median age at presentation of 25 years. Patients with primary gastrointestinal tract lymphoma may present with:

- anorexia
- weight loss
- nausea and vomiting
- chronic pain
- abdominal fullness
- early satiety, and
- constipation.

There may even be symptoms of obstruction, perforation or haemorrhage.

Findings on CT vary and may include multiple tumours, narrowing of the bowel lumen and mesenteric nodal masses.

Reference:

1. Ghimire P, Wu GY, Zhu L. Primary gastrointestinal lymphoma. *World J Gastroenterol.* 2011;17(6):697-707.
2. Schottenfeld D, Beebe-Dimmer JL, Vigneau FD. The epidemiology and pathogenesis of neoplasia in the small intestine. *Ann Epidemiol.* 2009;19(1):58-69.

Work Smart

Question 160 of 185

For the diagnosis of *Giardia*, what is the specificity of ELISA against *Giardia* antigen 65?

(Please select 1 option)

○	≥80%
○	≥88%
○	≥90%
○	≥95%
◉	≥98% Correct

Several immunoassays using antibodies against cyst or trophozoite antigens have been developed for stool analysis in the diagnosis of *Giardia*. Available kits include direct immunofluorescent assays (DFA), immunochromatographic assays, and enzyme-linked immunosorbent assays (ELISA).

In general, these methods have greater sensitivity and faster turnaround time than conventional stool microscopy methods. Specificity and cost are usually relatively comparable. In a study of stool samples from patients with abdominal symptoms using different assays for detection of *Giardia*, the specificity of a number of different immunoassays was ≥98%.

ELISA uses the immunological principle of an antigen binding to its specific antibody thereby allowing the detection of small quantities of antigens such as proteins, peptides, hormones, or antibody in a fluid sample. The assay utilises enzyme-labelled antigens and antibodies to detect biological molecules. The antigen is allowed to bind to a specific antibody, which is subsequently detected by a secondary antibody that is coupled to an enzyme. A visible colour change or fluorescence then indicates the presence of antigen which allows

quantitative or qualitative measures.

Reference:

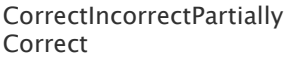
Gan SD, Patel KR. Enzyme immunoassay and enzyme-linked immunosorbent assay. *J Invest Dermatol.* 2013;133(9):e12.

Next question | Go to summary

Answer Statistics

Times answered: 3948

Test Analysis



Score: 24.38%

Total Answered: 160

Work Smart

Core Questions

Question 161 of 185

Which of the following is a histological finding on duodenal biopsy in the diagnosis of coeliac disease?

(Please select 1 option)

○	Absence of epithelial apoptosis
○	Absence of fissures
◉	Crypt hyperplasia Correct
○	Reduced intraepithelial lymphocytes
○	Villous hypertrophy

The diagnosis of coeliac disease is established when there is concordance between the serology and histological findings. It is confirmed when symptoms resolve subsequently on a gluten-free diet. However, demonstration of normalisation of histology is not always required and many patients show persistent villous atrophy despite adherence to a gluten-free diet and improvement in symptoms.

Patients with positive coeliac serology and those with a high probability of coeliac disease (>5%) regardless of the serology should have an upper endoscopy with small bowel biopsies for confirmation of the diagnosis.

On histology the duodenal mucosa may:

- appear atrophic with loss of folds
- contain visible fissures
- have a nodular appearance, or

- have scalloped folds.

Histological features range from mild changes such as only increased intraepithelial lymphocytes, to a flat mucosa with total mucosal atrophy, complete loss of villi, enhanced epithelial apoptosis, and crypt hyperplasia.

Reference:

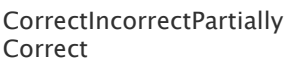
Datta Gupta S. Pathology of celiac disease: a brief review. *Trop Gastroenterol.* 2013;34(4):207-26.

Next question | Go to summary

Answer Statistics

Times answered: 3834

Test Analysis



Score: 24.84%

Work Smart

Question 162 of 185

What is the approximate incidence of forming pigment gallstones in patients with sickle cell disease?

(Please select 1 option)

○	20%
○	30%
○	50% This is the correct answer
◉	80% Incorrect answer selected
○	90%

Patients with haemolytic disorders such as sickle cell disease and hereditary spherocytosis have an approximately 50% incidence of forming pigment gallstones.

Black pigment gallstones are common in sickle cell disease and are due to an increase in bilirubin excretion. Their small size allows migration into the common bile duct causing low-grade obstruction typically leading to hyperbilirubinaemia rather than bile duct dilatation. In view of the high incidence of gallstones with such conditions cholecystectomy is suggested for patients with sickle cell disease if abdominal surgery is being performed for other reasons.

Reference:

Ebert EC, Nagar M, Hagspiel KD. Gastrointestinal and hepatic complications of sickle cell disease. *Clin Gastroenterol Hepatol.* 2010;8(6):483-9; quiz e70.

Work Smart

Question 163 of 185

Which is the most common feature and clinical hallmark of carcinoid syndrome?

(Please select 1 option)

○	Bronchospasm
◉	Cardiac valvular lesions ✗ Incorrect answer selected
○	Cutaneous flushing ✓ This is the correct answer
○	Diarrhoea
○	Venous telangiectasia

Episodic flushing is the clinical hallmark of carcinoid syndrome occurring in 85% of patients. It mainly involves the face, neck, and upper chest. In severe cases flushes are accompanied by a drop in blood pressure and an increase in heart rate.

The clinical manifestations of carcinoid syndrome are dependent upon the combination of bioactive substances secreted. One of the main features of enterochromaffin cells is the production, storage, and secretion of serotonin. When serotonin and other products are released into the portal circulation they undergo hepatic metabolism and do not usually cause systemic symptoms or signs. However, with liver metastases or with primary lesions in the bronchus and/or ovaries, the systemic features of carcinoid syndrome manifest.

Carcinoid syndrome occurs in less than 10% of patients, typically with cutaneous flushing of the face, neck and upper chest. Up to 75% of patients have diarrhoea. Less often patients may develop cardiac valvular abnormalities mainly affecting the right side of the heart, such as tricuspid

regurgitation, tricuspid stenosis, pulmonary regurgitation, and pulmonary stenosis. Bronchoconstriction and venous telangiectasia may also occur.

Reference:

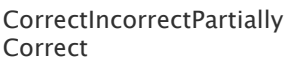
van der Lely AJ, de Herder WW. Carcinoid syndrome: diagnosis and medical management. *Arq Bras Endocrinol Metabol.* 2005;49(5):850-60.

Next question | Go to summary

Answer Statistics

Times answered: 3765

Test Analysis



Score: 24.54%

Total Answered: 163

Work Smart

Question 164 of 185

Which of the following is more likely to be seen in female patients with Crohn's disease who smoke?

(Please select 1 option)

○	Earlier age of disease onset This is the correct answer
○	Less aggressive disease course
○	Older age of disease onset
○	Reduced risk of requiring immunosuppression
◉	Reduced risk of requiring surgery Incorrect answer selected

Data support an association between smoking and developing Crohn's disease. It has been shown to be associated with earlier age of onset of disease and more frequent need for immunosuppression among women with Crohn's disease but not men.

Smoking is associated with a more aggressive disease course with patients more likely to require immunosuppression and surgery and a high risk of recurrence of disease following ileo-caecal resection. It is thought that smoking could alter smooth muscle tone affecting endothelial function through the production of nitric oxide production or that it affects the integrity of the gut mucous barrier.

Oxidative stress may also be a cause as it has been found that mononuclear cells from smokers with Crohn's disease but not ulcerative colitis were less sensitive to anti-inflammatory protection against oxidative free radical stress.

Smoking cessation is associated with an increased risk of ulcerative colitis.

Reference:

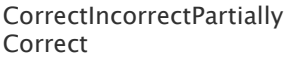
Ananthakrishnan AN. Epidemiology and risk factors for IBD. *Nat Rev Gastroenterol Hepatol.* 2015;12(4):205-17.

Next question | Go to summary

Answer Statistics

Times answered: 3758

Test Analysis



Score: 24.39%

Total Answered: 164

Work Smart

Question 164 of 185

Which of the following is more likely to be seen in female patients with Crohn's disease who smoke?

(Please select 1 option)

○	Earlier age of disease onset
○	Less aggressive disease course
○	Older age of disease onset
○	Reduced risk of requiring immunosuppression
○	Reduced risk of requiring surgery

Submit answer | Skip question | Go to summary

Test Analysis

CorrectIncorrectPartially Correct

Work Smart

Core Questions

Question 165 of 185

A 70-year-old woman comes to the gastroenterology clinic for review. She has been referred by her GP with a microcytic anaemia, and has recently undergone an upper GI endoscopy that demonstrated a small scar thought to be from a healed duodenal ulcer. *Helicobacter pylori* screening was negative. Other past history of note includes hypertension for which she is taking indapamide, and asthma for which she uses a Seretide inhaler.

Examination reveals a BP of 135/70 mmHg, pulse is 75 bpm and regular. Breath sounds are normal, abdomen is soft and non tender, and her BMI is 25 kg/m^2. PR reveals an empty rectum with no masses.

Investigations:

Haemoglobin	92 g/L	(115-160)
Mean corpuscular volume (MCV)	72 fL	(76-100)
White cell count (WCC)	8.2 ×10^9/L	(6-10)
Platelet count	210 ×10^9/L	(150-400)
Na	138 mmol/L	(135-145)
K	3.9 mmol/L	(3.5-5.5)
Creatinine	121 µmol/L	(60-90)

2/3 faecal occult blood samples positive.

Which of the following is the most appropriate next step?

(Please select 1 option)

⊙	Barium enema Incorrect answer selected
○	Capsule endoscopy
○	Colonoscopy This is the correct answer
○	CT abdomen
○	Sigmoidoscopy

The absence of lower GI symptoms raises the possibility of a right-sided colonic lesion resulting in the microcytic anaemia seen here. The best way to rule out an underlying carcinoma is with a colonoscopy after adequate bowel preparation. Age-specific and sex-specific incidence rates for the UK (2009-2011) for colon cancer suggest this approximates to 3.5% per year in the 70-74 year age group. For this reason, further investigation is essential, especially given positive faecal occult blood (FOB) samples.

Sigmoidoscopy will not adequately visualise the whole colon, and barium enema is not as sensitive for small polyps versus colonoscopy, although barium enema would be an alternative option if colonoscopy is not tolerated.

CT abdomen with contrast also runs the risk of missing a small right-sided lesion, but CT colonography (which includes full bowel preparation) is a reasonable alternative in those unable to tolerate colonoscopy.

Capsule endoscopy is generally most useful for imaging the small bowel, where it has an important role in visualising angiodysplasia.

Next question Go to summary

Answer Statistics

Times answered: 3131

Work Smart

Core Questions

Question 166 of 185

A 43-year-old wine buyer for a supermarket presents to the gastroenterology clinic for review. He has suffered from diarrhoea over the past 6-9 months, which is slowly worsening, and he tells you that this is difficult to flush away and often sticks to the toilet bowl. He also suffers from dull epigastric pain which comes on 1-2 hours after a meal, and has lost 4 kg in weight over the past three months. One previous episode of acute pancreatitis 18 months ago is noted.

On examination his BP is 115/82 mmHg, pulse is 80 bpm and regular. He is mildly tender in the epigastrium, and is thin with a BMI of 19 kg/m^2.

Investigations reveal:

Haemoglobin	102 g/L	(135-180)
Mean corpuscular volume (MCV)	104 fL	(76-100)
White cell count (WCC)	7.9 $\times 10^9$/L	(6-10)
Platelet count	112 $\times 10^9$/L	(150-400)
Na	134 mmol/L	(135-145)
K	3.4 mmol/L	(3.5-5.5)
Creatinine	89 µmol/L	(60-110)
Alanine aminotransferase (ALT)	112 U/L	(0-35)
Alkaline phosphatase	185 IU/L	(40-120)
Albumin	25 g/L	(30-50)

Amylase	205 U/L	(30-110)

Which of the following is the best way to confirm exocrine pancreatic insufficiency?

(Please select 1 option)

○	Abdominal CT
○	Faecal elastase This is the correct answer
○	Faecal fat
○	Hydrogen breath test
◉	MRCP Incorrect answer selected

Confirmation of exocrine pancreatic insufficiency requires a functional test, and faecal elastase is the best option. One gram of stool is required for analysis, and the level of elastase-1 can indicate:

- <100 mcg/g - severe pancreatic insufficiency
- 100-200 mcg/g - moderate insufficiency
- >200 mcg/g - normal.

The advantage of this versus other options is that the test can be performed on a single spot faeces sample.

Abdominal CT and MRCP may be useful in demonstrating pancreatic anatomy, including areas of calcification and fibrosis consistent with chronic pancreatitis; they are not a functional measure.

Faecal fat is generally avoided now because of difficulties for the patient in collecting all their faeces.

Hydrogen breath testing is used in the diagnosis of bacterial overgrowth syndrome.

Next question | Go to summary

Answer Statistics

Work Smart

Core Questions

Question 167 of 185

A 49-year-old woman with a previous history of IV drug abuse comes to the clinic for review. Over the past few months she has suffered flitting joint pains and increasing fatigue. She has also developed a purpuric rash affecting her arms and legs and suffered from two transient episodes of VIIth nerve palsy in the past year. On examination her BP is 122/82, pulse is 80 and regular. You confirm the purpuric rash and evidence of small joint synovitis. There are a number of spider naevi over the upper body and some small palpable lymph nodes in both axillae.

Investigations:

Hb	118g/l	115-160
WCC	9.2 x10^9/l	6-10
PLT	138 x 10^9/l	150-400
Na	138 mmol/l	135-145
K	3.8 mmol/l	3.5-5.5
Cr	98 µmol/l	60-90
Glucose	5.9 mmol/l	<7.0
ALT	150 U/l	7-56
Alk phos	215 IU/l	44-147
Bilirubin	18 µmol/l	<22
Cryoglobulins	0.03g/l	<0.01
CXR	Normal film	

Which of the following is the most likely diagnosis?

(Please select 1 option)

○	Autoimmune hepatitis
○	Hepatitis B
○	Hepatitis C This is the correct answer
○	Non-Hodgkin's lymphoma
◉	Primary biliary cirrhosis Incorrect answer selected

The answer is Hepatitis C. The history of previous drug abuse, with raised LFTs, should lead to consider viral hepatitis as a cause of her symptoms, and it is Hepatitis C which is most commonly associated with cryoglobulinaemia. Anti-virals +/- B cell targeting agents such as rituximab are the mainstay of intervention.

Cryoglobulins are also described in association with both autoimmune hepatitis and primary biliary cirrhosis, although both are less likely diagnoses given the previous history of IV drug abuse. Although there are some small palpable lymph nodes, more marked changes including potentially enlarged hilar lymph nodes on the CXR would be expected in patients with non-Hodgkin's lymphoma.

Next question | Go to summary

Answer Statistics

Times answered: 2704

Test Analysis

Work Smart

Question 168 of 185

An 18-year-old man with a history of hereditary spherocytosis presents to the Emergency Department with extreme lethargy, shortness of breath, and mild chest pain on exertion, which has developed over the past few days. He reports suffering a short flu-like illness associated with a rash affecting his cheeks a few days before the symptoms began. He has suffered from one episode of cholecystitis during the past few years, and has so far declined splenectomy. On examination his BP is 105/82, pulse is 95 and regular. He looks very pale. He has a palpable spleen on abdominal palpation.

Investigations:

Hb	48g/l	135-180
WCC	5.2 $\times 10^9$/L	6-10
PLT	132$\times 10^9$/L	150-400
Na	138 mmol/l	135-145
K	4.1 mmol/l	3.5-5.5
Cr	98 µmol/l	60-110
CRP	65 mg/l	<10

Which of the following is the most likely cause of his anaemia?

(Please select 1 option)

- ○ Cytomegalovirus infection
- ○ Epstein Barr virus infection

○	Influenza virus infection
◉	Parvovirus B19 infection Correct
○	Rubella infection

The answer is Parvovirus B19 infection. Parvovirus B19 is a single stranded DNA virus and is associated with aplastic crisis in patients pre-disposed to haemolytic anaemia, including those with hereditary spherocytosis. It's likely the flu-like illness reported here was B19 infection, which affects erythrocyte precursors hence its ability to result in severe anaemia in patients whose red cells have a shorter lifespan than normal. Patients with severe aplastic crisis are likely to require red cell transfusion until their counts recover, which is usually associated with clearance of the infection over a 10-14 day period.

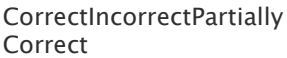
CMV, Epstein Barr, and influenza virus do not affect the erythrocyte precursors, and are therefore not associated with aplastic crisis. Although rubella infection presents with similar symptoms to parvovirus infection, it is not classically associated with anaemia, and it is unlikely in this patient given he will most likely have been vaccinated.

Next question | Go to summary

Answer Statistics

Times answered: 2695

Test Analysis



Work Smart

Core Questions

Question 169 of 185

A 42-year-old woman comes to the hepatology clinic for review. She has suffered increasing lethargy over the past few months to the point that she is barely able to hold down her job, and most recently has developed intermittent nausea, anorexia, and itching. Past medical history of note includes Hashimoto's thyroiditis for which she takes thyroxine 100 mcg per day.

On examination her BP is 125/80 mmHg, and pulse is 72 bpm and regular. There are scratch marks over the abdomen related to the itching and you notice she has xanthelasma. Abdominal examination reveals 1 finger breadth hepatomegaly, and her BMI is 26.

Investigations:

Hb	110g/l	115-160
WCC	9.9 $\times 10^9$/L	6-10
PLT	135$\times 10^9$/L	150-400
Na	139 mmol/l	135-145
K	4.2 mmol/l	3.5-5.5
Cr	85 µmol/l	50-90
ESR	45 mm/hr	<10
Ca2+	2.2 mmol/l	2.1-2.65
Albumin	32g/l	30-50
Total protein	75g/l	60-85
Alkaline phosphatase	291 U/l	40-120

ALT	55 U/l	0-20
Bilirubin	26 µmol/l	<22

Which of the following is the most likely diagnosis?

(Please select 1 option)

◉	Autoimmune hepatitis ☐ Incorrect answer selected
○	Non-alcoholic steatohepatitis (NASH)
○	Primary biliary cirrhosis ☐ This is the correct answer
○	Primary sclerosing cholangitis
○	Viral hepatitis

The answer is primary biliary cirrhosis, (PBC). Lethargy and itching are prominent early features in PBC, which is most commonly seen in middle aged women (especially those with coexistent autoimmune thyroid disease). The elevation in alkaline phosphatase coupled with a smaller rise in ALT is typical of the condition, and the difference between total protein and albumin raises the possibility of elevated immunoglobulins, also seen in PBC. Anti-mitochondrial antibodies are seen in association with PBC at a titre of 1 in 40 or higher. Ursodeoxycholic acid may be of value in treating PBC if started very early, but ultimately patients usually require a liver transplant.

Autoimmune hepatitis is less likely because there is a more marked elevation in alkaline phosphatase with a much smaller rise in ALT, and cholestatic symptoms would be less common. NASH is less likely here given the relatively normal BMI. It can be difficult to differentiate between primary sclerosing cholangitis (PSC) and PBC, but PSC is more common in men and often in combination with inflammatory bowel disease. There are no risk factors to suggest viral hepatitis reported in this patient's history, and a more prominent rise in ALT would be expected.

Next question | Go to summary

Answer Statistics

1 21%
2 9%

Work Smart

Core Questions

Question 170 of 185

A 76-year-old man presents with dysphagia and 1.5 kg unintentional weight loss for three months. He reports some "funny feelings in his throat" when swallowing food. His wife also reports that he has become increasingly short of breath. He reports no changes in his bowel habit and denies melaena or fresh rectal bleeding.

An examination reveals a palpable lump in the throat which has an audible gurgle when the patient swallows, but there are no other abnormalities.

Bloods show the following:

Sodium	140 mmol/L	(135-145 mmol/L)
Potassium	4 mmol/L	(3.5-4.9 mmol/L)
Creatinine	90 µmol/L	(60-110 µmol/L)
Urea	5. 4 mmol/L	(2.5-7.5 mmol/L)
Adjusted calcium	2.3 mmol/L	(2.2-2.6 mmol/L)
ALT	37 U/L	(7-55 U/L)
ALP	60 U/L	(45-115 U/L)
Bilirubin	14 µmol/L	(<22 µmol/L)
Albumin	45 g/L	(35-55 g/L)
Haemoglobin	140 g/L	(115-140 g/L)
White cell count	10×10^{9}/L	($4\text{-}11 \times 10^{9}$/L)
	9	9

Platelets	200×10 /L	(150-400 ×10 /L)
Neutrophils	2.7×10 ^{9}/L	(1.8-8 ×10 ^{9}/L)
CRP	<5 mg/L	(<5 mg/L)

Which is the most likely diagnosis?

(Please select 1 option)

○	Achalasia
○	Barrett's oesophagus
○	Follicular thyroid carcinoma
○	Oesophageal carcinoma
◉	Pharyngeal pouch Correct

A pharyngeal pouch is a herniation between the thyropharyngeus and cricopharyngeus muscles (Killian's dehiscence, in the inferior constrictor of the pharynx), resulting in a diverticulum where food and other debris can collect. The aetiology is not fully understood, but malfunction of the upper oesophageal sphincter probably contributes.

Patients typically present with dysphagia, regurgitation of food, aspiration, chronic cough, and weight loss. Clinical signs are often lacking, but there may be a palpable lump in the neck which gurgles on palpation. Food decaying in the pouch can also result in halitosis.

Endoscopy should only be performed with caution, as it can result in perforation of the pouch and therefore barium swallow is preferred as an initial investigation.

Management depends on the size of the lesion. Larger lesions can still be treated with diverticulectomy, but minimally invasive techniques and cricopharyngeal myotomy and the mainstay of treatment of smaller lesions.

Oesophageal carcinoma would definitely be high on the list of differential diagnoses in this patient, but you might expect more progressive dysphagia (initially to solids, then progressing to liquids) and more marked weight loss. It would be unusual to have a palpable neck lump in oesophageal carcinoma (unless it is an involved lymph node).

Barrett's oesophagus is essentially an asymptomatic condition diagnosed on endoscopy, although you would expect the patient to have symptoms of gastro-oesophageal reflux.

Follicular thyroid carcinoma might present in an enlarged thyroid resulting in some dysphagia, and the thyroid may be palpable but this would be an unusual presentation and the lump would not gurgle on swallowing.

Achalasia typically presents with dysphagia to solids, regurgitation and chest pain but a palpable lump in the neck would not be expected.

References & Further Reading:

Patient.info: Pharyngeal Pouch

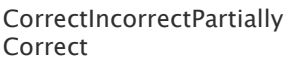
NICE: Endoscopic stapling of pharyngeal pouch

Next question | Go to summary

Answer Statistics

Times answered: 1648

Test Analysis



Work Smart

Core Questions

Question 46 of 50

A 35-year-old woman with Crohn's disease has had several episodes of relapse which are refractory to oral and rectal steroids, and to azathioprine. She presents to hospital with severe bloody diarrhoea of three days duration, associated with abdominal pain and perianal ulceration.

On examination she looks pale and lethargic and baseline observations reveal BP 80/60, HR 120. All her other observations are normal.

She is admitted, given intravenous fluids, and following further unsuccessful attempts at medical management, undergoes colectomy and resection of a significant amount of ileum, with end ileostomy formation.

You review her on the ward three days later when she complains of severe watery diarrhoea whenever she attempts to eat.

Which of the following is the most likely diagnosis?

(Please select 1 option)

◉	Hypocalcaemia Incorrect answer selected
○	Ongoing active Crohn's disease
○	Short bowel syndrome This is the correct answer
○	Vitamin D deficiency
○	Zinc deficiency

Short bowel syndrome occurs when there has been resection of a significant portion of the small

intestine, resulting in malabsorption of nutrients.

Management should initially focus on replacement of fluids and electrolytes. Gastric hypersecretion should be managed with proton pump inhibitors, and loperamide or codeine can be used to slow gastric and bowel transit time. The patient should initially be kept nil by mouth to reduce the osmotic load. Specialist teams, including dieticians, should then be consulted regarding the most appropriate feeding to initiate. The bowel often adapts after the initial post-operative period and refeeding should be initiated slowly with the aim of the patient having a normal oral diet.

As there has been a significant bowel resection, which has obviously been carefully considered following unsuccessful medical management, it is unlikely the treating time would have left the patient with bowel actively affected by Crohn's disease.

Hypocalcaemia, vitamin D deficiency, and zinc deficiency can all result from small bowel syndrome, but these are longer-term complications and do not typically present so acutely, and not with this clinical picture.

Reference & Further Reading:

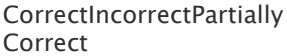
Short bowel syndrome: a nutritional and medical approach

Next question | Go to summary

Answer Statistics

Times answered: 1652

Test Analysis



Work Smart

Core Questions

Question 171 of 185

A 30-year-old female is brought to Accident and Emergency by her family; she is suffering from severe confusion and muscle twitches. They report a year long history of diarrhoea and bloating, which the patient has declined to visit the GP regarding. They also report approximately 10 kg of weight loss in the same time.

Of note in her past medical history is bipolar disorder, for which she takes citalopram and lithium.

Bloods reveal:

Sodium	160 mmol/L	(135-145 mmol/L)
Potassium	3.0 mmol/L	(3.5-4.9 mmol/L)
Creatinine	130 µmol/L	(60-110 µmol/L)
Urea	10 mmol/L	(2.5-7.5 mmol/L)
Adjusted calcium	2.3 mmol/L	(2.2-2.6 mmol/L)
ALT	43 U/L	(7-55 U/L)
ALP	65 U/L	(45-115 U/L)
Bilirubin	12 µmol/L	(<22 µmol/L)
Albumin	37 g/L	(35-55 g/L)
Haemoglobin	129 g/L	(115-140 g/L)
White cell count	6.1 $\times 10^{9}$/L	(4-11 $\times 10^{9}$/L)
Platelets	198 $\times 10^{9}$/L	(150-400 $\times 10^{9}$/L)

Neutrophils	4.4 ×10 ^{9}/L	(1.8-8 ×10 ^{9}/L)
CRP	<5 mg/L	(<5 mg/L)

Following acute management of her electrolyte abnormalities, she undergoes colonoscopy which demonstrates multiple dark pigmented areas in the descending colon.

Which is the most likely diagnosis?

(Please select 1 option)

○	Drug induced colitis
○	Familial adenomatous polyposis (FAP)
○	Hereditary nonpolyposis colorectal cancer (HNPCC)
○	Melanosis coli This is the correct answer
◉	Microscopic colitis Incorrect answer selected

Melanosis coli is a benign condition associated with chronic laxative use, most commonly osmotic laxatives. The pigmentation is due to lipofuscin formation and accumulation in macrophages. It is most commonly identified at endoscopy and requires no treatment other than counselling on laxative use.

The hypernatraemia and hypokalaemia are likely a result of chronic diarrhoea, which has also contributed to the weight loss.

Microscopic and drug induced colitis would not present in such a way with bloody painful stools to be expected.

Both FAP and HNPCC would present with numerous tumours within the bowel lumen and usually a family history of bowel cancer.

References & Further Reading:

ScienceDirect: Osmotic laxatives: An unusual cause of melanosis coli?

MedicineNet.com: Melanosis Coli (Pseudomelanosis Coli)

Work Smart

Core Questions

Question 172 of 185

A patient presents with a number of episodes of rectal bleeding over the last week. He describes a cup full of fresh red blood present in the toilet following defecation, but denies any pain on passing stool. He has no other past medical history of note nor does he take any medications. He does however report a history of his father having a "bowel problem".

Bloods show:

Sodium	140 mmol/L	(135-145 mmol/L)
Potassium	4 mmol/L	(3.5-4.9 mmol/L)
Creatinine	99 mmol/L	(60-110 mmol/L)
Urea	11 µmol/L	(2.5-7.5 µmol/L)
Adjusted calcium	2.3 mmol/L	(2.2-2.6 mmol/L)
ALT	37 U/L	(7-55 U/L)
ALP	87 U/L	(45-115 U/L)
Bilirubin	11 µmol/L	(<22 µmol/L)
Albumin	39 mmol/L	(35-55 mmol/L)
Haemoglobin	79 g/L	(115-140 g/L)
White cell count	6.3 $\times 10^9$/L	(4-11 $\times 10^9$/L)
Platelets	156 $\times 10^9$/L	(150-400 $\times 10^9$/L)
Neut	3.0 $\times 10^9$/L	(1.8-8 $\times 10^9$/L)

On clinical examination you notice a number of small red areas on the patients lips, about 1 mm in diameter which disappear on pressure before refilling.

Which of the following is the inheritance pattern of the underlying condition?

(Please select 1 option)

◉	Autosomal dominant Correct
○	Autosomal recessive
○	Mitochondrial
○	X linked dominant
○	X linked recessive

The patient here likely has hereditary haemorrhagic telangectasia, or Osler-Weber-Rendu disease. This is an autosomal dominant form of angiodysplasia associated with lip telangiectasia. It is present in 5 per 100,000 patients and often presents with lower or upper GI bleeds, due to telangiectasia within the gastrointestinal tract. Patients can also have arteriovenous malformations (AVMs) affecting the viscera, such as the lungs, brain, or spine. Gastrointestinal bleeding is usually managed with iron supplements or blood transfusion, and AVMs may require surgery.

HHT is not inherited in any of the other mechanisms given in the question.

Next question Go to summary

Answer Statistics

Times answered: 1640

Work Smart

Core Questions

Question 47 of 50

A 44-year-old gentleman with dyspepsia associated with H. pylori was recently treated with triple therapy. He returns to your clinic for follow up to ensure the infection has been cleared.

Which is the most appropriate test to confirm eradication?

(Please select 1 option)

○	Endoscopic biopsy culture
○	H.pylori antigen on blood sample
○	Rapid urease test during endoscopy
○	Stool sample for H.pylori antigen
◉	Urea breath test Correct

The gold standard test for confirming *Helicobacter pylori* eradication is the urea breath test. Patients swallow urea labelled with a carbon isotope. If H. pylori is present in the stomach, its urease enzyme splits the urea and isotope-labelled carbon dioxide is present in the patient's exhaled breath (within 10-30 m). This can be measured either by scintillation or mass spectrometry depending on the carbon isotope used. A baseline breath sample is also required from the patient. Patients should have stopped antibiotics at least four weeks prior to the test being done, and proton pump inhibitors at least two weeks prior. The test has high sensitivity (95-98%) and high specificity (98%) for confirming H. pylori eradication.

The rapid urease test requires a biopsy sample (taken at OGD) and has a lower sensitivity.

Serum antibody will remain positive after eradication and has a lower sensitivity and specificity as well.

Culture of gastric biopsy has a higher specificity (100%) but is less sensitive and more invasive. It is used more commonly when testing antibiotic sensitivity in H. pylori which is resistant to initial triple therapy.

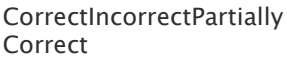
Stool sample is less specific and sensitive than the urea breath test.

Next question | Go to summary

Answer Statistics

Times answered: 1619

Test Analysis



Score: 21.28%

Work Smart

Core Questions

Question 173 of 185

A 28-year-old woman presents with three months of diarrhoea and rectal bleeding. She has had similar episodes in the past, and has diagnosed herself with lactose intolerance. She currently reports 10-12 watery bloody stools per day and is becoming distressed by the effect it is having on her quality of life.

Examination reveals a diffuse tender abdomen.

Bloods show the following:

Sodium	136 mmol/L	(135-145 mmol/L)
Potassium	4.6 mmol/L	(3.5-4.9 mmol/L)
Creatinine	119 µmol/L	(60-110 µmol/L)
Urea	8.1 mmol/L	(2.5-7.5 mmol/L)
Adjusted calcium	2.1 mmol/L	(2.2-2.6 mmol/L)
ALT	44 U/L	(7-55 U/L)
ALP	66 U/L	(45-115 U/L)
Bili	13 µmol/L	(<22 µmol/L)
Albumin	32 g/L	(35-55 g/L)
Haemoglobin	104 g/L	(115-140 g/L)
White cell count	5×10^{9}/L	(4-11 $\times 10^{9}$/L)
MCV	86 fl	(80-96 fl)

Platelets	170 $\times 10^{9}$/L	(150-400 $\times 10^{9}$/L)
Neutrophils	5.3 $\times 10^{9}$/L	(1.8-8 $\times 10^{9}$/L)
CRP	30 g/L	(<5 g/L)

A biopsy from colonoscopy reveals crypt abscess formation and lymphocytic infiltration of the lamina propria.

Which is the most likely diagnosis?

(Please select 1 option)

○	Coeliac disease
○	Colorectal carcinoma
○	Crohn's disease
◉	Ulcerative colitis Correct
○	Whipple's disease

A history of bloody diarrhoea in a young female with anaemia, mildly raised CRP, and the above findings on colonoscopy biopsy are diagnostic of ulcerative colitis.

Treatment during an acute flare is dietary support, oral and/or rectal steroids followed by immunosuppression and surgery if medical treatments are unsuccessful.

Crohn's disease is classically associated with strictures, transmural inflammation, fistulae, ulcers, and cobblestoning on endoscopy.

Coeliac disease does not present with bloody diarrhoea. A histological diagnosis is usually only possible if the duodenum is biopsied during colonoscopy.

Whipple's disease is caused by Tropheryma whippelii, a gram-positive bacterium, which results in malabsorption, arthritis, and endocarditis.

Colorectal carcinomas are often characteristic in their appearance and so suspected during endoscopy, and the biopsy would be diagnostic of malignancy. It is thankfully rare in this age group.

Next question Go to summary

Work Smart

Question 174 of 185

A 54-year-old man attends his GP with recurrent problems with acid reflux despite changes to his diet and reduction of his alcohol intake. An endosocopy is performed which reveals Barrett's oesophagus.

Which of the following is the optimum management for this patient in regards to symptom control and disease monitoring?

(Please select 1 option)

○	Endoscopy only every year
○	Long term PPI and endoscopy every year This is the correct answer
○	Long term PPI and endoscopy every five years
○	Trial of PPI and endoscopy every five years
◉	Trial of PPI only Incorrect answer selected

Barrett's oesophagus is found in 10-20% of patients with chronic acid reflux. It is a premalignant change to the oesophageal mucosa and increases patients risk of developing adenocarcinoma by 50-100 times.

Symptomatic relief is with long term proton pump inhibitors, which help to reduce further dysplastic changes.

Endoscopy and biopsy annually is the optimum surveillance method for detection of early transformation to oesophageal adenocarcinoma.

Work Smart

Question 48 of 50

A 55-year-old alcoholic presents with an acute episode of severe abdominal pain and jaundice.

Bloods show the following:

Sodium	136mmol/L	(135-145mmol/L)
Potassium	4.6mmol/L	(3.5-4.9mmol/L)
Creatinine	119µmol/L	(60-110µmol/L)
Urea	8.1mmol/L	(2.5-7.5mmol/L)
Adjusted calcium	2.18mmol/L	(2.2-2.6mmol/L)
ALT	58U/L	(7-55U/L)
ALP	116U/L	(45-115U/L)
Bilirubin	23µmol/L	(<22µmol/L)
Albumin	30g/L	(35-55g/L)
Haemoglobin	104g/L	(115-140g/L)
White cell count	5 ×109/L	(4-11 ×109/L)
MCV	102 fl	(80-96fl)
Platelets	170 ×109/L	(150-400 ×109/L)
Neutrophils	5.3 ×109/L	(1.8-8 ×109/L)
CRP	30g/L	(<5g/L)

Amylase	700U/L	(25-110U/L)

On examination there is minor hepatomegaly but no splenomegaly.

The patient also reports dark urine.

What is the most likely underlying diagnosis?

(Please select 1 option)

◉	Acute pancreatitis Correct
○	Gallstones
○	Intravascular haemolysis
○	Liver cirrhosis
○	Pancreatic cancer

Alcohol abuse is a risk factor for the development of acute pancreatitis, which typically presents with severe epigastric pain. There is acute inflammation of the pancreas, which results in release of exocrine enzymes that cause auto-digestion. Serum amylase is classically raised three or more times normal, and hypocalcaemia is relatively common.

Raised bilirubin and/or serum aminotransferase suggest underlying gallstones.
Pancreatic cancer tends to be relatively asymptomatic in its initial stages, but can then result in obstructive jaundice as the mass enlarges (i.e. you would expect a more raised bilirubin and alkaline phosphatase).
Cirrhosis results in a small shrunken liver, and raised ALT and ALP (and gamma-GT if the cause is alcohol).
Intravascular haemolysis would cause anaemia and a raised bilirubin.

Reference & Further Reading:
http://patient.info/doctor/acute-pancreatitis-pro

Next question Go to summary

Work Smart

Core Questions

Question 175 of 185

A 28-year-old man presents with change in bowel habit and a mass in his right iliac fossa.

He states that his father, grandfather, and uncle have had bowel cancer previously and his sister breast cancer.

He is subsequently diagnosed with bowel carcinoma, and is referred to genetics where he is diagnosed with hereditary non-polyposis colorectal carcinoma (HNPCC).

How would he have been screened had he been diagnosed with HNPCC prior to developing bowel carcinoma?

(Please select 1 option)

○	Colonoscopy every five years
○	Colonoscopy every two years This is the correct answer
◉	Computed Topography (CT) scan every two years Incorrect answer selected
○	CT scan every five years
○	Sigmoidoscopy every two years

HNPCC (also known as Lynch syndrome) is an autosomal dominant disorder of DNA mismatch repair gene on chromosome 2 and 3. Affected individuals have a 50-80% lifetime risk of developing colorectal carcinoma.

Individuals found to have HNPCC have colonscopy every two years from the age of 25. If they have a relative who has been diagnosed with a bowel carcinoma prior to the age of 30, then colonscopic

screening might be recommended from an earlier age.

Sigmoidoscopy is not adequate: the whole colon needs to be visualised.

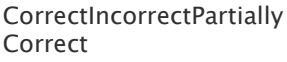
CT is not as sensitive as colonscopy at diagnosing bowel malignancy, and the use of radiation in this context is not justified.

Next question | Go to summary

Answer Statistics

Times answered: 1661

Test Analysis



Score: 25.14%

Total Answered: 175

Work Smart

Core Questions

Question 176 of 185

A 21-year-old woman presents with flatulence, bloating, loose stools, and diarrhoea for three months. She takes no medication and has no allergies. Avoidance of wheat, dairy, and gluten has not improved her symptoms. Colonoscopy reveals nothing of concern.

Which is the most likely diagnosis?

(Please select 1 option)

○	Coeliac disease
○	Crohn's disease
○	Irritable bowel syndrome (IBS) ✓ This is the correct answer
○	Laxative abuse
◉	Ulcerative collitis ✗ Incorrect answer selected

IBS is a chronic relapse-remitting condition, which classically causes bloating, change in bowel habit, and abdominal pain which improves with defecation. It predominantly affects women (5:1 F:M). The aetiology is not well understood, but it seems to involve abnormal smooth muscle activity and visceral hypersensitivity, and abnormal central processing of painful stimuli. It is also associated with increased levels of psychiatric distress and poor coping strategies.

Diagnosis is based on exclusion of other bowel pathologies and clinical examination and history. Treatment is based on dietary change, psychological support, and recognition of triggers.

Crohn's disease is an autoimmune mediated disease which is T-cell mediated causing diarrhoea,

weight loss, and peri-anal ulcers and fistulas. It can affect any section of bowel from mouth to anus.

Ulcerative colitis predominantly presents with bloody painful diarrhoea.

Both Crohn's disease and ulcerative colitis have characteristic findings on colonoscopy.

There is no history alluding to laxative abuse, and colonoscopy would most likely show melanosis coli.

Coeliac disease would likely be improved by removing gluten and wheat from the diet, and is diagnosed by duodenal biopsies following colonoscopy.

Reference & Further Reading:

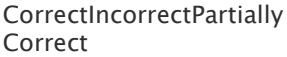
NICE: Irritable bowel syndrome in adults: diagnosis and management

Next question | Go to summary

Answer Statistics

Times answered: 1627

Test Analysis



Work Smart

Core Questions

Question 177 of 185

A 40-year-old woman presents with dysphagia and weight loss for three months as well as vomiting, which she describes as containing recognisable pieces of food. She reports that the symptoms are progressive and that it is predominantly solid food which she cannot tolerate, but on further questioning she reports she has had trouble with liquids too.

A CXR shows what looks like a fluid level behind the right heart border.

Which is the most likely diagnosis?

(Please select 1 option)

○	Achalasia This is the correct answer
○	Intususseption
◉	Multiple sclerosis Incorrect answer selected
○	Oesophageal adenocarcinoma
○	Pharyngeal pouch

Achalasia is the inability of the lower oesophageal sphincter to relax, causing a functional stricturing of the oesophagus. Patients usually complain of dysphagia to both solids and liquids though the former is slightly more common.

Chest x ray may demonstrate the presence of a fluid level behind the heart. Barium swallow may show a classical bird beak appearance, and treatment is primarily endoscopic or surgical with oesophageal dilatation or surgical myotomy.

Pharnygeal pouch is an option in this scenario however patients classically report a gurgling sensation in their throat and also complain of halitosis.

Oesophageal cancer is classically associated with significant weight loss and progressive dysphagia to solids and then liquids.

One would expect other systemic symptoms if MS were the underlying diagnosis.

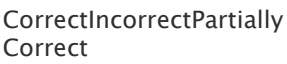
Intususseption is a predominantly seen in children, where one are of bowel is invaginated by the other producing bloody "redcurrant jelly" stools.

Next question | Go to summary

Answer Statistics

Times answered: 1658

Test Analysis



Work Smart

Core Questions

Question 178 of 185

A 58-year-old man attends for routine blood tests prior to giving blood, which reveal the following:

Na	136 mmol/L	(135-145 mmol/L)
K	4.6 mmol/L	(3.5-4.9 mmol/L)
Cr	80 µmol/L	(60-110 µmol/L)
Urea	6 mmol/L	(2.5-7.5 mmol/L)
Adjusted calcium	2.22 mmol/L	(2.2-2.6 mmol/L)
ALT	44 U/L	(7-55 U/L)
ALP	66 U/L	(45-115 U/L)
Bili	12 µmol/L	(<22 µmol/L)
Albumin	36 g/L	(35-55 g/L)
HB	104 g/L	(115-140 g/L)
WBC	5×10^9/L	($4\text{-}11 \times 10^9$/L)
MCV	75 fl	(80-96 fl)
Platelets	170×10^9/L	($150\text{-}400 \times 10^9$/L)
Neut	5.3×10^9/L	($1.8\text{-}8 \times 10^9$/L)
CRP	5 g/L	(<5 g/L)

Which is the most appropriate investigation to determine the underlying diagnosis?

(Please select 1 option)

○	Blood film
○	Colonoscopy This is the correct answer
◉	CT angiography of the abdomen Incorrect answer selected
○	CT chest/abdomen/pelvis
○	Serum ferritin levels

This patient most likely has iron deficiency anaemia as demonstrated by the low haemoglobin and MCV.

Given that the patient is otherwise well, presumably with no significant symptoms, the next most appropriate investigation is colonoscopy to look for GI malignancy. If this is negative it would be prudent to undertake an OGD.

Ferritin levels may show that iron stores are depleted but will not indicate the underlying diagnosis resulting in iron deficiency.

Blood film would demonstrate the classical changes of iron deficiency (hypochromic, pencil-shaped cells), but would also be unlikely to give us the underlying diagnosis.

CT chest/abdomen/pelvis is less sensitive at demonstrating an intra-luminal malignancy, and tissue diagnosis is not possible.

CT angiography would be of more use in angiodysplasia or bowel ischaemia, which are both less likely than a bowel malignancy in the above scenario.

Reference & Further Reading:

NICE: Anaemia - iron deficiency

Next question | Go to summary

Answer Statistics

Work Smart

Core Questions

Question 179 of 185

A 52-year-old male presents with jaundice and feeling generally unwell. He is a sewage worker. Over the last week, he was having a non-productive cough and a headache which hasn't settled. He spent most of the day resting as he felt too weak and tired to do anything. He was pyrexial over the last 24 hours.

On examination, you noticed he has swollen ankles and some crackles bilateral at the bases. His blood test revealed the following:

ALP	138
ALT	420
Bilirubin	64
Urea	18.3
Creatinine	200
Na	137
K	4.5
Hb	105
Platelets	120
WCC	15.1
Neutrophils	11.1

What is the most likely diagnosis?

(Please select 1 option)

○	Alcoholic Hepatitis
○	Cholangitis
○	Dengue Fever
○	Hepatitis A
◉	Weil's Disease Correct

Weil's disease is the severe form of leptospirosis. Leptospirosis is an infection caused by bacteria called Leptospira. It is transmitted by both wild and domestic animals, but the most common are rodents. It is often transmitted via the urine of rodents.

Signs and symptoms can range from mild symptoms as cough, nausea and vomiting headaches, muscle pains, and fevers to severe symptoms such as meningitis. If the infection causes jaundice, kidney failure and bleeding, it is then known as Weil's disease.

If it affects the lung and causes pulmonary haemorrhage, then it is known as severe pulmonary haemorrhage syndrome.

As the patient is a sewage worker, he is a risk of leptospirosis.

Hepatitis A and alcoholic hepatitis is unlikely to present with acute kidney injury.

Cholangitis presents as post hepatic jaundice but this patient presented with hepatic jaundice.

Dengue fever usually present as are sudden-onset fever, headache (typically located behind the eyes), muscle and joint pains, and a rash.

Weil's disease is a life- threatening condition and is treated aggressively with IV antibiotics, supportive therapy and in some situations, dialysis. Effective antibiotics include penicillin, doxycycline, cefotaxime or ceftriaxone.

References:

McBride, AJ; Athanazio, DA; Reis, MG; Ko, AI (Oct 2005). "Leptospirosis". Current opinion in infectious diseases. 18 (5): 376-86.

Next question Go to summary

Work Smart

Core Questions

Question 180 of 185

A 77-year-old female presented with progressive difficulty in swallowing both solid and liquid food for the last two years. This time, when seen in the clinic, she was grossly emaciated and complained that she had not had any major meal for the last one week. She also had a nagging cough for the last two years. She had been investigated extensively for a cough with sputum for AFB, pulmonary function test and bronchoscopy, among other things, but all tests had turned out negative.

On examination, there was no lymphadenopathy or organomegaly. The only other clinical feature of note was a strikingly bad breath. The patient also remarked that her partner had complained to her about this foul odour but even after countless visits to the dentist and changing her toothpaste, she had been unable to tackle the problem.

What is the likely diagnosis?

(Please select 1 option)

◉	Chronic sinusitis Incorrect answer selected
○	Esophageal carcinoma
○	Gastro-colic fistula
○	Lung abscess
○	Pharyngeal pouch This is the correct answer

Pharyngeal pouch (or diverticula) usually presents in the elderly. They can easily be diagnosed by barium studies.

Pharyngeal pouch is a diverticulum in the posterior pharyngeal wall which can give rise to the above symptoms. The opening of the pouch acts as an alternative passage for swallowed food. As the food items get trapped inside, the pouch enlarges and gives rise to both mechanical obstruction of the esophagus and also the bad breath.

Chronic sinusitis can present with a bad breath, but dysphagia is unlikely.

Esophageal carcinoma is a strong differential diagnosis in this case. The age of the patient is also suggestive of malignancy, but a malignancy usually progresses rapidly and it is unlikely to remain undiagnosed for two years.

Gastro-colic fistula is another important cause of bad breath. But dysphagia is unusual. Rather, there would be nausea and vomiting. Weight loss is also a feature of this condition.

In lung abscess, the chronic cough and bad breath are possible. Usually, lung abscess presents as an acute event with fever, cough, hemoptysis etc. However, sometimes, in tubercular and fungal abscess, such chronic presentation is possible. Weight loss can also occur in chronic infection anywhere. But dysphagia is unlikely.

References & Further Reading:

Siddiq MA et al. Pharyngeal pouch (Zenker's diverticulum). Postgrad Med J 2001;77:506-511

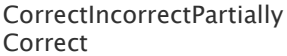
Next question

Go to summary

Answer Statistics

Times answered: 359

Test Analysis



Work Smart

Core Questions

Question 181 of 185

A 35-year-old woman was referred to the gastroenterology clinic with rectal bleeding. She underwent a colonoscopy which showed dark brown pigmentation of the entire colon, along with a small polyp in descending colon. Also, internal piles were found.

Further questioning revealed that the patient had a history of chronic constipation for which she was taking some form of herbal medicine for a long time.

Which of the following histopathological picture may be found in colonic biopsy of this patient?

(Please select 1 option)

○	Fungal hyphae in colon
○	Increased melanocytes in colonic epithelium
◉	Macrophage infiltration of colonic mucosa lamina propria with lipofuscin pigment inside the macrophages Correct
○	Malignant changes of colonic epithelium
○	Malignant melanoma changes of colonic epithelium

This patient, with history of laxative abuse, shows diffuse pigmentation of colon. This is suggestive of melanosis coli, a phenotypic consequence of chronic abuse of anthraquinone laxatives. Chronic use of anthraquinone laxatives cause injury to the colonic epithelium, with generation of lipofuscin pigment. This pigment is subsequently engulfed by the macrophages to give rise to the histological picture. Generally, these changes are reversible and stopping the laxative may lead to disappearance of the phenotypic changes.

The modern laxatives such as liquid paraffin and polyethylene glycol do not cause these changes. However, alternative "medicine" drugs contain ingredients like cascara which contain anthraquinones.

Colonic fungal infection does cause this type of colonoscopic appearance.

In melanosis coli, there is not increased melanocytes but rather, increased abnormal lipofuscin pigment.

Malignant changes of the colon are usually seen as localized growth or polypoidal mass. Diffuse pigmentation is not found.

Melanoma of the colon is very rare. Usually, it presents as a localized mass, which may or may not be pigmented. The rectal bleeding in this patient has no relation to melanosis coli. Melanosis coli is an asymptomatic condition and diagnosed incidentally on colonoscopy. The bleeding in this case is caused by either the piles or the polyp.

References and Further Reading:

Kew ST, Chakravarthi S. Melanosis Coli. N Engl J Med 2013; 368:2303

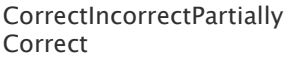
Next question

Go to summary

Answer Statistics

Times answered: 341

Test Analysis



Work Smart

Core Questions

Question 182 of 185

A 4-year-old boy came to the ER with sudden onset severe abdominal pain. His parents said that he passed a little amount of bloody stool about an hour ago, after which, this severe pain started.

On examination, the abdomen was distended with tympanic notes on percussion all over. A straight X ray of abdomen, done at ER, showed distended bowel loops. Past medical history revealed that the boy had severe developmental delays with shortness of height. The fingers were small and the palm was smooth with a single crease.

What is the likely diagnosis for this boy's presentation?

(Please select 1 option)

○	Hirschsprung disease
○	Intestinal tuberculosis
○	Intussusception of bowel This is the correct answer
◉	Meckel diverticulitis Incorrect answer selected
○	Sigmoid volvulus

This boy shows features of Down's syndrome. He has presented with typical features of sudden intestinal obstruction associated with passage of blood per rectum. All of these together suggest intestinal intussusception. This is quite a common cause of intestinal obstruction in children in general and in Down's syndrome in particular. There is a classic triad in intussusception of acute abdominal pain, currant jelly stool and palpable abdominal mass, usually in right iliac fossa. But such triad is not always found. Abdominal distension, as in this case, is also a common feature.

Hirschsprung disease is aganglionosis of colon, causing obstruction. It usually presents in neonatal period.

Intestinal tuberculosis usually has a gradual onset. The presentation may be varied with fever, weight loss, diarrhoea and/or constipation. It may also present with features of malabsorption.

Meckel's diverticulum is also quite common in Down's syndrome. It can present with diverticulitis, which is a cause of acute abdomen in childhood. It can, moreover, cause intussusception. But in this question, the best option is intussusception of bowel because intussusception may occur without any meckel's diverticulum too.

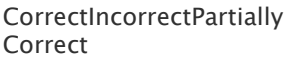
Sigmoid volvulus is an uncommon problem in children. It is usually found in the elderly. Usually, there is a history of chronic constipation.

Next question | Go to summary

Answer Statistics

Times answered: 332

Test Analysis



Work Smart

Question 49 of 50

A 28-year-old woman was admitted with severe upper abdominal pain.

Upper GI endoscopy revealed an active duodenal ulcer.

Rapid urease test from the ulcer biopsy specimen was positive. She was started on oral triple-drug therapy for H. pylori infection.

What is the best test to follow her up to confirm eradication of H. pylori?

(Please select 1 option)

○	Blood serology
○	Clinical symptoms
○	Repeat endoscopy and biopsy
○	Stool antigen test
◉	Urea breath test Correct

Eradication of H. pylori is tested using a C-13 urea breath test.

The NICE guidelines of 2004, amended 2014 clearly state that the C-13 Urea breath test is the preferred method for testing eradication. Stool antigen test has not been validated yet.

Blood serology is a good test for detecting infection but it is not validated at follow-up because the antibodies may remain positive for a long time after eradication.

Clinical symptoms are not a good guide to determine eradication.

Repeat endoscopy can determine healing of the ulcer, but it is an invasive procedure and not always feasible.

References:

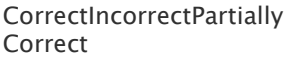
NICE guidelines: Clinical guideline [CG184]

Next question | Go to summary

Answer Statistics

Times answered: 339

Test Analysis



Score: 24.49%

Total Answered: 49

Work Smart

Core Questions

Question 183 of 185

A 39-year-old sailor has had repeated visits to his GP for heartburn and dyspepsia. He had been an irregular visitor and his treatments had been discontinuous in the past.

This time, after an acute episode of dyspepsia and abdominal pain, he underwent an upper GI endoscopy which showed Barret's esophagus. Histopathology showed very low-grade dysplasia.

What is the best next line of management?

(Please select 1 option)

○	A trial of PPI therapy This is the correct answer
○	Endoscopic ablation therapy
○	Endoscopic mucosal resection
○	Lower esophageal resection
◉	Only observation Incorrect answer selected

Barret's oesophagus occurs due to gastro-oesophagal reflux disease. The initial therapy for this condition is PPI-based. Usually, once-daily dosing of PPI is preferred.

Observation only is not a preferred strategy. Barret's oesophagus is a premalignant condition. Hence, quick intervention is needed.

The three remaining therapies are used in the NICE pathways in patients with moderate to severe grade dysplasia. Also, if there is inadequate response to PPI therapy, then these modalities of treatment may be tried. They are also used for recurrent disease.

References & Further Reading:

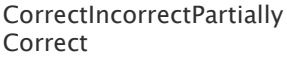
Shaheen NJ et al. ACG Clinical Guideline: Diagnosis and Management of Barrett's Esophagus. Nov 2015
The NICE guidelines are also similar: Gastro-oesophageal reflux disease and dyspepsia in adults: investigation and management: Clinical guideline [CG184]

Next question | Go to summary

Answer Statistics

Times answered: 356

Test Analysis



Score: 25.14%

Total Answered: 183

Work Smart

Core Questions

Question 184 of 185

A 33-year-old man was admitted to the hospital with acute bloody diarrhoea. He had had blood in stool occasionally over the last 6 months but he had not visited any doctor for it. This time, he presented with fever and tachycardia. After admission, an emergency colonoscopy showed inflamed mucosa with occasional bleeding spots. A biopsy was taken from the colonic mucosa which revealed inflammatory cellular infiltration only in the mucosa with aggregation of neutrophils in crypts.

What is the first line of management in this patient?

(Please select 1 option)

○	Aminosalicylate enema
○	Intravenous corticosteroids This is the correct answer
○	Oral aminosalicylates
◉	Oral ASA plus oral steroids Incorrect answer selected
○	Oral steroids

This patient has ulcerative colitis (UC). There are typical clinical features and also, mucosal biopsy shows crypt abscesses. According to Truelove and Witts' criteria, this patient has severe UC. Thus, according to the NICE guidelines, intravenous corticosteroids are used to induce remission.

Topical aminosalicylate is used in mild to moderate UC especially that limited to rectum or sigmoid colon.

Oral ASA is also used in mild to moderate UC, according to the patient's preferences although it

alone is less effective than topical preparation. In inflammatory exacerbations, high dose oral ASA induction may be used.

Oral ASA plus oral steroids is used in acute exacerbation of mild to moderate UC or left sided UC.

Oral steroids are usually add-on in step-2 therapy. It may be used as firstline if there is intolerance to oral ASA.

Further reading:

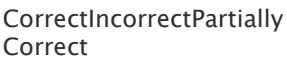
Ulcerative colitis: management: Clinical guideline [CG166]

Next question | Go to summary

Answer Statistics

Times answered: 345

Test Analysis



Work Smart

Question 50 of 50

A 52-year-old woman came to the GP clinic with generalized weakness.

On examination, there was moderate pallor and tenderness in the right iliac fossa. She also complained that recently, she had become constipated with one bowel movement every 3 to 5 days. Both of her brothers had died from colon cancer recently and she is afraid that "it runs in the family".

What is the next line of investigation to screen for colon carcinoma in this lady?

(Please select 1 option)

○	Stool for occult blood test (OBT)
○	Colonoscopy This is the correct answer
○	CT enterography
◉	CECT abdomen Incorrect answer selected
○	Carcinoembryonic antigen (CEA) level

In suspected colonic carcinoma, colonoscopy is the best test for diagnosis, according to NICE guidelines.

Stool for OBT can be positive in colorectal cancer, but it is not specific. Any colitis, piles or upper GI pathology can also cause positive result in stool.

CT enterography or colonography is a new test which has shown promise in detecting early colorectal cancer, but its sensitivity has not been tested in any adequately powered study yet. Also, CT colonography cannot be used to take tissue sample.

CECT abdomen is used to stage colon Ca. But it is not a good screening test.

CEA is not a good screening test. It can be used to detect recurrence after therapy.

References & Further Reading:

NICE: Colorectal cancer: the diagnosis and management of colorectal cancer, 2011

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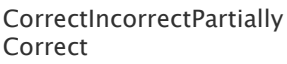
Answer Statistics

Times answered: 346

Test Analysis



Score: 24%

Total Answered: 50

Work Smart

Core Questions

Question 185 of 185

A 28-year-old woman presented to the gastroenterology clinic with recurrent chest pain. She had these episodes of pain usually while eating and they lasted 5-10 minutes. She also had significant weight loss of 19 kg over the last three months. Recently, she got alarmed when food, both solid and liquid, "seemed to get stuck" inside her chest.

What is the best method of diagnosis of this condition?

(Please select 1 option)

○	Barium swallow study
○	ECG
○	Echocardiography
○	Esophageal manometry This is the correct answer
◉	Upper GI endoscopy with biopsy Incorrect answer selected

This young woman has dysphagia to both solids and liquids from the start. At this age, achalasia is the most likely diagnosis. Chest pain is also a typical feature of achalasia and results from oesophagal spasm. Regurgitation of food is also a common feature. Oesophageal manometry is the most sensitive test for diagnosis of achalasia.

Barium swallow study also is used for diagnosing achalasia. But barium swallow study shows dilated oesophagus. Manometry can detect achalasia in the early stage before oesophagal dilatation has occurred.

This is not a cardiac condition. Neither ECG nor echocardiography will help in diagnosis, but ECG can help to rule out a cardiac cause.

Upper GI endoscopy is not the preferred test for diagnosis of achalasia. It can show residual food particles and a dilated oesophagus, but diagnosis of the pressure alteration requires manometry. However, endoscopy is a necessary part of the diagnostic algorithm to rule out pseudo-achalasia.

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Answer Statistics

Times answered: 348

Test Analysis