Applied Knowledge Test Practice Exam – 2023.2

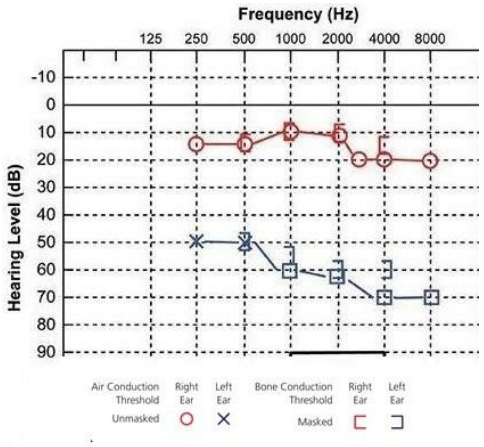
Answer and Rationale Booklet

PLEASE NOTE: All stated patient temperatures are measured tympanically and medication doses are all oral unless otherwise stated. Abnormal results appear in **bold** text with an asterisk (*) after the unit result and includes results that are not presented in a table.

Q1

Jenny Pinkus, aged 54 years, presents to your rural clinic after she woke up yesterday morning with a feeling of ‘cotton wool’ in her left ear. On examination, her temperature is 36.6°C, blood pressure 128/72 mmHg. Bilateral otoscopy reveals normal tympanic membranes and external auditory canals. Weber test localises sound towards the right ear. On Rinne testing for the right ear, air conduction is better than bone conduction. On Rinne testing for the left ear, air conduction is better than bone conduction, but both are reduced.

The practice nurse performs an audiogram (see image).



What is the **MOST** appropriate next step?

A. Amoxicillin 500 mg three times daily for five days
B. Naproxen 275 mg three times daily
C. Oxymetazoline 0.05% nasal spray instilled twice daily for three days
D. Prednisolone 60 mg daily for 7–14 days
E. Valaciclovir 1 g three times daily for seven days

Answer:
D. Prednisolone 60 mg daily for 7–14 days

Q1

References:

References 1: Foden N, Mehta N, Joseph T. Sudden onset hearing loss: Causes, investigations and management. Aust Fam Physician 2013;42(9):641–44. Available at www.racgp.org.au/afp/2013/september/sudden-onset-hearing-loss [Accessed February 2023].

Reference 2: Listig LR. Sudden hearing loss. MSD Manual Professional Version. Kenilworth, NJ: MSD, 2020. Available at www.msdmanuals.com/en-au/professional/ear,-nose,-and-throat-disorders/hearing-loss/sudden-hearing-loss?query=sensorineural%20hearing%20loss [Accessed February 2023].

Reference 3: Pedler K, Chang P. Ear examination: A practical guide. Aust Fam Physician 2005;34(10):857–62. Available at www.racgp.org.au/afpbackissues/2005/200510/200510chang.pdf [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 60% of candidates.

This case requires candidates to interpret the patient's history, examination and audiogram to make a diagnosis of sudden, unilateral sensorineural hearing loss. Patients may present with vague symptoms such as the feeling of 'cotton wool' in the ear, rather than reporting hearing loss specifically. It is important for candidates to recognise this condition, as early use of oral corticosteroids has been associated with more favourable outcomes in terms of return to normal hearing. Most cases of sudden sensorineural hearing loss are idiopathic.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q2

Brian Handley, aged 48 years, was diagnosed two days ago with left-sided renal colic, which settled within one hour after a dose of naproxen sustained-release 750 mg. He has returned today for test results. Since you last saw him, Brian has had intermittent mild left loin pain and reduced appetite but is drinking normally. His pain has been relieved with naproxen 250 mg twice daily. Brian has hypercholesterolaemia, which is well controlled on simvastatin 20 mg daily. His examination is unremarkable.

Relevant test results taken two days ago are as follows:

Urine dipstick: ++ blood. Nil else.
Mid-stream urine: No growth after 48 hours.

Test	**Results**	**Normal range**
Urea	**12.0 mmol/L***	3–10
Creatinine	**118 µmol/L***	45–90
Estimated glomerular filtration rate	**68 mL/min/1.73 m^2***	>90

CT scan kidneys, ureters and bladder: A 4 mm diameter calculus is seen in the upper third of the left ureter. There is mild dilatation of the ureter proximal to the stone, and of the left renal pelvis.

What is the **MOST** appropriate next step?

A. Add tamsulosin 400 mcg daily
B. Change from naproxen to oxycodone 5 mg four-hourly when required
C. Measure serum calcium, phosphate and parathyroid hormone
D. Refer to hospital urgently for intravenous fluids and renal decompression
E. Refer to urologist for laser lithotripsy as soon as possible

Answer:
A. Add tamsulosin 400 mcg daily

Q2

References:

Reference 1: Sewell J, Katz DJ, Shoshany O, Love C. Urolithiasis – Ten things every general practitioner should know. Aust Fam Physician 2017;46(9):648–52. Available at www.racgp.org.au/afp/2017/september/urolithiasis [Accessed February 2023].

Reference 2: Macneil F, Bariol S. Urinary stone disease: Assessment and management. Aust Fam Physician;2011;40(10):772–75. Available at www.racgp.org.au/download/documents/AFP/2011/October/201110macneil.pdf [Accessed February 2023].

Reference 3: Thia I, Saluja M. An update on management of renal colic. Aust J Gen Pract 2021;50(7):445–49. Available at www1.racgp.org.au/ajgp/2021/july/an-update-on-management-of-renal-colic [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 45% of candidates.

The majority of stones <7 mm will pass spontaneously and can be treated expectantly unless there is evidence of fever, urinary tract infection or renal failure (small decreases in estimated glomerular filtration rate are common due to dehydration). Nonsteroidal anti-inflammatory drugs are recommended for analgesia and can be given orally unless the patient is vomiting. Most studies have shown a benefit with adding tamsulosin (an alpha antagonist) to assist with passage of the stone and relief of renal colic.

Tamsulosin has been shown to be superior to calcium channel blockers and phosphodiesterase type 5 inhibitors in several small studies. Indeed, alpha blockers as a class have been evaluated in a meta- analysis and were found to increase rate of stone expulsion (relative risk 1.54, 95% confidence interval: 1.29, 1.85; P <0.01), reduce time to expulsion (P <0.01), reduce analgesia use and relieve renal colic (P <0.01). Tamsulosin, the most widely studied in the class, proved to be more efficacious for larger stones (>5 mm) and stones within the distal segment of the ureter that were amenable to conservative management.

Serum calcium, phosphate and parathyroid hormone would not be recommended for a healthy adult with a first episode of renal colic.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q3

Grace Newell, aged 33 years, has had two days of worsening nausea and increasing agitation. She has also noticed a tremor in her hands. She initially thought she was developing a migraine. She took sumatriptan 10 mg intranasally and metoclopramide 10 mg. Unfortunately, her symptoms persisted and she had a second dose of sumatriptan 10 mg intranasally two hours later.

She takes paroxetine 40 mg daily for moderate anxiety. The dose was increased from 20 mg two weeks ago due to suboptimal control of symptoms.

On examination, she has a fine tremor at rest. Her temperature is 37.8°C, heart rate 109/min, blood pressure 148/82 mmHg, respiratory rate 20/min and oxygen saturations 99% on room air. Her neurological examination reveals hyperreflexia in her patellar and Achilles tendons with clonus. Further examination is unremarkable.

What is the **MOST** appropriate provisional diagnosis?

A. Hyperthyroidism
B. Intracranial space occupying lesion
C. Malignant hyperthermia
D. Meningitis
E. Serotonin syndrome

Answer:
E. Serotonin syndrome

Q3

References:

Reference 1: Mayo Clinic. Serotonin syndrome. Scottsdale, AZ: Mayo Clinic, 2022. Available at www.mayoclinic.org/diseases-conditions/serotonin-syndrome/symptoms-causes/syc-20354758 [Accessed February 2023].

Reference 2: Therapeutic Guidelines (August 2020 edition) Serotinergic toxidrome. Retrieved from: https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Toxicology%20and%20Toxinology&topicfile=toxidrome-serotonergic&guidelinename=Toxicology%20and%20Toxinology&sectionId=toc_d1e47#toc_d1e47 [Accessed March 2023].

Reference 3: Gordon M, Melvin G. (2013). Selective serotonin re-uptake inhibitors: A review of the side effects in adolescents. Aust Fam Physician 2013;42(9):620–23. Available at www.racgp.org.au/afp/2013/september/ssris-and-adolescents [Accessed February 2023].

Feedback:

This question was used within the 2020.2 Applied Knowledge Test. It was answered correctly by 90% of candidates.

This is a case of serotonin syndrome in the context of a combination of a high dose of selective serotonin reuptake inhibitor (paroxetine) with triptan and metoclopramide. Serotonin syndrome is characterised by a triad of:

1. autonomic hyperactivity – hypertension, tachycardia, hyperthermia
2. neuromuscular abnormality – tremor, clonus, hyperreflexia
3. mental status change – agitation, anxiety.

Other distractors include hyperthyroidism (unlikely to have sudden onset and typically presents with weight loss despite increased appetite, heat intolerance), intracranial space-occupying lesion (usual symptoms include morning headache with nausea and/or vomiting), malignant hyperthermia (presents with severe rigidity and hyporeflexia) and meningitis (common symptoms include fever, headache, photophobia and neck stiffness).

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q4

Winifred Smith, aged 79 years, is accompanied by her son, Michael, who is concerned that Winifred has seemed increasingly confused and lethargic for the past three weeks. Winifred explains she has not been eating as she has been feeling nauseated. Winifred has a slim build but has not lost any weight.
Following the death of her husband several months ago, Winifred was diagnosed with major depression.

She was commenced on sertraline 50 mg daily five weeks ago. She takes no other regular medication. You suspect she is experiencing an adverse reaction to her medication.

Given the provisional diagnosis, what is the **MOST** likely expected investigation finding?

A. Elevated creatinine
B. Hypercalcaemia
C. Hyperglycaemia
D. Hyperkalaemia
E. Hyponatraemia
F. Hypothyroidism
G. Vitamin B12 deficiency
H. Vitamin D deficiency

Answer:
E. Hyponatraemia

Q4

References:

Reference 1: Therapeutic Guidelines. Psychotropic: Depressive disorders – Major depression. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=major-depression&guidelineName=Psychotropic&topicNavigation=navigateTopic [Accessed February 2023].

Reference 2: The Royal Australian College of General Practitioners. Part A – Mental health. In: RACGP aged care clinical guide (Silver Book). 5th edn. East Melbourne, Vic: RACGP, 2020. Available at www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/silver-book/part-a/mental-health [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 96% of candidates.

The question requires candidates to be aware of the uncommon, but potentially serious, side effect of sertraline – hyponatraemia. Risk factors for hyponatraemia with antidepressant use include older age, female gender, low body weight, concurrent use of certain drugs (eg diuretics, nonsteroidal anti-inflammatory drugs, carbamazepine), impaired renal function, comorbidity (eg hypothyroidism, diabetes, chronic obstructive pulmonary disease) and hot weather. This patient has three risk factors for development of hyponatraemia: older age, female gender and low body weight. Symptoms of mild hyponatraemia may initially be vague; however, as the sodium levels become depleted, it can lead to convulsions, coma and death.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q5

Pattie Dawson, aged 42 years, has had a swelling around her left knee for the past four weeks. The swelling was painful initially, but the pain has now resolved. She works as a mural artist and has recently been kneeling a lot because she is painting a mural on the floor of a local art gallery. She has tried taking ibuprofen 400 mg three times daily, wearing a protective knee pad and icing the knee, but it has not improved. On examination, her temperature is 36.7°C and she has a full range of movement through the knee. There is a non-tender, fluctuant, clearly demarcated swelling over the knee (see image).

What is the **MOST** appropriate next step?

A. Cefalexin 500 mg four times daily
B. Change ibuprofen to diclofenac 50 mg twice daily
C. Compression bandage
D. Microscopy, culture and sensitivity of fluid aspirate
E. Ultrasound of the knee

Answer:
C. Compression bandage

Q5

References:

Reference 1: GPnotebook. Prepatellar bursitis: Management. Stratford-upon-Avon, UK: GPnotebook, 2019. Available at www.gpnotebook.com/simplepage.cfm?ID=x20151016160719865742&linkID=77972&cook=no [Accessed February 2023].

Reference 2: Khodaee M. Common superficial bursitis. Am Fam Physician 2017;95(4):224–31. Available at www.aafp.org/afp/2017/0215/p224.html [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Rheumatology: Limb conditions. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=limb-conditions&guidelineName=Rheumatology#toc_d1e692 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 59% of candidates.

This patient has an acute, non-septic prepatellar bursitis. Conservative management involves activity modification, application of ice, nonsteroidal anti-inflammatory drugs and use of a compression bandage. Antibiotics are not required in non-septic bursitis. There is no need for ultrasound as the diagnosis can be easily made on clinical features alone. There is no benefit in changing the type of nonsteroidal anti-inflammatory drug used. The bursa does not require aspiration for microscopy, culture and sensitivity as there is no evidence of infection. Because the patient has already tried all other conservative options, the next step is adding a compression bandage to assist with the management of her symptoms.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q6

Alastair Saxton, aged 34 years, has had progressively worsening shortness of breath, an intermittent dry cough and fatigue for the past three months. He has a 10 pack-year history of smoking but quit three weeks ago. For the past 10 years, he has worked for a glass manufacturing company. COVID-19 has been definitively excluded.

On examination, his heart rate is 70/min regular, respiratory rate 18/min and blood pressure 125/70 mmHg. Respiratory examination reveals bilateral fine inspiratory crackles on auscultation. A chest X-ray is performed (see image).

What is the **MOST** appropriate provisional diagnosis?

A. Allergic pulmonary aspergillosis
B. Asthma
C. Bronchiectasis
D. Cystic fibrosis
E. Human immunodeficiency virus
F. Immunoglobulin A deficiency
G. Lung cancer
H. Pneumoconiosis
I. Sarcoidosis
J. Tuberculosis

Answer:
H. Pneumoconiosis

Q6

References:

Reference 1: Bandaralage SPS, Sriram KB. A young man with progressive worsening dyspnoea. Aust J Gen Pract 2018;47(12):856–58. Available at www1.racgp.org.au/ajgp/2018/december/a-young-man-with-progressive-worsening-dyspnoea [Accessed February 2023].

Reference 2: Miles S. Explainer: What is silicosis? East Melbourne, Vic: newsGP, 2019. Available at www1.racgp.org.au/newsgp/clinical/explainer-what-is-silicosis [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Respiratory: Interstitial lung disease. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=interstitial-lung-disease&guidelineName=Respiratory#toc_d1e304 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 70% of candidates.

Silicosis is an occupational pneumoconiosis caused by breathing in silica dust. In recent years there has been a significant resurgence of the condition, linked to occupations working with manufactured stone bench tops. Exposure to silica dust can cause a spectrum of disorders, both acute and chronic (which progresses despite removing exposure to the dust) and simple versus complicated (relating to the degree of fibrosis within the lungs). Symptoms are initially non-specific and include dyspnoea, cough and fatigue, with progression of symptoms over time. Silicosis can cause significant morbidity and mortality.

The X-ray provided shows simple silicosis with widespread ground glass opacity. There are no features to suggest allergic aspergillosis, pulmonary tuberculosis or lung cancer. Cystic fibrosis usually presents earlier in life, with a chronic, productive cough and failure to thrive. These X-ray changes would not be expected in asthma. He has no specific risk factors for human immunodeficiency virus infection.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q7

James Forde, aged 56 years, wants to improve his cholesterol profile to reduce his risk of a heart attack. His father and paternal uncle both had heart attacks in their mid-70s. He exercises five days per week and follows a largely plant-based, Mediterranean-style diet. His fasting lipid results are shown below.

Lipid studies	**Result**	**Desirable range (fasting)**
Total cholesterol	**6.7 mmol/L***	<5.6
High-density lipoprotein	1.0 mmol/L	>1.0
Low-density lipoprotein	**4.9 mmol/L***	<2.5
Triglyceride	0.8 mmol/L	<1.5
Cholesterol/High density lipoprotein ratio	**6.7***	<4.5

What is the **MOST** appropriate next step in dietary management?

A. Betacarotene 1.5 mg daily
B. Change to a ketogenic diet
C. Decrease soluble fibre intake
D. Increase dietary intake of trans-unsaturated fats
E. Introduce plant sterol-enriched milk, margarine or cheese products

Answer:
E. Introduce plant sterol-enriched milk, margarine or cheese products

Q7

References:

Reference 1: Therapeutic Guidelines. Cardiovascular: Lipid modification. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=lipid-modification&guidelineName=Cardiovascular&topicNavigation=navigateTopic#toc_d1e142 [Accessed February 2023].

Reference 2: The Heart Foundation. Fish and omega-3: Questions and answers. Canberra: The Heart Foundation, 2015. Available at www.heartfoundation.org.au/getmedia/4adbe011-db9a-4777-8a99-db6365e27cb1/Consumer_QA_Fish_ Omega3_Cardiovascular_Health.pdf [Accessed February 2023].

Reference 3: Heart Foundation. Position statement: Phytosterol/stanol enriched and heart-healthy foods. Canberra: The Heart Foundation, 2017. Available at www.heartfoundation.org.au/getmedia/01189b21-3397-46d8-a498-28d7a28c1a5e/190729_Nutrition_Position_Statement_-_Phyto_Sterol.pdf [Accessed February 2023].

Feedback:

Dietary modification for patients with elevated low-density lipoprotein or triglycerides should always be recommended even after drug therapy has started. Evidence-based dietary changes include:

- reducing saturated and trans fat
- using monounsaturated and polyunsaturated fats to replace saturated fats
- improving soluble fibre intake
- using plant sterol-enriched milk, margarine or cheese products.

Regular dietary consumption of fish (twice per week) is also recommended by the Heart Foundation. However, regular Omega 3 supplementation is only recommended as an adjunct in the management of heart failure (post–acute myocardial infarction) or as an adjunct in managing hypertriglyceridemia.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q8

Ted Wall, aged 54 years, presents for his regular diabetes management review. Ted was diagnosed with type 2 diabetes one year ago and has been treated with lifestyle modification, metformin extended-release 2000 mg daily, and gliclazide modified-release 60 mg daily. He has been feeling occasionally lightheaded with some shaking and weakness followed by a feeling of being about to faint while at work. It is often worse when his work is very busy and he does not get time for breaks. His HbA1c was **7.8%*** (normal range <6.5%) two weeks ago and the remainder of his investigations were within acceptable ranges.

What is the **MOST** appropriate next step?

A. Arrange 24-hour Holter monitor
B. Cease gliclazide
C. Commence insulin glargine 0.2 units/kg (up to 30 units) subcutaneously daily
D. No change to medications required
E. Replace gliclazide with sitagliptin 100 mg daily

Answer:
E . Replace gliclazide with sitagliptin 100 mg daily

Q8

References:

Reference 1: Therapeutic Guidelines. Diabetes: Type 2 diabetes in adults. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Diabetes&topicfile=other-types-of-di abetes&guidelinename=auto&sectionId=c_DBG_Overview-of-type-2-diabetes-in-adults_topic_1#c_DBG_Overview-of-type-2-diabetes-in-adults_topic_1 [Accessed February 2023].

Reference 2: NPS MedicineWise. Sitagliptin with metformin (Janumet) fixed-dose combination tablets PBS listed for type 2 diabetes mellitus. Surry Hills, NSW: NPS MedicineWise, 2009. Available at www.nps.org.au/radar/articles/sitagliptin-with-metformin-janumet-fixed-dose-combination-tablets-pbs-listed-for-type-2-diabetes-mellitus [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 88% of candidates.

The question requires candidates to recognise that this patient is experiencing recurrent hypoglycaemia, which is a common side effect of gliclazide (a sulphonylurea). As the patient is not tolerating gliclazide, it can be replaced with sitagliptin. Current guidelines for the management of type 2 diabetes recommend that dipeptidyl peptidase-4 (DPP-4) inhibitors, such as sitagliptin, are one of the suitable classes of medication that can be used in conjunction with metformin if sulphonylureas are inappropriate or not tolerated. Simply ceasing gliclazide is not ideal, as this patient's HbA1c is above target. Optimising type 2 diabetes management with oral medications prior to starting insulin is usual practice. There is no indication for a Holter monitor at this time.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q9

Sally Hines, aged 38 years, has had intermittent urinary incontinence for the past six months. She often urgently needs to go to the bathroom and sometimes wets her clothing if she cannot reach the bathroom in time. She does not lose urine with any particular activity.

She has seen a physiotherapist, avoids caffeine and has reduced her oral fluid intake when out of the house, but her symptoms continue. She tried oxybutynin 5 mg daily, which initially improved her symptoms, but she had a dry mouth and ceased the medication.

Her clinical examination is unremarkable. Urine microscopy, culture and sensitivity, and a recent ultrasound of kidneys, ureters and bladder, are all normal.

What is the **MOST** appropriate next step in pharmacological management?

A. Oxybutynin 3.9 mg/24-hour transdermal patch twice weekly
B. Prazosin 1 mg daily
C. Propranolol 10 mg twice daily
D. Vaginal oestrogen 0.5 g cream intravaginally nightly for two weeks and then twice weekly
E. Venlafaxine 37.5 mg daily

Answer:
A. Oxybutynin 3.9 mg/24-hour transdermal patch twice weekly

Q9

References:

Reference 1: Hu JS, Pierre EF. Urinary incontinence in women: Evaluation and management. Am Fam Physician 2019;100(6):339–48. Available at www.aafp.org/afp/2019/0915/p339.html [Accessed February 2023].

Reference 2: Hutchinson A, Nesbitt A, Joshi A, Clubb A, Perera M. Overactive bladder syndrome: Management and treatment options. Aust J Gen Pract 2020;49(9):593–98. Available at www1.racgp.org.au/ajgp/2020/september/overactive-bladder-syndrome [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 72% of candidates.

The question requires candidates to have some familiarity with the diagnosis of overactive bladder syndrome and its appropriate treatments. Oxybutynin is an appropriate first-line treatment for this condition. As this patient has trialled the oral form and had a dry mouth, the next option is to trial a transdermal patch, which is less likely to cause dry mouth. Vaginal oestrogen might be useful in postmenopausal women, but no information is provided to suggest this patient is menopausal and her age also makes this unlikely. Prazosin can be used in males to assist with relaxation of the prostate. Propranolol and desvenlafaxine might assist with anxiety but are not indicated in this case.

Questions remain correct at the time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q10

Karen Blake, aged 28 years, is seven weeks pregnant. She previously requested specific testing for genetic risks for her unborn child. She has no family history of any genetic disorders. She has returned for her results today, which suggest that she is a carrier for spinal muscular atrophy.

What is the **MOST** appropriate next step regarding her genetic results?

A. Advise that if the child is male he will likely have spinal muscular atrophy
B. Carrier testing of reproductive partner
C. Chorionic villus sampling
D. Discuss termination of pregnancy options with Karen
E. Extended carrier screening
F. No further testing is required
G. Non-invasive prenatal testing
H. Nuchal translucency scan

Answer:
B. Carrier testing of reproductive partner

Q10

References:

Reference 1: Delatycki MB, Laing NG, Moore SJ, et al. Preconception and antenatal carrier screening for genetic conditions: The critical role of general practitioners. Aust J Gen Pract 2019;48(3):106–10. Available at www1.racgp.org.au/ajgp/2019/march/preconception-and-antenatal-carrier-screening-for [Accessed February 2023].

Reference 2: The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Genetic carrier screening. Melbourne: RANZCOG, 2019. Available at: https://ranzcog.edu.au/wp-content/uploads/2022/05/Genetic-carrier-screeningC-Obs-63New-March-2019_1.pdf [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 71% of candidates.

Preconception genetic carrier screening is increasingly accessible within Australia and general practitioners are expected to have some familiarity with the processes involved. Usually, the female partner is tested first and, if she is found to be a carrier of an autosomal recessive condition such as spinal muscular atrophy, her male partner needs to be tested too. If he is also a carrier for the same condition, they have an increased risk of having a child with that genetic condition. After partner testing and counselling, the next appropriate test to offer would be chorionic villus sampling or amniocentesis.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q11

Danika Drury, aged 26 years, has been passing some blood with her bowel motions. She first saw blood in the toilet bowl a month ago, which was associated with a severe pain in her anal area during a bowel movement. The pain has been recurring during every bowel movement and can last up to one hour. She has made dietary changes, but her symptoms have continued. The skin around her anus feels itchy and irritated. She has noticed bright red blood on the toilet paper and sometimes she sees blood dripping into the toilet bowl. Clinical examination supports your provisional diagnosis.

What is the **MOST** appropriate initial management for the provisional diagnosis?

A. Cinchocaine-prednisolone 1 mg/1.3 mg suppository rectally
B. Glycerol 2.8 g suppository rectally
C. Glyceryl trinitrate 0.2% ointment topically
D. Hydrocortisone 1% cream topically
E. Loperamide 4 mg as required
F. Low-fibre diet
G. Mesalazine 1 g suppository rectally daily
H. Refer for botulinum toxin injection
I. Refer for rubber band ligation
J. Sulfasalazine 500 mg twice daily

Answer:
C. Glyceryl trinitrate 0.2% ointment topically

Q11

References:

Reference 1: Stewart DB. Patient education: Anal fissure (Beyond the basics). Amsterdam: UpToDate/Wolters Kluwer, 2021. Available at www.uptodate.com/contents/anal-fissure-beyond-the-basics?source=search_result&search=Anal+Fissure+%28Pediatric%29&selectedTitle=2%7E6 [Accessed February 2023].

Reference 2: Poritz LS. Anal fissure. US: Medscape, 2020. Available at http://emedicine.medscape.com/article/196297-overview [Accessed February 2023].

Reference 3: healthdirect. Blood in stool. Australia: healthdirect, 2021. Available at www.healthdirect.gov.au/blood-in-stool [Accessed February 2023].

Reference 4: Therapeutic Guidelines. Gastrointestinal: Perianal disorders – Anal fissure. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Gastrointestinal&topicfile=c_GIG_G astro-oesophageal-reflux-in-adultstopic_1&guidelinename=Gastrointestinal&sectionId=c_GIG_Anal-fissuretopic_3#c_GIG_Anal-fissuretopic_3 [Accessed February 2023].

Feedback:

This question was used in the 2019.1 Applied Knowledge Test. It was answered correctly by 65% of candidates.

Typically, the symptoms of an anal fissure are relatively specific and the diagnosis can be made on the basis of the history alone. In this case candidates are required to make the correct diagnosis and to know the appropriate management of an anal fissure. There is no need for any investigations. The correct answer is glyceryl trinitrate ointment. The use of glyceryl trinitrate ointment has been shown to improve the healing of anal fissures by causing relaxation of the anal sphincter and improving blood supply.

Cinchocaine/prednisolone suppositories and hydrocortisone cream are more appropriate for haemorrhoids than for anal fissures. Loperamide and low-fibre diet would constipate the patient and potentially aggravate the problem.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q12

Stephanie Thomas, aged 26 years, saw one of your colleagues a few weeks ago when she was unwell with a cough, rhinorrhoea and fatigue. On examination at that time, your colleague noted her to be mildly jaundiced. Several days later, Stephanie had some blood tests done (refer to results below). COVID-19 has been definitively excluded.

On review today, Stephanie feels well apart from some mild residual fatigue. Examination is unremarkable. Stephanie thinks she has had similar episodes of having yellow skin like this in the past.

Test	**Result**	**Normal range**
Full blood examination	All values within normal range	
Bilirubin	**33 µmol/L***	0–25
Alkaline phosphatase	52 U/L	30–120
Alanine transaminase	24 U/L	0–41
Aspartate aminotransferase	32 U/L	0–41
Gamma-glutamyl transferase	41 U/L	0–51

What is the **MOST** appropriate provisional diagnosis?

A. Acute hepatitis A infection
B. Alpha-1 antitrypsin deficiency
C. Anorexia nervosa
D. Chronic hepatitis C infection
E. Epstein–Barr virus infection
F. Gilbert syndrome
G. Haemochromatosis
H. Non-alcoholic fatty liver disease
I. Primary biliary cirrhosis
J. Wilson disease

Answer:
F. Gilbert syndrome

Q12

References:

Reference 1: Coates P. Liver function tests. Aust Fam Physician 2011;40(3):113–15. Available at www.racgp.org.au/download/documents/AFP/2011/March/201103coates.pdf [Accessed February 2023].

Reference 2: Tholey D. Jaundice. MSD Manual Professional Version. Kenilworth, NJ: MSD, Available at www.msdmanuals.com/en-au/professional/hepatic-and-biliary-disorders/approach-to-the-patient-with-liver-disease/jaundice?query=gilbert%20syndrome [Accessed February 2023].

Reference 3: Nazer H, Roy PK. Unconjugated hyperbilirubinaemia workup – Gilbert syndrome. US: Medscape, 2020. Available at http://emedicine.medscape.com/article/178841-workup#c9 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 84% of candidates.

General practitioners order large quantities of investigations, and it is important that they understand what the results indicate and relate those results back to the clinical findings in their patient. An isolated elevated bilirubin is most likely to be caused by Gilbert syndrome. Gilbert syndrome is a genetic disorder of bilirubin metabolism that occurs in 3–7% of the Australian population. It can cause fatigue and mild jaundice but is a benign condition.

Distractors include hepatitis A (liver function tests would be elevated), hepatitis C (no risk factors for exposure have been given in the scenario and raised liver function tests would be expected in the context of hyperbilirubinaemia) and non-alcoholic fatty liver disease (usually results in elevated liver function tests).

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q13

Brenda Bonnard, aged 62 years, is concerned that the inner part of her left eye has become red and inflamed (see image). She has just returned from a holiday on a cruise and explains that her left eye became increasingly irritated during her trip.

What is the **MOST** appropriate next step?

A. Chloramphenicol 1% ointment 1.5 cm along everted bottom eyelid every three hours
B. Hypromellose 0.3% drops, two drops four times daily
C. Loratadine 10 mg daily
D. Olopatadine 0.1% drops, two drops twice daily
E. Prednisolone 50 mg daily for five days

Answer:
B. Hypromellose 0.3% drops, two drops four times daily

Q13

References:

Reference 1: DynaMedPlus. Pterygium. Record No. T920562. Ipswich, MA: EBSCO Information Services, 2021. Available at https://www.dynamed.com/condition/pterygium [Accessed April 2023].

Reference 2: Fisher JP. Pterygium. US: Medscape, 2019. Available at https://emedicine.medscape.com/article/1192527-overview [Accessed February 2023].

Reference 3: American Academy of Ophthalmology (2022) Pterygium. Available at https://eyewiki.aao.org/Pterygium [Accessed April 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 50% of candidates.

This is a case of pterygium. The diagnosis of pterygium can be made on the history of extensive sun exposure and the characteristic appearance of a triangular shaped growth of fibrovascular conjunctival tissue from the bulbar conjunctiva toward the cornea on the nasal side. Appropriate conservative management is to use artificial tears/topical lubricating eye drops. Topical steroids would only be considered in severe cases and with caution, usually in consultation with an ophthalmologist. There is no role for oral steroids in the management of this condition. Chloramphenicol is not appropriate as this is not an infective condition. Antihistamines (either oral loratadine or topical olopatadine) are not indicated as there is no allergic basis to this condition.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q14

Anna Meales, aged 38 years, has had a burning rash on her chin over the past month (see image). Initially, she wondered whether it was due to a new makeup she used, but she has stopped using all makeup now and the rash is persisting. She is not keen on taking any tablets for this but is willing to try a cream.

What is the **MOST** appropriate next step?

A. Benzoyl peroxide 5% cream topically twice daily
B. Brimonidine 0.33% gel topically once daily
C. Hydrocortisone 1% cream topically twice daily
D. Hydrocortisone-clotrimazole 1%/1% cream topically twice daily
E. Metronidazole 0.75% cream topically twice daily
F. Mometasone 0.1% cream topically once daily
G. Mupirocin 2% cream topically twice daily
H. Terbinafine 1% cream topically twice daily

Answer:
E. Metronidazole 0.75% cream topically twice daily

Q14

References:

Reference 1: Therapeutic Guidelines. Dermatology: Dermatitis. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Dermatology&topicfile=c_DMG_Considerations-in-the-use-of-topical-corticosteroids_topic_1&guidelinename=Dermatology&sectionId=c_DMG_Periorificial-dermatitis_topic_2#c_DMG_Periorificial-dermatitis_topic_2 [Accessed February 2023].

Reference 2: Oakley A. Periorifical dermatitis. NZ: DermNet NZ, 2016. Available at https://dermnetnz.org/topics/periorificial-dermatitis [Accessed February 2023].

Reference 3: Lim DS. A–Z of skin: Perioral dermatitis. Australasian College of Dermatologists, 2015. Available at www.dermcoll.edu.au/atoz/perioral-dermatitis [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 77% of candidates.

This is a case of perioral dermatitis and therefore the most appropriate treatment is topical metronidazole. There is sparing immediately adjacent to the vermilion border of the lip, which is classic of perioral dermatitis and makes eczema much less likely. There are no comedomes to suggest acne. Rosacea is primarily distributed on the central face and not localised to the chin. The intense itching associated with allergic contact dermatitis is absent in this case and surface scale is also usually prominent. This is unlikely to be impetigo as the erosions, vesicles and yellow crust that are commonly present with impetigo are not seen here. Tinea is unusual on the face as it is a typically dry area, and this rash is also lacking the characteristic appearance and scale of tinea.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q15

Samara Mastakov, aged 28 years, has been bothered by intermittent vaginal spotting between her menstrual periods for the past four months. She does not have any children and has not been in a sexual relationship for the past 12 months. She had a normal cervical screening test and negative sexually transmitted infection screen seven months ago. Urine human chorionic gonadotropin is negative. You arrange a transvaginal pelvic ultrasound, which is reported as normal.

What is the **MOST** appropriate next step?

A. Advise Samara to keep a 'period diary' and review in three months
B. Arrange insertion of levonorgestrel 52 mg intrauterine device
C. Commence levonorgestrel-ethinyloestradiol 100 mcg/20 mcg daily
D. Commence medroxyprogesterone 2.5 mg twice daily for 5–10 days
E. Iron studies
F. Refer for colposcopy
G. Repeat cervical screening test with co-test
H. Thyroid-stimulating hormone

Answer:
G. Repeat cervical screening test with co-test

Q15

References:

Reference 1: Australian Government Department of Health. Providing cervical screening. Canberra: DoH, 2020. Available at www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/healthcare-providers#8 [Accessed February 2023].

Reference 2: Cancer Council Australia (2019) Cervical cancer screening: 18. Signs and symptoms of cervical cancer – Identification and investigation of abnormal bleeding. Melbourne: Cancer Council Australia, 2019. Available at https://www.cancer.org.au/clinical-guidelines/cervical-cancer-screening/signs-and-symptoms/investigation-of-abnormal-vaginal-bleeding [Accessed February 2023].

Reference 3: Cancer Council Australia Cervical Cancer Screening Working Party. Investigation of women with abnormal vaginal bleeding. Melbourne: Cancer Council Australia, 2016. Available at https://wiki.cancer.org.au/australiawiki/images/f/fb/Investigation_of_women_with_abnormal_vag_bleeding.pdf [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 47% of candidates.

This question relates to the appropriate initial management of unexplained intermenstrual bleeding. It requires candidates to understand the possible causes of intermenstrual bleeding and the current cervical screening guidelines in Australia. Abnormal vaginal bleeding can be one of the first symptoms of cervical cancer. The most appropriate next step in this case is a co-test (human papilloma virus PCR plus liquid-based cytology).

Distractors including referring to a gynaecologist for colposcopy may play a role in the management of this patient; however, the question is asking about the next step in management. An oral contraceptive may be a useful treatment for the management of irregular bleeding, but it would be inappropriate for this to be commenced until the irregular bleeding has been fully investigated, with sinister causes excluded.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q16

Sarah Jeffries, aged 36 years, has been advised to see you by her nutritionist to discuss management of her frequent migraines. She is trying to lose weight and her headaches are interfering with her ability to exercise. Sarah has had episodes of nausea, light sensitivity and a severe, throbbing headache behind her eyes at least once per week for the past year. She is taking regular magnesium supplements and attends a massage therapist twice per week.

Sarah takes paracetamol 1 g and ibuprofen 400 mg at the onset of her headache. She has a levonorgestrel 52 mg intrauterine device and uses budesonide-formoterol 200 mcg/6 mcg inhaled as required for mild asthma. On examination, her temperature is 36.2°C, heart rate 60/min regular, blood pressure 112/78 mmHg and body mass index 32 kg/m^2. Neurological examination is unremarkable.

What is the **MOST** appropriate pharmacological management?

A. Gabapentin 300 mg daily
B. Oestradiol 1 mg daily
C. Pizotifen 0.5 mg daily
D. Sodium valproate 200 mg daily
E. Topiramate 25 mg daily

Answer:
E. Topiramate 25 mg daily

Q16

References:

Reference 1: Therapeutic Guidelines. Neurology: Headache and facial pain – Migraine. West Melbourne, Vic: Therapeutic Guidelines, 2019. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=migraine&guidelineName=Neurology&topicNavigation=navigateTopic#toc_d1e47 [Accessed February 2023].

Reference 2: Beran RG. Management of chronic headache. Aust J Gen Pract 2014;43(3):106–10. Available at www.racgp.org.au/afp/2014/march/chronic-headache [Accessed February 2023].

Reference 3: Berken GH, Weinstein DO, Stern WC. Weight gain: A side-effect of tricyclic antidepressants. J Affect Disord 1984;7(2):133–38. Available at https://pubmed.ncbi.nlm.nih.gov/6238068 [Accessed February 2023].

Reference 4: Jenkins B. Migraine management. Aust Prescr 2020;43:148–51. Available at www.nps.org.au/australian-prescriber/articles/migraine-management [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 36% of candidates.

Chronic migraine can have a debilitating impact on the individual patient. If a patient requires treatment for acute migraine on more than two days per month, migraine prophylaxis may be considered. There are many different medications that may be trialled as prophylaxis and an individual patient's comorbidities must be considered when selecting an appropriate medication. This patient is obese and is actively trying to lose weight, so medications that could potentially cause weight gain should be avoided. Sodium valproate must be avoided in women of childbearing potential (unless no alternative, and patient has appropriate contraceptive cover) and has potential for weight gain. Similarly, pizotifen has potential for weight gain, which is undesirable in this patient. At the time of writing, there is less evidence for gabapentin as a prophylactic agent and its use is considered second line when other options have been ineffective.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q17

Marco Romero, aged 4 years, presents with his mother Gina. Gina is concerned about Marco's behaviour. He has difficulty concentrating, 'never sits still', and is behind most of his peers with skills such as counting and drawing. Gina also mentions that over the past six months Marco has not been eating well and sometimes seems to choke on his food. Marco snores and is a very restless sleeper.

On examination, Marco’s temperature is 36.9°C. The rest of his physical examination is normal apart from enlarged tonsils, which occupy about 70% of the pharyngeal diameter. Marco's height is on the 50th percentile; his weight is on the 20th percentile.

What is the **MOST** appropriate next step?

A. Cetirizine 2.5 mg daily
B. Dexamphetamine 2.5 mg twice daily
C. Full blood examination
D. Melatonin 1 mg at night
E. Mometasone 50 mcg intranasally daily
F. Phenoxymethylpenicillin 10 mg/kg (maximum 500 mg) twice daily for 10 days
G. Promethazine 12.5 mg at night
H. Refer to ear, nose and throat surgeon for adenotonsillectomy
I. Refer for titration of continuous positive airway pressure
J. Refer to child psychologist for behavioural therapy

Answer:
H. Refer to ear, nose and throat surgeon for adenotonsillectomy

Q17

References:

Reference 1: Nixon GM, Davey MJ. Sleep apnoea in the child. Aust Fam Physician 2015;44(6):352–55. Available at www.racgp.org.au/afp/2015/june/sleep-apnoea-in-the-child [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Respiratory: Sleep-disordered breathing – Sleep-disordered breathing in children. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=sleep-disordered-breathing-children&guidelineName=Respiratory#toc_d1e218 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 97% of candidates.

The hallmark symptom of obstructive sleep apnoea in children is snoring most nights. The sleep disturbance may be associated with hyperactivity, poor attention and behavioural issues. The most common cause of obstructive sleep apnoea in children is large tonsils and adenoids. For children with moderate to severe obstructive sleep apnoea (indicated in this child by choking on food, poor weight gain and behavioural problems), adenotonsillectomy is indicated and is curative in 70–90% of children. For mild obstructive sleep apnoea, nasal obstruction with small tonsils, or history consistent with allergic rhinitis, nasal steroids can be trialled.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q18

Jason Crompton, aged 42 years, has moderately severe plaque psoriasis. His dermatologist has advised him to see you to discuss any needed vaccinations before he starts using adalimumab (Humira). He was fully immunised as a child and had a dose of acellular diphtheria, tetanus and pertussis vaccine seven years ago when his son was born. He has had his annual influenza vaccine and is up to date with COVID-19 vaccinations.

What is the **MOST** appropriate vaccine to recommend today?

A. Acellular diphtheria, tetanus and pertussis vaccine
B. Bacille Calmette–Guérin vaccine
C. Hepatitis A vaccine
D. Live-attenuated varicella-zoster virus vaccine
E. Pneumococcal vaccine

Answer:
E. Pneumococcal vaccine

Q18

References:

Reference 1: Australian Immunisation Handbook. Vaccination for people who are immunocompromised. Canberra: Department of Health, 2020. Available at https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-people-who-are-immunocompromised [Accessed February 2023].

Reference 2: Purvis D, Reynolds G, Chung J, Rademaker M, Jarrett P. Immunisation in immunosuppressed dermatology patients. NZ: DermNet NZ, 2021. Available at https://dermnetnz.org/topics/immunisation-in-immunosuppressed-dermatology-patients [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 52% of candidates.

This question requires candidates to have an understanding of the current immunisation schedule and appropriate vaccinations for immunosuppressed individuals. Pneumococcal vaccine is recommended for all patients on immunosuppressive therapy (one dose of 13 valent vaccine followed by further doses of 23 valent vaccine). Hepatitis A vaccine is recommended for patients with chronic liver disease, or those in risky environments/occupations, but not routinely for those on immunosuppressive therapy. It is often also recommended for travel to developing countries. Live-attenuated varicella-zoster vaccine is not indicated in patients under 50 years of age. Booster doses of diphtheria, tetanus and pertussis vaccine are recommended after 10 years. Although patients may need to be assessed for risk of possible latent tuberculosis before starting immunosuppressive therapy, the Bacille Calmette–Guérin vaccine is not recommended.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q19

Katie Pole, aged 24 years, is concerned about brown marks on her face (see image). The marks have become more prominent over time. She had difficulties with irregular periods when she was 15 years of age, but since she was placed on the combined oral contraceptive pill, her periods have been regular and light.

What is the **MOST** appropriate next step?

A. 2 mm punch biopsy of lesion
B. Advise Katie to get more daily sunlight
C. Discuss ceasing combined oral contraceptive pill
D. Doxycycline 100 mg daily
E. Econazole 1% cream topically daily for three nights
F. Mometasone furoate 0.1% cream topically daily
G. Refer to dermatologist for laser therapy
H. Refer to plastic surgeon for excision
I. Serum cortisol
J. Serum ferritin

Answer:
C. Discuss ceasing combined oral contraceptive pill

Q19

References:

Reference 1: Oakley A, Doolan BJ, Gupta M. Melasma. NZ: DermNet NZ, 2021. Available at www.dermnetnz.org/topics/melasma [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Dermatology: Pigment disorders – Melasma. West Melbourne, Vic: Therapeutic Guidelines, 2015. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Dermatology&topicfile=c_DMG_Melasma_topic_1&guidelinename=Dermatology&sectionId=toc_d1e144#toc_d1e144 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 77% of candidates.

This question requires candidates to recognise the common presentation of melasma. Melasma is a form of facial pigmentation that presents as bilateral, brown blotches. It is more common in women and in those with a family history. Sun exposure also increases the risk of developing melasma. Pregnancy and the use of the combined oral contraceptive pill can also lead to the development of melasma. Therefore, the most appropriate management here is ceasing the combined oral contraceptive pill as it is likely contributing to her melasma.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q20

Petal Wilson-Spencer, aged 11 years, is brought in by her mother, Nova, with concerns about her asthma. Petal's asthma has been well controlled on fluticasone propionate accuhaler 100 mcg inhaled twice daily and salbutamol metered-dose inhaler 100 mcg inhaled as required. Petal recently joined the school choir but has noticed her voice sounds rough at times during singing practice and she has had some difficulty reaching the high notes. She has an upcoming concert and is worried she will not be able to participate if her asthma is playing up.

What is the **MOST** appropriate next step?

A. Change to fluticasone propionate metered-dose inhaler 50 mcg two puffs twice daily via spacer device
B. Change to budesonide-eformoterol 50 mcg/3 mcg metered-dose inhaler one puff twice daily via spacer device
C. Change to montelukast 5 mg at night
D. Change to nedocromil 2 mg metered-dose inhaler two puffs four times daily via spacer device
E. Increase fluticasone to 250 mcg inhaled twice daily
F. Prednisolone 1 mg/kg (up to 50 mg) the night before the performance
G. Refer to speech therapist for voice exercises
H. Salbutamol 100 mcg metered-dose inhaler four puffs 15 minutes prior to the performance

Answer:
A. Change to fluticasone propionate metered-dose inhaler 50 mcg two puffs twice daily via spacer device

Q20

References:

Reference 1: NPS MedicineWise. Consumer medicine information: Flixotide CFC-Free Inhaler and Junior CFC-Free Inhaler. Surry Hills, NSW: NPS MedicineWise, 2018. Available at www.nps.org.au/medicine-finder/flixotide-junior-cfc-free-inhaler [Accessed February 2023].

Reference 2: Ye Q, He X-O, D'Urzo A. A review on the safety and efficacy of inhaled corticosteroids in the management of asthma. Pulm Ther 2017;3:1–18. Available at https://link.springer.com/article/10.1007/s41030-017-0043-5 [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Respiratory: Asthma diagnosis: Children 6 years and older, adolescents and adults – Overview of stepwise therapy for children 6 years and older. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Respiratory&topicfile=asthma-maintenance-management-children&guidelinename=Respiratory&sectionId=toc_d1e325#toc_d1e325 [Accessed February 2023].

Reference 4: Prescribing reliever and considering regular preventer treatment for children 6 years and over. South Melbourne, Vic: National Asthma Council, 2020. Available at www.asthmahandbook.org.au/management/children/6-years-and-over/reliever-and-preventer [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 25% of candidates.

Petal is experiencing a hoarse voice, which is a common side effect of inhaled corticosteroids. Her asthma is currently well controlled with an inhaled corticosteroid. The issue of hoarse voice may be resolved by delivering her inhaled corticosteroid via a spacer device, which reduces oropharyngeal deposition of the drug.

Approximately 20–30% of children with asthma will respond to montelukast treatment. Montelukast can be used instead of an inhaled corticosteroid when a child refuses to use a metered dose inhaler and spacer/mask, if the child has significant allergic rhinitis that requires treatment or if parents decline inhaled corticosteroids despite appropriate education about the risks and benefits. Montelukast has been associated with neuropsychiatric adverse effects, which usually occur in the first two weeks of treatment.

As Petal's asthma is well controlled using an inhaled corticosteroid, there is no need to step up to inhaled corticosteroids–long-acting beta2-agonist combination therapy. Increasing her inhaled corticosteroid dose is also unnecessary as her asthma is well controlled and will likely exacerbate the issue without the use of a spacer device.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q21

Brad Billing, aged 18 years, has been sleeping poorly since starting university two months ago. He has missed some lectures and has made only a few friends since moving away from home. He feels his heart races whenever he sits down to study and does not feel he has much of an appetite. His bowel motions are more loose than usual, but never wake him from sleep. He saw a general practitioner one week ago who arranged appropriate investigations which were normal and commenced Brad on escitalopram 10 mg daily. He has seen a psychologist twice for cognitive behavioural therapy. He is seeing you today because he is not feeling any better. He has not had any thoughts of self-harm.

What is the **MOST** appropriate next step in management?

A. Add diazepam 5 mg daily
B. Add temazepam 10 mg at night
C. Advise Brad to defer university for six months
D. Change cognitive behavioural therapy to interpersonal psychotherapy
E. Change escitalopram to fluoxetine 20 mg daily
F. Continue with current management and review him in 2–3 weeks
G. Increase escitalopram to 20 mg daily
H. Recommend a change of psychologist

Answer:
F. Continue with current management and review him in 2–3 weeks

Q21

References:

Reference 1: Andrews G, Bell C, Boyce P, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of panic disorder, social anxiety disorder and generalised anxiety disorder. Melbourne: Royal Australian and New Zealand College of Psychiatrists, 2018. Available at www.ranzcp.org/files/resources/college_statements/clinician/cpg/anxiety-cpg.aspx [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Psychotropic: Anxiety and associated disorders. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=overview-anxiety-disorders&guidelineName=Psychotropic&topicNavigation=navigateTopic#toc_d1e346 [Accessed February 2023].

Feedback:

This question was used in the 2019.2 Applied Knowledge Test. It was answered correctly by 77% of candidates.

This patient has not been taking the selective serotonin reuptake inhibitor for long enough to experience any benefit, so the most appropriate approach is to continue it and reassess in a few weeks (full effect can take six weeks). Some sleep hygiene education and counselling may help with his insomnia in the interim, but temazepam is best avoided due to the addictive properties of benzodiazepines.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q22

Robert Fairbairn, aged 89 years, has had difficulty walking for the past three months due to pain in his left hip. His hip aches constantly and it is worse at the end of the day. On examination, his temperature is 37.4°C. He has limitation of internal and external rotation of the left hip. An X-ray is performed (see image). Blood tests reveal a normal full blood count and urea, electrolytes and creatinine. Further results are as follows.

Test	**Result**	**Normal range**
Total bilirubin	9 µmol/L	2–20
Alkaline phosphatase	**243 U/L***	30–115
Gamma-glutamyl transferase	12 U/L	0–45
Alanine aminotransferase	14 U/L	0–45
Aspartate aminotransferase	17 U/L	0–41
Lactate dehydrogenase	121 U/L	80–250
Calcium	2.65 mmol/L	2.25–2.65
Corrected calcium	2.65 mmol/L	2.25–2.65
Phosphate	1.4 mmol/L	0.8–1.5
Total protein	61 g/L	60–82
Albumin	35 g/L	35–50
Globulin	26 g/L	20–40

Image: Case courtesy of Dr Derek Smith, Radiopaedia.org, rID: 40489

What is the **MOST** appropriate provisional diagnosis?

A. Ankylosing spondylitis
B. Avascular necrosis of the femoral head
C. Bone metastases
D. Osteoarthritis
E. Osteomyelitis
F. Osteoporosis
G. Paget's disease
H. Polymyalgia rheumatica
I. Rheumatoid arthritis
J. Scheuermann's disease

Answer:
G. Paget's disease

Q22

References:

Reference 1: Britton C, Walsh J. Paget disease of bone: An update. Aust Fam Physician 2012;41(3):100–03. Available at www.racgp.org.au/afp/2012/march/paget-disease-of-bone [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Bone and metabolism: Paget disease of bone. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=paget-disease-of-bone&guidelineName=Bone%20and%20Metabolism&topicNavigation=navigateTopic [Accessed February 2023].

Reference 3: Cook SJ, Wall C. Paget's disease of the bone: A clinical update. Aust J Gen Pract 2021;50(1–2):23–29. Available at www1.racgp.org.au/ajgp/2021/january-february/pagets-disease-of-bone [Accessed February 2023].

Feedback:

This question was used in the 2021.2 Applied Knowledge Test. It was answered correctly by 76% of candidates.

The question requires candidates to have a knowledge of the typical presentation and investigation findings in Paget's disease of bone. In this case, the combination of hip pain, raised alkaline phosphatase and cotton wool appearance on hip X-ray are consistent with Paget's disease.

Paget's disease affects approximately 2–4% of adults over the age of 55 years. It is the second most common metabolic bone disease after osteoporosis. Both genetic and environmental factors play a role in the development of Paget's disease, but its aetiology continues to be poorly understood. Treatment is usually with bisphosphonates when patients are symptomatic and should also be considered when the disease presents at sites that are at increased risk of complications, such as long bones or base of the skull.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q23

Shenayah Ah See, aged 12 years, an Aboriginal girl, is brought in by her mother because Shenayah has had fevers and a lumpy rash on her arms for one week. She has felt sore all over, especially in different joints. After a day or two a joint feels better, but then the pain begins in another joint. Shenayah is normally well although her mother states she had school sores a month ago, which resolved without treatment. On examination, her temperature is 39.0°C. Her left knee and ankle are swollen and are tender when palpated. COVID-19 has been definitively excluded.

What is the **MOST** appropriate initial investigation to support the provisional diagnosis?

A. Dengue virus serology
B. Epstein–Barr virus serology
C. Joint aspiration of left knee
D. Serum antistreptolysin O titre
E. Serum rheumatoid factor

Answer:
D. Serum antistreptolysin O titre

Q23

References:

Reference 1: Smith M, Zurynski Y, Lester-Smith D, Elliott E, Carapetis J. Rheumatic fever identification, management and secondary prevention. Aust Fam Physician 2012;41(1):31–35. Available at www.racgp.org.au/afp/2012/januaryfebruary/rheumatic-fever [Accessed February 2023].

Reference 2: Szczygielska I, Hernik E, Kołodziejczyk B, Gazda A, Maślińska M, Gietka P. Rheumatic fever – New diagnostic criteria. Rheumatologia 2018;56(1):37–41. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC5911656 [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Antibiotic: Rheumatic fever. West Melbourne, Vic: Therapeutic Guidelines, 2019. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=rheumatic-fever&guidelineName=Antibiotic&topicNavigation=navigateTopic#toc_dle837 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 94% of candidates.

Acute rheumatic fever is an autoimmune response to infection by group A streptococcus. The infection typically involves the upper respiratory tract or skin. Approximately 95% of cases in Australia occur in Indigenous Australians. Rheumatic heart disease is the result of heart valves being damaged by one or more episodes of acute rheumatic fever. It is important that general practitioners are able to recognise acute rheumatic fever and are aware of appropriate investigations. In this case the most appropriate investigation is serum antistreptolysin O titre.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q24

Chrissie Jenkins, aged 52 years, has a painless right-sided neck lump. Chrissie has cerebral palsy and lives in shared supported accommodation. On examination, her heart rate is 70/min regular and blood pressure 134/72 mmHg. Her thyroid gland is mildly enlarged with prominence of the right lobe. A neurological examination does not reveal any new abnormalities.

Investigations are performed with relevant findings as follows.

Test	**Result**	**Normal range**
Thyroid-stimulating hormone	**<0.03 mIU/L***	0.5–4.0
T4	11.1 pmol/L	10.0–19.0
T3	**6.9 pmol/L***	3.5–6.5
Anti-thyroid peroxidase antibodies	42 kIU/L	<60
Anti-thyroglobulin antibodies	<30 kIU/L	<60

Thyroid nuclear scan report: ‘Scintographic evidence in keeping with a multinodular goitre with a dominant toxic nodule in the right upper pole.'

What is the **MOST** appropriate initial step in management?

A. Carbimazole 10 mg daily
B. Propranolol 50 mg twice daily
C. Radioactive iodine
D. Right thyroid nodule fine needle aspirate
E. Thyroidectomy

Answer:
A. Carbimazole 10 mg daily

Q24

References:

Reference 1: Hughes K, Eastman C. Goitre: Causes, investigation and management. Aust Fam Physician 2021;41(8):572–77. Available at www.racgp.org.au/afp/2012/august/goitre [Accessed February 2023].

Reference 2: Wong R, Farrell SG, Grossmann. Thyroid nodules: Diagnosis and management. Med J Aust 2018;209(2):92–98. Available at www.mja.com.au/journal/2018/209/2/thyroid-nodules-diagnosis-and-management [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Bone and metabolism: Thyroid disorders – Thyrotoxicosis and hyperthyroidism. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=thyrotoxicosis-and-hyperthyroidism&guidelineName=Bone%20and%20Metabolism#toc_d1e954 [Accessed February 2023].

Feedback:

This question was used in the 2019.1 Applied Knowledge Test. It was answered correctly by 35% of candidates.

The patient's thyroid nuclear scan has confirmed multinodular goitre with a dominant toxic nodule. Fine-needle aspirate is not required to investigate for thyroid cancer as the nodule is not cold. A beta-blocker is not required as the patient is clinically euthyroid. Primary hyperthyroidism of any cause is usually treated initially with an antithyroid drug. Thyroidectomy is an option, but not as safe as the 'best' option – low-dose carbimazole initially. In some incidences, radioactive iodine could be considered as treatment for a toxic nodule; however, the patient lives in shared accommodation, hence isolation is difficult, making radiotherapy inappropriate. It is important to consider all the information provided within the question. In this setting, harm could have been caused to other residents if their living situation and limitations were not considered. Watchful waiting was not provided as an answer but could have been considered. However, subclinical or mild hyperthyroidism has adverse long-term consequences, particularly on the cardiovascular system and on bone density.

Questions remain correct at the time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q25

Brenda King, aged 38 years, has developed heavy irregular vaginal bleeding over the past five weeks. Her first episode of bleeding lasted 10 days followed by two weeks of no blood loss. The bleeding recommenced 13 days ago and has been continuous. She currently soaks a large sanitary pad with blood every three hours.

Prior to this recent heavy bleeding her menstrual cycle was infrequent, usually twice per year. A cervical screening test and sexually transmitted infection screen performed two months ago were normal. She is currently not in a relationship, has never been pregnant and has not been sexually active for 12 months. On examination, her body mass index is 38 kg/m^2, heart rate 80/min, blood pressure 128/73 mmHg (sitting) and 122/81 mmHg (standing).

What is the **MOST** appropriate initial investigation to determine the cause of the bleeding?

A. First-pass urine chlamydia polymerase chain reaction
B. Follicle-stimulating hormone
C. Oestradiol
D. Screening for factor VIII deficiency
E. Transvaginal pelvic ultrasound

Answer:
E. Transvaginal pelvic ultrasound

Q25

References:

Reference 1: The Royal Australian and New Zealand College of Radiologists, Cancer Australia. Abnormal vaginal bleeding in pre- and peri-menopausal women/ Vaginal bleeding in post-menopausal women. Strawberry Hills, NSW: Cancer Australia, 2011. Available at https://canceraustralia.gov.au/sites/default/files/publications/ncgc-vaginal-bleeding-flowcharts-march-20111_504af02038614.pdf [Accessed February 2023].

Reference 2: Kaunitz AM. Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (beyond the basics). Amsterdam: UpToDate/Wolters Kluwer, 2021. Available at www.uptodate.com/contents/heavy-or-prolonged-menstrual-bleeding-menorrhagia-beyond-the-basics [Accessed February 2023].

Reference 3: Government of Western Australia. Diagnostic imaging pathways – Bleeding (abnormal pre- menopausal). Perth: Government of Western Australia, 2013. Available at www.imagingpathways.health.wa.gov.au/index.php/image-galleries/medical-images/obstetric-gynaecological?id=167#pathway [Accessed February 2023].

Feedback:

This question was used in the 2020.1 Applied Knowledge Test. It was answered correctly by 88% of candidates.

Candidates are required to recognise that this patient has several risk factors for endometrial hyperplasia and carcinoma – namely her obesity, nulliparity and history of chronic anovulation with new onset of dysfunctional uterine bleeding. Transvaginal ultrasound is recommended as an initial investigation to measure endometrial thickness and identify risk of endometrial carcinoma.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q26

Yolanda Grayson, aged 24 years, has a progressively worsening rash that started two days earlier. The rash developed quickly and has spread over her trunk and limbs (see image). You note that she presented three weeks earlier to your clinic with an upper respiratory tract infection that was treated symptomatically. Apart from the rash, she now feels well. On examination, her temperature is 37.2°C.

What is the **MOST** appropriate next step?

A. Cefalexin 500 mg twice daily for five days
B. Coal tar solution-salicylic acid 4%/3% cream topically twice daily for 1 month
C. Epstein–Barr virus serology
D. Phenoxymethylpenicillin 500 mg twice daily for 10 days
E. Prednisolone 50 mg daily for five days
F. Punch biopsy of rash for histopathology
G. Syphilis serology
H. Valaciclovir 1 g three times daily for seven days

Answer:
B. Coal tar solution-salicylic acid 4%/3% cream topically twice daily for 1 month

Q26

References:

Reference 1: Therapeutic Guidelines. Dermatology: psoriasis. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=psoriasis&guidelineName=Dermatology#toc_d1e187 [Accessed February 2023].

Reference 2: Stanway A. Guttate psoriasis. NZ: Dermnet NZ, 2021. Available at www.dermnetnz.org/topics/guttate-psoriasis [Accessed February 2023].

Reference 3: Owen CM, Chalmers R, O'Sullivan T, Griffiths CEM. Antistreptococcal interventions for guttate and chronic plaque psoriasis. Cochrane Database Syst Rev 2019;(3). Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC6402274 [Accessed February 2023].

Feedback:

This question was used in the 2021.2 Applied Knowledge Test. It was answered correctly by 77% of candidates.

This question requires candidates to be able to diagnose and treat guttate psoriasis in this patient who is otherwise well. This condition is often preceded by an episode of upper respiratory tract infection or streptococcal tonsillitis, and mild forms can be treated with emollients or coal tar. The diagnosis is usually clinical, and a biopsy is not indicated. There is no evidence that antibiotics are of benefit if the initial infection has resolved, and there is no indication of a skin infection in this patient. The rash associated with Epstein–Barr virus presents within the first few days of illness and typically lasts for one week. A rash in secondary syphilis affects mucous membranes and patients tend to have systemic symptoms such as a fever or lymphadenopathy.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q27

James Bradbury, aged 18 years, presented last week embarrassed about his enlarging breasts. James has been overweight since puberty and has gained 6 kg in the past 18 months. On examination, his body mass index is 30.2 kg/m^2, waist circumference 98.5 cm. He has moderate gynaecomastia, sparse body hair and symmetrical firm testes of approximately 3 mL each.

Investigation results are as follows.

Full blood count, urea and electrolytes, fasting glucose and thyroid-stimulating hormone are all normal.

Test	**Result**	**Normal range**
Total cholesterol	**5.9 mmol/L***	<5.5
Triglycerides	**2.9 mmol/L***	<2.0
Follicle-stimulating hormone	**29 IU/L***	1–8
Luteinising hormone	**21 IU/L***	1–8
Serum total testosterone	**7.1 nmol/L***	9–29

What is the **MOST** appropriate provisional diagnosis?

A. Acromegaly
B. Congenital adrenal hyperplasia
C. Cushing's disease
D. Exogenous anabolic steroid use
E. Fragile X syndrome
F. Haemochromatosis
G. Insulinoma
H. Klinefelter syndrome
I. Leydig cell testicular tumour
J. Mosaic Down syndrome
K. Prolactinoma
L. Testicular teratoma

Answer:
H. Klinefelter syndrome

Q27

References:

Reference 1: McLachlan R. Case 1: Bryan is lethargic. Check Unit 560: Endocrine. East Melbourne, Vic: The Royal Australian College of General Practitioners, 2019; p. 4–9. Available at https://gplearning.racgp.org.au/Content/2022/check/2019/May.pdf [Accessed February 2023].

Reference 2: Healthy Male: Andrology Australia. Androgen deficiency: Diagnosis and management. Melbourne and Canberra: Healthy Male: Andrology Australia, and Australian Government Department of Health, 2018. Available at http://healthymale.org.au/files/inline-files/Androgen%20Deficiency_CSG_Healthy%20Male%202019_1.pdf [Accessed February 2023].

Reference 3: Healthy Male: Andrology Australia. Klinefelter syndrome: Diagnosis and management. Melbourne and Canberra: Healthy Male: Andrology Australia, and Australian Government Department of Health, 2018. Available at http://healthymale.org.au/files/inline-files/Klinefelter%20Syndrome_CSG_Healthy%20Male%202019_1.pdf [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 71% of candidates.

This patient has features typical of testosterone deficiency, the commonest cause of which is Klinefelter syndrome – a common genetic condition affecting 1 in 450 men. Although Klinefelter syndrome has a varied phenotype, some of the more common features are increased height, small firm testes and symptoms of androgen deficiency. Some patients benefit from testosterone replacement therapy. General practitioners have a role in monitoring patients with Klinefelter syndrome for comorbidities including type 2 diabetes, hypothyroidism and osteoporosis.

Pituitary disease (most commonly prolactinoma) could cause low follicle stimulating hormone and luteinising hormone. Haemochromatosis and liver disease are other less common causes of testicular failure, but there are no other suggestive clinical features in this case.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q28

Bill Devon, aged 57 years, is brought in by ambulance to your rural emergency department after a tractor accident. He has severe pain in his right hip and leg and is unable to mobilise. On examination, the right leg appears shortened and externally rotated. He is given appropriate analgesia, a catheter is placed, and an X-ray is performed (see image). As part of the transfer, you call the nearest tertiary orthopaedic service for handover.

Image: Eurio

What is the **MOST** appropriate description of Bill's injury?

A. Fracture of the right femoral head
B. Fracture of the right pelvis with superior displacement of the acetabular socket
C. Intertrochanteric fracture of the right femur
D. Subcapital fracture of the right femur
E. Subtrochanteric fracture of the right femur

Answer:
D. Subcapital fracture of the right femur

Q28

References:

Reference 1: Blomberg J. Femoral neck fractures. Santa Barbara CA: Orthobullets 2021. Available at www.orthobullets.com/trauma/1037/femoral-neck-fractures [Accessed February 2023].

Reference 2: Yap, J. (2023) Radiopedia - Neck of femur fracture. Retrieved from: https://radiopaedia.org/articles/neck-of-femur-fracture-1?lang=us [Accessed March 2023].

Reference 3: Campagne D. Hip fractures. MSD Manual Professional Version. Kenilworth, NJ: MSD, 2021. Available at www.msdmanuals.com/en-au/professional/injuries-poisoning/fractures/hip-fractures [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 87% of candidates.

The question tests candidates' knowledge of mechanism of injury, typical examination findings for a particular fracture, X-ray interpretation and anatomical description of an injury. The mechanism of injury and examination findings should lead candidates to ascertain that this patient most likely has a hip fracture. The X-ray shows a superiorly displaced fracture of the hip. The final step is knowing the anatomical landmarks of the hip in relation to possible fracture sites and identifying that this is most likely a subcapital fracture. A subcapital fracture is a neck of femur fracture occurring below the level of the femoral head but above the intertrochanteric line.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q29

Adisa Abara, aged 34 years, presents to your clinic six weeks after self-discharging from hospital. He presented to emergency and was diagnosed with diabetic ketoacidosis and commenced on insulin. He self-discharged against medical advice as he wanted to go home.

Adisa has blood sugar levels regularly as low as 2.8 mmol/L despite self-reducing his insulin glargine dose from 30 units to three units at night and his insulin aspart from eight units three times daily to one to two times daily. Adisa wants to stop his insulin as he feels he doesn't need it and the hypoglycaemic episodes are scaring him.

You obtain the hospital discharge letter that states that his glutamic acid decarboxylase and insulinoma-associated protein-2 autoantibodies were negative. You wish to further evaluate his need for insulin.

What investigation is **MOST** appropriate to guide Adisa's insulin management?

A. Anti-endomysial antibody
B. Anti-gliadin antibody
C. Antithyroid antibodies
D. Beta-hydroxybutyrate level
E. C-reactive protein
F. Caeruloplasmin
G. Calprotectin
H. Fasting C-peptide
I. Ferritin
J. HbA1c
K. Human leukocyte antigen DQ2/DQ8
L. Serum cortisol level

Answer:
H. Fasting C-peptide

Q29

References:

Reference 1: Howarth DA. Ketoacidosis in a patient with type 2 diabetes - Flatbush diabetes. Aust Fam Physician 2015:44(1):53–54. Available at www.racgp.org.au/afp/2015/januaryfebruary/ketoacidosis-in-a-patient-with-type-2-diabetes-%E2%80%93-flatbush-diabetes [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Diabetes: Classifying, diagnosing and screening for diabetes. West Melbourne, Vic: Therapeutic Guidelines, 2019. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=classifying-diagnosing-and-screening-for-diabetes&guidelineName=Diabetes#toc_d1e774 [Accessed February 2023].

Reference 3: Krause RS. Ketosis-prone type 2 diabetes workup. US:, 2016. Available at https://emedicine.medscape.com/article/2154252-workup [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 68% of candidates.

This patient has ketosis-prone diabetes. Although this patient presented in diabetic ketoacidosis, his subsequent course of frequent severe hypoglycaemic episodes despite frequent significant reductions of his insulin dose is atypical for type 1 diabetes. In this scenario further testing is required to help determine future insulin requirements. The natural history of ketosis-prone diabetes after the initial episode of diabetic ketoacidosis depends upon the presence of autoantibodies and long-term beta cell reserve. Having a high C-peptide level indicates the presence of beta cell function and the concurrence of negative autoantibodies predicts the high likelihood of non-insulin dependent diabetes. Patients found not to have beta cell function (low C-peptide level) will need to be continued on insulin indefinitely.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q30

Jessie Evans, aged 9 years, presents with her father for renewal of Jessie's asthma action plan for school. Jessie was diagnosed with asthma three years ago. She takes salbutamol 100 mcg/inhalation 4–6 inhalations via metered dose inhaler and spacer as needed. She experiences an exacerbation of asthma symptoms approximately every two months. During these episodes she coughs in the morning and night and increases the frequency of her salbutamol temporarily. Between these times she is asymptomatic. Her routine immunisations are up to date.

On examination, her heart rate is 90/min regular, respiratory rate 24/min, temperature 36.2°C, ear, nose and throat examination is unremarkable. Chest auscultation reveals normal, symmetric air entry bilaterally with no wheeze.

What is the **MOST** appropriate next step?

A. Change salbutamol to budesonide-formoterol 200 mcg/6 mcg maintenance and reliever therapy
B. Commence fluticasone 50 mcg twice daily inhaled via spacer
C. Commence montelukast 5 mg daily
D. Continue with current asthma plan
E. Recommend five-yearly pneumococcus immunisation

Answer:
D. Continue with current asthma plan

Q30

References:

Reference 1: National Asthma Council. Australian asthma handbook. South Melbourne, Vic: National Asthma Council Australia, 2022. Available at www.asthmahandbook.org.au/ [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Respiratory: Asthma – Maintenance management of asthma in children. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=asthma-maintenance-management-children&guidelineName=Respiratory&topicNavigation=navigateTopic#toc_d1e325 [Accessed February 2023].

Reference 3: Henderson J, Charles J, Pan Y, Bayram C, Miller G, Britt H. Management of childhood asthma in general practice. Aust Fam Physician 2015;44(6):349–51. Available at www.racgp.org.au/afp/2015/june/management-of-childhood-%E2%80%A8asthma-in-general-practice [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 56% of candidates.

The scenario requires candidates to be familiar with classification of asthma severity as outlined in the Australian asthma handbook. This case describes infrequent intermittent asthma with mild flare-ups. The correct answer is to continue with the current asthma plan. A preventer is not indicated in this circumstance. Combined inhaled corticosteroid–long-acting beta 2 agonist maintenance and reliever therapy is not routinely recommended in Australia for children younger than age 12 years.

Questions remain correct at the time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q31

Howard Hart, aged 66 years, is frustrated about progressive stiffness in his hands. He recently had to stop playing golf as he is unable to hold the clubs properly. He recalls having painful lumps on his palms several years ago. The pain resolved but he has developed progressive stiffness in his fingers since then. He has reduced movement in both hands and has difficulty extending his right 5th finger (see image).

What is the **MOST** appropriate next step?

A. Anti-cyclic citrullinated peptide antibody titre
B. Arrange X-ray of both hands
C. Celecoxib 200 mg daily
D. Paracetamol 665 mg two tablets three times daily
E. Platelet-rich plasma injections into palm tendons
F. Referral to hand surgeon for fasciectomy
G. Referral to hand therapist for strengthening program
H. Ultrasound-guided steroid injection around lumps within his palms

Answer:
F. Referral to hand surgeon for fasciectomy

Q31

References:

Reference 1: Kovacs E. Dupuytren contracture differential diagnoses. US: Medscape, 2021. Available at http://emedicine.medscape.com/article/329414-differential [Accessed February 2023].

Reference 2: GP notebook. Dupuytren's contracture. Stratford-upon-Avon, UK: GP notebook, 2021. Available at www.gpnotebook.co.uk/simplepage.cfm?ID=-818610171 [Accessed February 2023].

Reference 3: Steinberg DR. (2020) Dupuytren contracture. MSD Manual Professional Version. Kenilworth, NJ: MSD, 2020. Available at www.msdmanuals.com/en-au/professional/musculoskeletal-and-connective-tissue-disorders/hand-disorders/dupuytren-contracture [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 54% of candidates.

The question requires candidates to have familiarity with Dupuytren’s contracture. The typical appearance fits the diagnosis, as does the description of its insidious onset and lack of associated symptoms. If the patient’s hand cannot be laid flat on a table, or if significant contracture has occurred at the proximal interphalangeal joints, then surgery is usually required. Further investigations (eg X-ray or anti–cyclic citrullinated peptide antibodies) will not assist as the diagnosis can be made clinically. Ultrasound-guided steroid injection may be useful in mild cases; however, due to the severity of the contracture in this case, surgery is indicated. Pain relief alone will not assist this patient.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q32

Ryan Kratz, aged 24 years, has experienced worsening urinary dribbling over the past six months. His urinary stream has weakened, and it sometimes feels like he cannot completely empty his bladder. He had appropriate treatment and follow up for chlamydia urethritis 18 months earlier. He has not had sex since. He has no family history of relevant medical conditions. A complete physical examination and urinary dipstick are unremarkable. An ultrasound of his renal tract reveals normal kidneys, normal bladder and prostate with normal architecture 25 mL in size.

What is the **MOST** appropriate provisional diagnosis?

A. Bladder calculus
B. Bladder diverticulum
C. Chlamydia urethritis
D. Overactive bladder
E. Peyronie's disease
F. Prostatitis
G. Transitional cell carcinoma
H. Urethral stricture

Answer
H. Urethral stricture

Q32

References:

Reference 1: Flynn H, Ong M, De Win G, Desai D. Narrowing in on urethral strictures. Aust J Gen Pract 2021;50(4):214–18. Available at www1.racgp.org.au/ajgp/2021/april/narrowing-in-on-urethral-strictures [Accessed February 2023].

Reference 2: Broghammer JA. Urethral strictures in males. US: Medscape, 2021. Available at https://emedicine.medscape.com/article/450903-overview [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 79% of candidates.

This is a case of predominant voiding lower urinary tract symptoms on a background of past infective urethritis. The most appropriate provisional diagnosis for this patient is a urethral stricture. A urethral stricture is an abnormal narrowing of the urethral lumen. Patients may present with lower urinary tract symptoms, recurrent urinary tract infections or acute urinary retention. Causes of urethral stricture include iatrogenic injuries (eg secondary to catheter insertion and surgery), infection (eg chlamydia and gonorrhoea), lichen sclerosis and malignancy. Treatment for urethral stricture is usually surgical.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q33

Leah Wright, aged 32 years, asks if she should take a ‘break’ from her combined oral contraceptive pill. She has been taking the combined oral contraceptive pill for the past 10 years for contraception but some of her friends have suggested this is not a good idea as it may lead to infertility. She has also been taking escitalopram 10 mg daily for the past year and she is worried that the combined oral contraceptive pill may be worsening her mood. She also feels like she has gained weight in the past two months. She was told by a friend that she could 'skip' periods and continuously take the combined oral contraceptive pill for several months to avoid having a period. You explain you would like to address each of her concerns in turn.

What is the **MOST** appropriate evidence-based advice?

A. Depressive symptoms often become more severe when patients start taking the combined oral contraceptive pill
B. It is recommended to have a break from the combined oral contraceptive pill every 10 years
C. Long-term use of the combined oral contraceptive pill does not reduce fertility
D. Postponing hormone withdrawal bleeds periodically using the combined oral contraceptive pill causes medical harm
E. Weight gain of approximately 2 kg is common when taking the combined oral contraceptive pill

Answer:
C. Long-term use of the combined oral contraceptive pill does not reduce fertility

Q33

References:

Reference 1: Moore P, Streeton C. Oral hormonal contraception in special circumstances. Aust Fam Physician 2017;46(10):728–32. Available at www.racgp.org.au/afp/2017/october/oral-hormonal-contraception-in-special-circumstances [Accessed February 2023].

Reference 2: Centers for Disease Control and Prevention. US Medical Eligibility Criteria (US MEC) for Contraceptive Use, 2016. Atlanta, GA: CDC, 2016. Available at www.cdc.gov/reproductivehealth/contraception/mmwr/mec/summary.html [Accessed February 2023].

Feedback:

This question was used in the 2022.1 AKT. It was answered correctly by 90% of candidates.

This question requires candidates to have a basic understanding of common misconceptions patients may have about the use of the combined oral contraceptive pill. It is important for general practitioners to be aware of these common misconceptions as they can correct them and halt their proliferation. Of the common concerns described, the only correct factor is that the COCP can be safely continuously used to skip periods. Many general practitioners are yet to advise this to their patients however it is now a widely respected practice. The alternative myths are all false.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q34

Natalie Elder, aged 32 years, is 11 weeks pregnant and returns for her blood test results. She has had mild nausea with occasional vomiting but is otherwise well. Her clinical examination is appropriate for her gestation, and her body mass index is 27.8 kg/m^2. She had an ultrasound scan last week; results were appropriate for gestational age. She does not want genetic screening.

Natalie has a history of long-term, stable subclinical hypothyroidism that has not required medication.

Blood test results completed yesterday are as follows.

Test	**Result**	**Normal range**
Thyroid-stimulating hormone	**5.2 mIU/L***	0.1–2.5 (first trimester)
Free T4	**8 pmol/L***	10–20
Anti-thyroid peroxidase antibodies	25 IU/mL	<60

What is the **MOST** appropriate next step?

A. Foetal growth scan at 14 weeks' gestation
B. Increase dietary intake of iodine-rich foods
C. Nuclear thyroid scan
D. Reassure Natalie that she requires no further thyroid follow-up
E. Repeat Natalie's thyroid studies today, including T3
F. Repeat thyroid function tests in six weeks
G. Thyroxine 50 mcg daily
H. Ultrasound of the thyroid

Answer:
G. Thyroxine 50 mcg daily

Q34

References:

Reference 1: Mater Mothers Hospital. Thyroid management in pregnancy. South Brisbane, QLD: Mater Mothers Hospital, 2021. Available at https://materonline.org.au/getmedia/f6f667b9-cb49-4dfe-a590-67072764d2ea/Thyroid-management-in-pregnancy [Accessed February 2023].

Reference 2: The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Subclinical hypothyroidism and hypothyroidism in pregnancy. Melbourne: RANZCOG, 2022. Available at https://ranzcog.edu.au/wp-content/uploads/2022/05/Subclinical-hypothyroidism-and-hypothyroidism-in-pregnancy.pdf [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Bone and Metabolism: Thyroid disorders – Hypothyroidism. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=hypothyroidism&sectionId=bmg2-c02-s4#bmg2-c02-s4 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 89% of candidates.

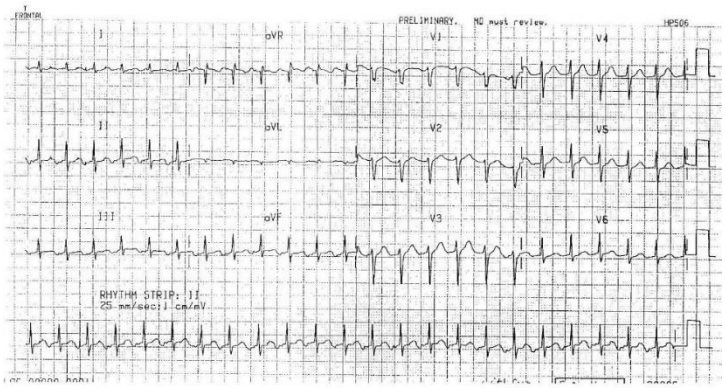
This question requires candidates to understand the management of hypothyroidism during pregnancy. Hypothyroidism is associated with adverse effects on pregnancy and foetal development, including increased risks of pre-eclampsia, placental abruption, anaemia and postpartum haemorrhage, prematurity and perinatal mortality. Thyroid function testing with serum thyroid-stimulating hormone should be performed in early pregnancy for women with symptoms of thyroid disease or risk factors for thyroid disease. A new diagnosis of overt hypothyroidism during pregnancy requires immediate thyroxine replacement. The usual starting dose is 50 mcg per day.

Women who are pregnant should take an iodine supplement of 150 mcg per day. However, this is not a treatment for overt hypothyroidism in pregnancy. Thyroid ultrasound is not indicated in this case but can be used to differentiate the causes of hyperthyroidism and/or assess thyroid nodules.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q35

Jacky Peterfield, aged 32 years, presents to your rural hospital with the sensation of palpitations. She has had several episodes of palpitations over the past few months, but this is the first time she has seen a doctor. The current episode began 10 minutes ago and is associated with a feeling of anxiety and mild breathlessness. On examination, her heart rate is 160/min regular, blood pressure 110/60 mmHg and respiratory rate 20/min. Her electrocardiogram is as shown (see image).



What is the **MOST** appropriate initial management?

A. Adenosine 6 mg intravenous bolus
B. Direct current cardioversion under sedation
C. Metoprolol 2.5 mg intravenously over five minutes
D. Vagal manoeuvres
E. Verapamil 5 mg intravenously over two minutes

Answer:
D. Vagal manoeuvres

Q35

References:

Reference 1: Gugneja M. Paroxysmal supraventricular tachycardia treatment & management. US: Medscape, 2017. Available at http://emedicine.medscape.com/article/156670-treatment [Accessed February 2023].

Reference 2: Burns E, Buttner R. Supraventricular tachycardia (SVT). Australasia: Life in the Fast Lane, 2022. Available at https://litfl.com/supraventricular-tachycardia-svt-ecg-library/ [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 90% of candidates.

Based on the clinical and electrocardiogram findings, this patient is most likely to have paroxysmal supraventricular tachycardia. The most appropriate initial management is vagal stimulation with various manoeuvres. If this is unsuccessful, adenosine can be tried in increasing doses. If this is inadequate, calcium channel blockers or beta-blockers can be used. Immediate cardioversion is only required if the patient is hypotensive or unstable.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q36

Alexandra McCarthy, aged 39 years, has had intermittent abdominal cramps and diarrhoea for the past six months. She occasionally noticed small amounts of blood and mucus in her stools. Several times she has woken from sleep with an urgent need to go to the toilet. Alexandra has plaque psoriasis and is prescribed methylprednisolone aceponate 0.1% cream topically once daily for flares. Four weeks ago, she presented to a colleague at your practice who arranged stool testing. Blastocystis hominis was detected on polymerase chain reaction. She was prescribed metronidazole 2 g daily for three days; however, her symptoms have not changed.

What is the **MOST** appropriate next step?

A. Hydrogen breath test
B. Metronidazole 400 mg three times daily for five days
C. Refer to gastroenterologist for colonoscopy
D. Repeat faecal polymerase chain reaction
E. Trial low fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) diet

Answer:
C. Refer to gastroenterologist for colonoscopy

Q36

References:

Reference 1: SA Health. Blastocystis infection – Including symptoms, treatment and prevention. Adelaide: SA Health, date unknown. Available at https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/conditions/infectious+diseases/blastocystis+infection/blastocystis+infection+-+including+symptoms+treatment+and+prevention#:~:text=Blastocystis%20is%20a%20single%2Dcelled,has%20not%20yet%20been%20found [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Gastrointestinal: Blastocystis hominis carriage. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=gastrointestinal-protozoa&guidelineName=Antibiotic#toc_d1e581 [Accessed February 2023].

Reference 3: Rowe WA, Lichtenstein GR. Inflammatory bowel disease. US: Medscape, 2020. Available at https://emedicine.medscape.com/article/179037-overview [Accessed February 2023].

Reference 4: Gastroenterological Society of Australia. Inflammatory bowel disease: Clinical update for general practitioners and physicians. Melbourne: GESA, 2018. Available at www.gesa.org.au/public/13/files/Education%20%26%20Resources/Clinical%20Practice%20Resources/IBD/2018_IBD_Clinical_Update_May_update.pdf [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 65% of candidates.

The case requires candidates to consider this patient's past medical history and symptoms to determine her risk of inflammatory bowel disease. She has a history of autoimmune disease (psoriasis), which increases her risk of developing another autoimmune disease. She has several red flag symptoms for inflammatory bowel disease – blood and mucus in her stool and being woken from sleep to empty her bowels. This symptomatology and medical history should lead candidates to determine that this patient requires a colonoscopy. The presence of B. hominis does not alter the need for colonoscopy. This parasite is common and can be present in asymptomatic individuals. The use of antimicrobial therapy for B. hominis is controversial and not supported by good-quality evidence. Further stool testing and prescription of antibiotics is not appropriate. Hydrogen breath tests are for investigation of intolerance to dietary sugars. A faecal calprotectin test may aid in supporting the provisional diagnosis of inflammatory bowel disease, however given the 'red flag' symptoms this patient has presented with, colonoscopy referral is required.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q37

Tamika Edwards, aged 23 years, has a four-day history of fevers, runny nose, sore throat and a cough. She has had difficulty completing her university assignment because she has felt so tired. She has tried taking some over-the-counter cold and flu medications, but this has not helped. She wants to know if she can get something 'stronger' on prescription. She is a non-smoker and her only medication is an etonorgestrel 68 mg implant. COVID-19 has been definitively excluded.

On examination, her temperature is 37.5°C, heart rate 80/min regular and respiratory rate 20/min. She has clear rhinorrhoea, erythematous tympanic membranes bilaterally and pharyngeal erythema, but her chest is clear with equal breath sounds.

What is the **MOST** appropriate next step?

A. Amoxicillin 500 mg three times daily for five days
B. Amoxicillin-clavulanate 875 mg/125 mg twice daily for five days
C. Chest X-ray
D. Fexofenadine 180 mg daily
E. Oseltamivir 75 mg twice daily for five days
F. Pseudoephedrine 60 mg up to four times daily
G. Rest, oral fluids and paracetamol as required
H. Serology for Epstein–Barr virus
I. Throat swab for microscopy, culture and sensitivities

Answer:
G. Rest, oral fluids and paracetamol as required

Q37

References:

Reference 1: Therapeutic Guidelines. Antibiotic: Sore throat. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Antibiotic&topicfile=bartonella-infections&guidelinename=auto&sectionId=c_ABG_Sore_throat_topic_2#c_ABG_Sore_throat_topic_2 [Accessed February 2023].

Reference 2: Choosing Wisely Australia. Recommendations: The Royal Australian College of General Practitioners. Strawberry Hills, NSW: NPS MedicineWise, 2016. Available at www.choosingwisely.org.au/recommendations/racgp [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 89% of candidates.

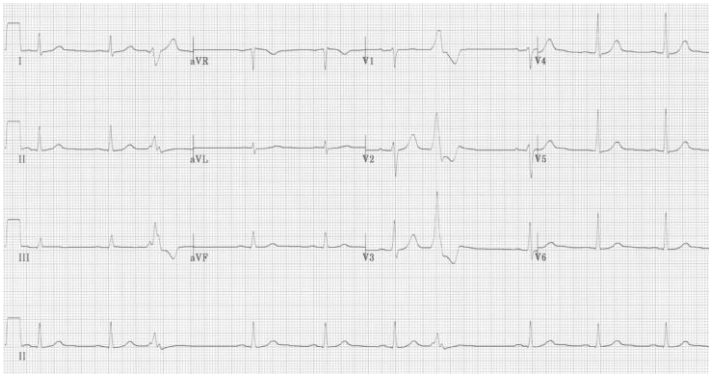
This patient has classic symptoms of an uncomplicated viral upper respiratory tract infection. At this stage, simple, symptomatic measures are all that are required, with appropriate safety-net advice. Antibiotics are not indicated in this case, and it is important for candidates to be aware of antibiotic stewardship. Likewise, at this stage, investigations are not indicated as it is most likely this patient has the common cold. Prescribing pseudoephedrine should not be routine practice in the management of viral upper respiratory tract infections.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q38

Annie Lim, aged 41 years, presents today for test results. For the past two weeks she has had infrequent, irregular heartbeats occurring at any time of the day. These heartbeats are associated with an uncomfortable sensation in her chest lasting one or two seconds. She has not felt lightheaded or breathless with these episodes. On examination, her heart rate is 72/min regular, blood pressure 122/78 mmHg and cardiovascular examination is normal.

Full blood examination, serum electrolytes and thyroid function tests performed two days ago were normal. An echocardiogram is normal. An electrocardiogram is performed while she experiences the irregular heartbeat (see image).



What is the **MOST** appropriate next step?

A. Apixaban 5 mg twice daily
B. Aspirin 100 mg daily
C. Exercise stress test
D. Flecainide 50 mg twice daily
E. Metoprolol 25 mg twice daily
F. Provide reassurance and lifestyle advice regarding the condition
G. Stress echocardiogram
H. Troponin

Answer:
F. Provide reassurance and lifestyle advice regarding the condition

Q38

References:

Reference 1: Farzam K, Richards JR. Premature ventricular contraction. Bethesda, MD: National Center for Biotechnology Information, National Library of Medicine, 2019. Available at www.ncbi.nlm.nih.gov/books/NBK532991 [Accessed February 2023].

Reference 2: McLellan A, Kalman J. Approach to palpitations. Aust J Gen Pract 2019;48(4):204–09, Available at www1.racgp.org.au/ajgp/2019/april/approach-to-palpitations [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Cardiovascular: Ventricular ectopic beats. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=ventricular-ectopic-beats&guidelineName=Cardiovascular&topicNavigation=navigateTopic#toc_d1e47 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 84% of candidates.

Annie has premature ventricular contractions, as seen on her electrocardiogram. Occasional ventricular ectopic beats are very common in the general population and are usually benign in nature. When a patient is experiencing frequent ectopic beats, it is appropriate to exclude underlying structural heart disease and ectopic-mediated cardiomyopathy via echocardiogram. As Annie has a normal echocardiogram and therefore no underlying heart disease, it is appropriate to offer her explanation and reassurance initially. Usually this is all that is required and can often lead to an improvement in symptoms. Should her symptoms be ongoing and bothersome, a beta-blocker can be prescribed. As Annie’s symptoms occur at any time of the day, there is no suggestion they are linked to exercise, so stress echocardiogram and exercise stress testing are not indicated.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q39

David Franklin, aged 38 years, reports increasing difficulty performing his job as a courier driver. He feels fatigued and has had increasing lower back stiffness and pain over the past five months, particularly at the start of his early morning shifts. He finds the pain is worse after sitting or lying down but improves when he gets moving again. On examination, his temperature is 36.8°C, heart rate 72/minute regular and blood pressure 115/69 mmHg. He has a normal gait and mild tenderness over his right sacroiliac joint. He has a reduced range of motion in forward flexion of the lumbar spine and normal hip flexibility. You arrange X-rays of his lumbar spine and pelvis, both of which are reported as normal.

What is the **MOST** appropriate investigation to support the provisional diagnosis?

A. Anti-nuclear antibody
B. Anti-tissue transglutaminase antibodies
C. CT scan lumbosacral spine
D. Human leucocyte antigen B27
E. Iron studies
F. Nerve-conduction studies of the lower limbs
G. Radionuclide bone scans
H. Serum B12 level
I. Urine for Bence Jones protein

Answer:
D. Human leucocyte antigen B27

Q39

References:

Reference 1: Therapeutic Guidelines. Rheumatology: Spondyloarthritides, including psoriatic arthritis – Ankylosing spondylitis. West Melbourne, Vic: Therapeutic Guidelines, 2017. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=spondyloarthritides-including-psoriatic-arthritis&sectionId=rhg3-c13-s2#rhg3-c13-s2 [Accessed February 2023].

Reference 2: Golder V, Schachna L. Ankylosing spondylitis: An update. Aust Fam Physician 2013;42(11):780–84. Available at www.racgp.org.au/afp/2013/november/ankylosing-spondylitis [Accessed February 2023].

Reference 3: Kontzias A. Ankylosing spondylitis. MSD Manual Professional Version. Kenilworth, NJ: MSD, 2020. Available at www.msdmanuals.com/professional/musculoskeletal-and-connective-tissue-disorders/joint-disorders/ankylosing-spondylitis [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 89% of candidates.

David has symptoms that are highly suggestive of ankylosing spondylitis. Ankylosing spondylitis is an inflammatory spondyloarthropathy occurring predominantly in men, with onset prior to the age of 40 years. It has a chronic relapsing, remitting course, with typical features including pain and stiffness in the lower lumbar spine and buttock regions. Chronic inflammation eventually leads to stiffening of the spine with reduced mobility and abnormal posture.

History and physical examination are most useful in diagnosing ankylosing spondylitis. Although inflammatory markers (erythrocyte sedimentation rate and c-reactive protein) may be elevated, they are not closely correlated with disease activity. X-ray changes may not be seen for many years and so are often not present at diagnosis. Magnetic resonance imaging may be a useful adjunct to clinical assessment.

Systemic involvement can occur, with acute anterior uveitis being the most common extra-articular feature and occurs in up to 30% of patients. Human leukocyte antigen B27 (HLA-B27) is positive in more than 90% of patients with ankylosing spondylitis, and in the presence of clinical features may be helpful in supporting the diagnosis. However, it is not useful as a general screening tool as it may be positive in around 10% of the Australian population.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q40

Cassie Whelan, aged 17 years, fell off the high beam onto her left foot at gymnastics training today. She felt a ‘snap’ as she landed and has been unable to weight bear since then. On examination, she is unable to weight bear on her left foot and has tenderness and swelling over her mid-foot with visible bruising under her foot. While holding her mid-foot to assess her range of motion, a clunk is felt during passive dorsiflexion and plantar flexion, which causes significant pain.

You arrange an X-ray (see image).

Image: James Heilman, MD

What is the **MOST** appropriate provisional diagnosis?

A. Anterior talofibular ligament tear
B. Deltoid ligament rupture
C. Fractured base of fifth metatarsal (Jones fracture)
D. Lateral malleolar avulsion fracture
E. Medial malleolar avulsion fracture
F. Navicular fracture
G. Syndesmosis injury
H. Tarsometatarsal fracture-dislocation (Lisfranc fracture)

Answer:
H. Tarsometatarsal fracture-dislocation (Lisfranc fracture)

Q40

References:

Reference 1: Wynter S, Grigg C. Lisfranc injuries. Aust Fam Physician 2017;46(3):116–19. Available at www.racgp.org.au/afp/2017/march/lisfranc-injuries [Accessed February 2023].

Reference 2: Ortho info. Lisfranc (midfoot) injury. Rosemont, IL: American Academy of Orthopaedic Surgeons, 2022. Available at https://orthoinfo.aaos.org/en/diseases--conditions/lisfranc-midfoot-injury [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 85% of candidates.

Cassie's physical examination and X-ray are consistent with a Lisfranc injury. A Lisfranc injury is a tarsometatarsal fracture dislocation with traumatic disruption between the articulation of the medial cuneiform and base of the second metatarsal. This type of injury is an uncommon presentation to general practice; however, it is crucial to have a high index of suspicion in patients presenting with mid-foot injuries as some Lisfranc fractures may be subtle on presentation. Any fracture or subluxation of the Lisfranc joint requires surgical intervention to reduce the significant risk of premature arthritis developing within the mid-foot, with resultant pain and loss of function. The only appropriate course of action in this case is for orthopaedic referral and surgical intervention.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q41

Harvey Windsor, aged 13 years, presents with his mother, Melissa, because he has been unwell for three weeks. He feels lethargic, has not been playing his usual sports, and has a persistent dry cough day and night. He has also had headaches. One week ago, he was prescribed five days of amoxicillin 500 mg three times daily, but his symptoms have not improved. COVID-19 has been definitively excluded. On examination, his temperature is 38.2°C, heart rate 98/min regular and blood pressure 110/70 mmHg. He has crackles present in both lung fields and mild expiratory wheeze. You arrange appropriate further investigations.

What is the **MOST** appropriate management?

A. Amoxicillin-clavulanic acid 875 mg/125 mg twice daily for five days
B. Ciprofloxacin 750 mg twice daily for seven days
C. Doxycycline 100 mg twice daily for seven days
D. Fluticasone proprionate-salmeterol 100 mcg/50 mcg inhaled twice daily
E. Oseltamivir 75 mg twice daily for five days

Answer:
C . Doxycycline 100 mg twice daily for seven days

Q41

References:

Reference 1: Waites KB, Xiao L, Liu Y, Balish, MF, Atkinson TP. Mycoplasma pneumoniae from the Respiratory Tract and Beyond. Clin Microbiol Rev 2017;30:747–809. Available at https://cmr.asm.org/content/30/3/747 [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Antibiotic: Respiratory tract infections: Pneumonia – Directed therapy for pneumonia. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=pneumonia-directed-therapy&guidelineName=Antibiotic#toc_d1e771 [Accessed February 2023].

Reference 3: Kashyap S, Sarkar M. Mycoplasma pneumonia: Clinical features and management. Lung India 2010;27(2):75–85. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC2893430 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 92% of candidates.

Harvey's presentation is consistent with an atypical pneumonia most likely caused by Mycoplasma pneumoniae. M. pneumoniae is a common cause of pneumonia in the pre-adolescent age group and the presentation and treatment is different to other forms of pneumonia. Features such as a dry cough and headache with persisting symptoms despite initial amoxicillin therapy should cue to the diagnosis of mycoplasma in this patient. As the patient has been symptomatic for three weeks, influenza is unlikely to be the causative pathogen. Oseltamivir can be used to treat influenza in certain patients but should be commenced within 48 hours of symptom onset to be effective. Inhaled corticosteroid-long-acting beta 2 agonist combination is inappropriate as this patient has ongoing signs of acute infection. If Harvey had risk factors and/or signs of bronchiectasis, pseudomonas infection would be more likely and ciprofloxacin a reasonable choice of treatment.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q42

Jacinta Perry, a veterinary nurse aged 26 years, has been feeling unwell for four days. She has been experiencing generalised fatigue, low-grade fevers, nausea and mild headaches. On examination, her temperature is 38.0°C, blood pressure 125/75 mmHg and she has enlarged, tender right axillary lymph nodes. The remainder of her examination is normal. COVID-19 has been definitively excluded.

What is the **MOST** appropriate provisional diagnosis?

A. Bird fancier's lung disease
B. Cat scratch disease
C. Infectious mononucleosis
D. Psittacosis
E. Pyogenic lymphadenitis

Answer:
B. Cat scratch disease

Q42

References:

Reference 1: Hoy RF. Respiratory problems: Occupational and environmental exposures. Aust Fam Physician 2012;41(11), 856–60. Available at www.racgp.org.au/afp/2012/november/respiratory-problems [Accessed February 2023].

Reference 2: Lessnau K-D. Psitticosis (parrot fever). US: Medscape, 2019. Available at http://emedicine.medscape.com/article/227025-overview [Accessed February 2023].

Reference 3: Ngan V. Catscratch disease. NZ: Dermnet NZ, 2003. Available at www.dermnetnz.org/topics/catscratch-disease [Accessed February 2023].

Reference 4: Schwartz RA. Cat scratch disease (cat scratch fever). US: Medscape, 2018. Available at http://emedicine.medscape.com/article/214100-overview [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 71% of candidates.

This question requires candidates to identify risk factors for disease and assess the most likely provisional diagnosis. This veterinary nurse presents with axillary lymphadenopathy. It is reasonable to assume that in her line of work she is at risk of scratches from cats and therefore cat scratch disease. This causes a mild fever, systemic illness and significant regionalised lymphadenopathy. Bird fancier's lung typically presents with dyspnoea and dry cough. Infectious mononucleosis (caused by Epstein–Barr virus) typically presents with fever, generalised lymphadenopathy and sore throat. Psittacosis (caused by Chlamydia psittaci) usually presents with cough and fever. Pyogenic lymphadenitis is usually the result of a bacterial infection within a lymph node and typically results in an enlarged, tender, warm lymph node with erythematous overlying skin.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q43

Charlotte Reid, aged 73 years, has had four months of diarrhoea. She has watery bowel motions, feels bloated and full and has had a large amount of flatus. Her past medical history includes hypertension, hypothyroidism and bilateral hip osteoarthritis. Her medications include irbesartan 300 mg daily, thyroxine 100 mcg daily, diclofenac 50 mg twice daily, paracetamol 665 mg two tablets three times daily and glucosamine sulfate 1500 mg daily.

Charlotte recently had a colonoscopy, which was reported as macroscopically normal; however, the biopsy demonstrated evidence of lymphocytic colitis.

Which medication is **MOS**T likely contributing to her symptoms?

A. Diclofenac
B. Glucosamine
C. Irbesartan
D. Paracetamol
E. Thyroxine

Answer:
A. Diclofenac

Q43

References:

Reference 1: Ohlsson O. New insights and challenges in microscopic colitis. Therap Adv Gastroenterol 2015;8(1): 37–47. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC4265085 [Accessed February 2023].

Reference 2: Balagoni H. Microscopic colitis (collagenous and lymphocytic colitis). Medscape. US: Medscape, 2021. Available at https://emedicine.medscape.com/article/180664-overview [Accessed February 2023].

Reference 3: Ceders Cinai. Lymphocytic colitis. Los Angeles, CA: Ceders Cinai Medical Center, date unknown. Available at www.cedars-sinai.org/health-library/diseases-and-conditions/l/lymphocytic-colitis.html [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 47% of candidates.

Several medications, particularly nonsteroidal anti-inflammatory drugs, can induce lymphocytic colitis. Nonsteroidal anti-inflammatory drugs are the most implicated, followed by proton pump inhibitors and selective-serotonin reuptake inhibitors. While many other medications may cause diarrhoea as a side effect, they have not been identified as causing the microscopic changes associated with lymphocytic colitis. Glucosamine has been shown to attenuate intestinal inflammation in some mice studies.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q44

Peta Mason, aged 22 years, has had an ongoing itchy rash on both hands for the past two months (see image). She started her clinical placements for her Bachelor of Nursing degree three months ago and finds the rash is interfering with her work. She tried over-the-counter topical hydrocortisone 1% cream topically twice daily a few weeks ago, with no significant improvement.

Image: dermnetnz.org

What is the **MOST** appropriate diagnosis?

A. Chronic mucocutaneous candidiasis
B. Discoid eczema
C. Hyperkeratotic hand dermatitis
D. Irritant dermatitis
E. Latex contact urticaria
F. Psoriasis
G. Staphylococcal superinfection
H. Tinea manuum

Answer:
D. Irritant dermatitis

Q44

References:

Reference 1: Oakley A. Hand dermatitis. NZ: Dermnet NZ, 2018. Available at www.dermnetnz.org/topics/hand-dermatitis [Accessed February 2023].

Reference 2: Tate B. Irritant contact dermatitis (ICD). St Leonards, NSW: Australasian College of Dermatologists, 2019. Available at www.dermcoll.edu.au/atoz/irritant-contact-dermatitis-icd [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 87% of candidates.

Peta is experiencing dermatitis, most probably irritant dermatitis related to her nursing/hand washing. Hydrocortisone 1% is inadequate to treat dermatitis on the hands, and a more potent steroid should be used as initial treatment. She will also need to use emollients and avoid irritants.

Hyperkeratotic hand dermatitis is a chronic, dry, palmar non-inflammatory dermatitis. Latex contact urticaria, as with other types of urticaria, presents as smooth, slightly elevated papules or plaques (wheals) that are erythematous.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q45

Jack Cruise, aged 22 years, is brought to your rural emergency department by his sister, Molly, because Jack has difficulty breathing. Molly states he began gasping for air while chopping wood about an hour ago. Jack indicates it hurts to take a deep breath. On examination, Jack is pale, his temperature is 37.2°C, heart rate 135/min regular, blood pressure 100/52 mmHg and respiratory rate 28/min. There is prominence of his jugular veins, hyper-resonance to percussion and absent breath sounds over the left lung field. His body mass index is 21 kg/m^2.

What is the **MOST** appropriate next step?

A. Arrange urgent chest X-ray
B. Electrocardiogram
C. Perform urgent needle thoracostomy
D. Salbutamol 100 mcg 12 actuations inhaled via metered-dose inhaler and spacer
E. Urgent arterial blood gas analysis

Answer:
C. Perform urgent needle thoracostomy

Q45

References:

Reference 1: Light RW. Pneumothorax. MSD Manual Professional Version. Kenilworth, NJ: MSD, 2019. Available at www.msdmanuals.com/en-au/professional/pulmonary-disorders/mediastinal-and-pleural-disorders/pneumothorax [Accessed February 2023].

Reference 2: Daley BJ. Pneumothorax: Practice essentials. US: Medscape, 2020. Available at http://emedicine.medscape.com/article/424547-overview [Accessed February 2023].

Reference 3: Sharma R. Tension pneumothorax. Australia: Radiopaedia, 2022. Available at https://radiopaedia.org/articles/tension-pneumothorax?lang=gb [Accessed February 2023].

Reference 4: Weiser TG. Pneumothorax (tension). MSD Manual Professional Version. Kenilworth, NJ: MSD, 2020. Available at www.msdmanuals.com/professional/injuries-poisoning/thoracic-trauma/pneumothorax-tension?query=tension%20pneumothorax [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 90% of candidates.

Jack has signs and symptoms consistent with a spontaneous pneumothorax. A primary spontaneous pneumothorax occurs without a known eliciting event. Risk factors include smoking, tall and thin body habitus, pregnancy, Marfan syndrome and familial pneumothorax. They occur most commonly in the 20–30-year age group. Both spontaneous and traumatic pneumothorax can evolve into a tension pneumothorax. In this case, the sign among those supplied that would point to a tension pneumothorax developing is the presence of hypotension. Other potential signs are cyanosis and distended neck veins.

A tension pneumothorax occurs when intrapleural air accumulates progressively, resulting in haemodynamic compromise. It is a life-threatening occurrence requiring both rapid recognition and urgent treatment to avoid a cardiopulmonary arrest. If a patient is hemodynamically unstable with suspected tension pneumothorax, intervention must not be withheld to await imaging.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q46

Debbie Johnstone, aged 57 years, presents accompanied by her husband, Tony. Debbie says she is having trouble sleeping. Six weeks ago, Debbie narrowly escaped a large fire in the kitchen of the restaurant she manages. Two kitchen staff are still receiving treatment for severe burns. Debbie is having difficulty sleeping because she cannot stop thinking about the fire. She wakes up during the night distressed by nightmares. Tony says she has seemed very irritable and jumpy since the incident. Debbie has not returned to work, despite the restaurant re-opening a week ago. She has done trauma-focused cognitive behavioural therapy with a psychologist, but her symptoms are not improving. She would like to know what else she can try.

What is the **MOST** appropriate next step in management?

A. Amitriptyline 50 mg at night
B. Dialectical behavioural therapy
C. Duloxetine 30 mg daily
D. Encourage Debbie to return to work
E. Eye movement desensitisation and reprocessing therapy
F. Psychological debriefing
G. Silexan 80 mg at night
H. Temazepam 10 mg at night

Answer:
E. Eye movement desensitisation and reprocessing therapy

Q46

References:

Reference 1: Therapeutic Guidelines. Psychotropic-mental health disorders following trauma exposure West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=mental-health-disorders-following-trauma&guidelineName=Psychotropic#toc_d1e90 [Accessed February 2023].

Reference 2: US Department of Veterans Affairs, National Center for PTSD. Acute stress disorder. Washington: DVA, 2019 Available at www.ptsd.va.gov/professional/treat/essentials/acute_stress_disorder.asp#four [Accessed February 2023].

Reference 3: Australian Centre for Posttraumatic Mental Health. Australian guidelines for the treatment of acute stress disorder and posttraumatic stress disorder: Guidelines summary. Melbourne: ACPHM, 2013. Available at www.aci.health.nsw.gov.au/__data/assets/pdf_file/0005/212972/ACPMH_Guidelines_Summary.pdf [Accessed February 2023].

Reference 4: Phoenix Australia. Australian guidelines for the treatment of acute stress disorder, posttraumatic stress disorder and complex PTSD: Executive summary. Carlton, Vic: Phoenix Australia, 2020. Available at https://www.phoenixaustralia.org/australian-guidelines-for-ptsd/ [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 44% of candidates.

Post-traumatic stress disorder is diagnosed when symptoms persist for longer than one month after a traumatic event. Symptoms of re-experience, heightened arousal, avoidance and dissociative symptoms such as detachment or being in a daze, and depersonalisation are common.

In the first few days following a traumatic event, intervention should be limited to provision of practical and emotional support. Structured interventions such as psychological debriefing should not be offered on a routine basis as clinical studies have shown they are associated with a higher incidence of negative outcomes.

Effective psychological interventions for both acute stress disorder and post-traumatic stress disorder are trauma-focused psychological interventions, including trauma-focused cognitive behavioural therapy and eye movement desensitisation and reprocessing.

Currently, the recommended first-line treatment for post-traumatic stress disorder is trauma-focused psychological therapy, with pharmacological treatment only being considered as a second-line option. If drug therapy is used, selective serotonin reuptake inhibitors should be started initially.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q47

Fiona Fox, aged 50 years, has had a sore, stiff left shoulder for the past four months. The pain is dull and aching and involves her entire shoulder. It is often worse at night. Over the past few weeks, she has found that the pain has been improving but the stiffness seems to be worsening. She expresses frustration at being unable to do anything with her left shoulder. She has not had an injury to the shoulder in the past. She has type 2 diabetes, which has been well controlled with diet and exercise, but you note her most recent HbA1c performed yesterday is **8.1%*** (normal range < 6.0%).

Which examination finding would **MOST** support the provisional diagnosis?

A. Both active and passive ranges of motion of the glenohumeral joint are reduced
B. Diminished biceps reflex
C. Painful arc on abduction between 45 and 135 degrees
D. Positive apprehension test
E. Tenderness over acromioclavicular joint

Answer:
A. Both active and passive ranges of motion of the glenohumeral joint are reduced

Q47

References:

Reference 1: Brun SP. Idiopathic frozen shoulder. Aust J Gen Pract 2019;8(11):757–61. Available at www1.racgp.org.au/ajgp/2019/november/idiopathic-frozen-shoulder [Accessed February 2023].

Reference 2: DynaMed. Adhesive capsulitis of shoulder. US: DynaMed, date unknown. Accessed 10 April 2020. Available at www.dynamed.com/condition/adhesive-capsulitis-of-shoulder#GUID-CF5CC12B-87E7-4286-A8D0-F3A9097B2F10 [Accessed February 2023].

Reference 3: Roberts JR. Adhesive capsulitis (frozen shoulder). US: Medscape, 2020. Accessed 10 April 2020. Available at https://emedicine.medscape.com/article/1261598-overview [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 87% of candidates.

The diagnosis of adhesive capsulitis should be suspected in this woman aged >40 years, particularly as she has underlying diabetes. Her symptoms and signs are consistent with adhesive capsulitis, including insidious onset of diffusely painful shoulder with restricted movements in all planes over a period of a few months. The examination finding that would support this provisional diagnosis is a reduction in active and passive range of motion of the shoulder. A rotator cuff tendinopathy (resulting in a painful arc) is a plausible differential, but pain is generally related to overhead activities rather than a global reduction in movement. The apprehension test is to assess the stability of the shoulder joint, and, in this case, there is no history of trauma, dislocation or overuse to suggest instability. The acromioclavicular joint may be tender from injury, overuse or osteoarthritis. In this case there is no history of injury, and the patient is quite young for osteoarthritis.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q48

Angela Brookes, aged 26 years, is brought to your rural hospital by her boyfriend, James, after she was found walking the streets naked at 1 am. Angela appears to be frightened and is talking very rapidly, pacing the room. She is oriented to person, place and time, but cannot explain why she was naked.

James reports that for the past three weeks, Angela has been very irritable and has not been sleeping much. He says that she has been convinced that she has special healing abilities, which has been creating discord in her work as a local physiotherapist. She has been waking most days at about 4 am and working on a research project, as well as fervently cleaning their house. James and Angela both deny any illicit drug use.

What is the **MOST** appropriate provisional diagnosis?

A. Bipolar I disorder
B. Bipolar II disorder
C. Borderline personality disorder
D. Delusional disorder
E. Schizophrenia

Answer:
A. Bipolar I disorder

Q48

References:

Reference 1: Black Dog Institute 2018. What is bipolar disorder? Black Dog Institute, 2018. Available at www.blackdoginstitute.org.au/resources-support/bipolar-disorder/ [Accessed February 2023].

Reference 2: Hurley K. Schizophrenia: DSM 5 definition. Psycom. 13 February 2018. Available at www.psycom.net/schizophrenia-dsm-5-definition [Accessed February 2023].

Reference 3: Harvard Health Publishing. Delusional disorder. Boston, MA: Harvard Medical School, 2019. Available at www.health.harvard.edu/a_to_z/delusional-disorder-a-to-z [Accessed February 2023].

Reference 4: National Center for Biotechnology Information, National Library of Medicine. DSM-5 changes: Implications for child serious emotional disturbance. Bethesda, MD: National Library of Medicine, date unknown. Available at www.ncbi.nlm.nih.gov/books/NBK519712/table/ch3.t7 [Accessed February 2023].

Reference 5: Zimmerman M. Borderline personality disorder (BPD). MSD Manual Professional Version. Kenilworth, NJ: MSD, 2021. Available at www.msdmanuals.com/en-au/professional/psychiatric-disorders/personality-disorders/borderline-personality-disorder-bpd [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 74% of candidates.

Angela is experiencing a first episode of psychotic mania, with reduced need for sleep, disinhibition, irritable behaviour and mood-congruent grandiose delusions (of 'special abilities'), which are characteristic of a manic episode (ie bipolar I disorder). She fulfils the DSM-5 criteria for a manic episode.

Bipolar II disorder is incorrect, as this episode is more severe than a hypomanic episode, and because there are psychotic features, the episode is by definition manic. Schizophrenia generally presents with flattened or restricted affect, rather than euphoric or irritable affect or mood, along with psychotic symptoms of delusions and hallucinations, and disorganised speech or behaviour. There is also usually a prodromal period of some years, which does not fit with Angela's acute presentation. Borderline personality disorder is more pervasive and is not in keeping with this acute presentation. Delusional disorder does not have associated mood or sleep disturbances.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q49

Mary Chan, aged 56 years, returns for results of blood tests that you ordered last week. Mary had a fasting blood glucose level of **7.2 mmol/L*** (normal range 3.0–5.4) two years ago. Since that time, she has worked overseas, has begun a regular exercise program, and has consulted a dietician leading to a loss of 5 kg of weight. Blood tests from last week showed a fasting blood glucose level of **7.0 mmol/L*** (normal range 3.0-5.4) and HbA1c **7.4%*** (normal range <6%).

On examination, Mary's blood pressure is 120/66 mmHg. Her body mass index is 28 kg/m^2.

What is the **MOST** appropriate immediate management?

A. Arrange oral glucose tolerance test
B. Continue with dietary and exercise modifications and review in three months
C. Gliclazide modified release 30 mg daily
D. Metformin slow-release 500 mg daily
E. Review Mary in six months following repeat HbA1c

Answer:
D. Metformin slow-release 500 mg daily

Q49

References:

Reference 1: Olatunosun ST. Glucose tolerance guidelines. US: Medscape, 2020. Available at https://emedicine.medscape.com/article/119020-guiidelines [Accessed February 2023].

Reference 2: Diabetes Australia. Canberra, Diabetes Australia, 2020. Available at www.diabetesaustralia.com.au [Accessed February 2023].

Reference 3: The Royal Australian College of General Practitioners. Management of type 2 diabetes: A handbook for general practice. Defining and diagnosing type 2 diabetes. East Melbourne, Vic: RACGP, 2020. Available at www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/diabetes/defining-and-diagnosing-type-2-diabetes [Accessed February 2023].

Reference 4: The Royal Australian College of General Practitioners. General practice management of type 2 diabetes: 2016–18. East Melbourne, Vic: RACGP, 2016. Available at www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Guidelines/Diabetes/General-practice-management-of-type-2-diabetes_1.pdf [Accessed February 2023].

Reference 5: Phillips PJ. Oral glucose tolerance testing. Aust Fam Physician 2021;41(6): 391–93. Available at www.racgp.org.au/afp/2012/june/oral-glucose-tolerance-testing [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 82% of candidates.

The question requires candidates to recognise that the patient has type 2 diabetes that now needs treatment with metformin because her HbA1c is not to target. Sufficient information is given in the question to diagnose Mary with type 2 diabetes; hence an oral glucose tolerance test is unnecessary and will not offer any further information. Further lifestyle modification with a dietitian and exercise is unlikely to be of benefit as Mary has already attended a dietitian and has managed to lose 5 kg. Gliclazide is a sulfonylurea that remains a second-line agent after metformin. Arranging to review Mary in six months with a repeat HbA1c is inappropriate as her current results are not to target and, without the addition of metformin, her diabetic control is likely to worsen over this period.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q50

James Bradshaw, aged 38 years, would like help to abstain from alcohol. He normally drinks 20 standard drinks per day but has just come out of a drug and alcohol detoxification program and has not consumed any alcohol for two weeks. He is concerned he may start drinking again and would like medication to help him remain abstinent from alcohol. His only current medication is methadone 80 mg daily for opiate addiction that is currently under control.

What is the **MOST** appropriate pharmacological management?

A. Acamprosate 666 mg three times daily
B. Diazepam 5 mg three times daily
C. Disulfiram 250 mg daily
D. Increase methadone to 100 mg daily
E. Naltrexone 50 mg daily

Answer:
A. Acamprosate 666 mg three times daily

Q50

References:

Reference 1: Haber PS, Riordan BC, Winter DT, et al. New Australian guidelines for the treatment of alcohol problems: An overview of recommendations. Med J Aust 2021;215(7 Suppl):S1–S32. Available at www.mja.com.au/system/files/2021-09/Sup_215_7_4%20Oct.pdf [Accessed February 2023].

Reference 2: Winslow B, Onysko M, Herbert M. Medications for alcohol use disorder. Am Fam Physician 2016;93(6):457–65. Available at www.aafp.org/afp/2016/0315/p457.html [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Addiction medicine: Alcohol and other drug problems. West Melbourne, Vic: Therapeutic Guidelines, 2013. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=alcohol-drug-problems&guidelineName=Psychotropic&topicNavigation=navigateTopic#toc_d1e103 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 65% of candidates.

This case assesses familiarity with medications to help maintain alcohol abstinence. Alcohol misuse is a common and serious issue presenting to Australian general practice. As this patient is at risk of drinking again, the most appropriate medication to prescribe is acamprosate.

Naltrexone is inappropriate as it will interact with this patient's methadone. The consumption of alcohol while taking disulfiram results in raised blood acetaldehyde concentrations and potentially dangerous adverse effects. While disulfiram can give good results for highly motivated, physically fit individuals who are capable of compliance with an abstinence-based program, it requires close monitoring/supervision, and is very dangerous when combined with alcohol. Given James has indicated that he is concerned he may start drinking again, this is not the best choice of medication. Patients drinking when using disulfiram may experience sweating, palpitations, tachycardia and dyspnoea. In some instances, death has occurred from cardiorespiratory failure. Although diazepam may be used for acute alcohol withdrawal, it has no place in assisting with the maintenance of abstinence. Increasing his methadone dose would not address James's long-term alcohol addiction.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q51

Catherine Collins, aged 60 years, is a new patient presenting for a pertussis vaccination because she is about to become a grandmother. Catherine's blood pressure today is 174/100 mmHg. She tells you that her previous general practitioner said she has white coat hypertension.

You organise appropriate investigations.

One week later Catherine returns for her results. Her 24-hour ambulatory blood pressure monitoring reports an average daytime blood pressure of 154/92 mmHg, and her night-time average is 142/88 mmHg. Her lipid profile is shown in the table below. Her other investigations reveal no abnormalities. Her absolute cardiovascular risk is calculated at 6%.

Test	**Result**	**Normal range**
Total cholesterol	4.2 mmol/L	<5.6
High-density lipoprotein	1.2 mmol/L	>1.0
Low-density lipoprotein	**2.7 mmol/L***	<2.5
Triglycerides	1.4 mmol/L	<1.5

What is the **MOST** appropriate next step?

A. Atorvastatin 10 mg daily
B. Hydrochlorothiazide 12.5 mg once daily
C. Metoprolol 50 mg twice daily
D. Perindopril 2.5 mg once daily
E. Provide lifestyle advice and review in two months

Answer:
E. Provide lifestyle advice and review in two months

Q51

References:

Reference 1: The Royal Australian College of General Practitioners. Section 8.2: Blood pressure. In: Guidelines for preventive activities in general practice. 9th edn. East Melbourne, Vic: RACGP, 2016; p. 87–89. Available at www.racgp.org.au/download/Documents/Guidelines/Redbook9/17048-Red-Book-9th-Edition.pdf [Accessed February 2023].

Reference 2: National Heart Foundation of Australia. Guideline for the diagnosis and management of hypertension in adults. Melbourne: National Heart Foundation of Australia, 2016. Available at www.heartfoundation.org.au/getmedia/c83511ab-835a-4fcf-96f5-88d770582ddc/PRO-167_Hypertension-guideline-2016_WEB.pdf [Accessed February 2023].

Reference 3: Therapeutic Guidelines. Cardiovascular: Blood pressure reduction. West Melbourne, Vic: Therapeutic Guidelines, 2020. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=blood-pressure-reduction&guidelineName=Cardiovascular#toc_d1e47 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 70% of candidates.

The guidelines are clear that the management of patients with hypertension should also consider absolute cardiovascular risk and/or evidence of end-organ damage. Treatment strategies for individuals at high risk of a cardiovascular event may differ from those at low absolute cardiovascular disease risk despite similar blood pressure readings. This patient is low risk at 6% and has no other obvious cause for her hypertension. According to the guidelines, she should be provided with lifestyle advice and be reviewed in two months. All other pharmacotherapy options are incorrect as an initial treatment option for this patient.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q52

John Gerard, aged 68 years, has had increasing shortness of breath on exertion over the past few months. He has stopped going to his usual aqua aerobics class as he is finding it too difficult. He ceased smoking at the age of 45 years and has a 25 pack-year history. He is currently taking tiotropium 18 mcg inhaled once daily and salbutamol 100 mcg two actuations as required. Spirometry is as follows.

Test	**Actual (pre-bronchodilator)**	**Predicted**	**% Predicted (pre-bronchodilator)**	**% Change (post-bronchodilator)**
Forced expiratory volume in one second (L)	1.70	2.35	72.3	7.60
Forced vital capacity (L)	2.57	3.36	76.5	2.70
Forced expiratory volume in one second/forced vital capacity (%)	66.16	71.33	92.7	3.25

What is the **MOST** appropriate additional pharmacological management?

A. Aclidinium-formoterol 340 mcg/12 mcg inhaled twice daily
B. Doxycycline 100 mg twice daily for 14 days
C. Fluticasone propionate 250 mcg inhaled twice daily
D. Indacaterol 150 mcg inhaled once daily
E. Ipratropium 21 mcg, two actuations inhaled when required
F. Montelukast 10 mg daily
G. Nedocromil 4 mg inhaled four times daily
H. Prednisolone 50 mg daily for seven days

Answer:
D. Indacaterol 150 mcg inhaled once daily

Q52

References:

Reference 1: Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, McNamara R, Zwar N, Dabscheck E. The COPD-X Plan: Australian and New Zealand Guideline for the management of Chronic Obstructive Pulmonary Disease 2021. Version 2.64, June 2021. Available at https://copdx.org.au/copd-x-plan/ [Accessed February 2023]

Reference 2: Lung Foundation Australia 2021. COPD Management. Milton, QLD. Available at https://lungfoundation.com.au/health-professionals/conditions/copd/management/ [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 58% of candidates.

This question tests knowledge of the diagnosis and second-line management of chronic obstructive pulmonary disease. John's results indicate a mild obstructive impairment (FEV1 60–80% predicted) with no significant improvement in airflow after bronchodilator therapy. His symptoms and results are therefore consistent with a diagnosis of mild chronic obstructive pulmonary disease. As he is experiencing a deterioration in his symptoms despite already taking tiotropium (a long-acting anti- muscarinic), he requires the addition of a long-acting beta 2 agonist such as indacaterol.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q53

Kayla Bethaniel, aged 20 months, presents with her mother, Tracey, after seeming unwell for the past two weeks with an occasional runny nose. Tracey has also noticed that Kayla has prominent lumps in her neck. Kayla is up to date with her immunisations. On examination, her temperature is 37.4°C, heart rate 86/min regular, and she has bilateral, slightly tender posterior cervical lymph nodes each less than 1 cm in diameter. The overlying skin is normal. COVID-19 has been definitively excluded.

What is the **MOST** appropriate next step?

A. Amoxicillin-clavulanate 22.5 mg/3.2 mg/kg (max 875 mg/125 mg) twice daily for five days
B. Full blood count
C. Mumps serology
D. Return for review if symptoms worsen
E. Ultrasound of neck

Answer:
D. Return for review if symptoms worsen

Q53

References:

Reference 1: The Royal Children's Hospital Melbourne. Clinical practice guidelines: Cervical lymphadenopathy. Parkville, Vic: RCH, 2021. Available at www.rch.org.au/clinicalguide/guideline_index/Cervical_lymphadenopathy [Accessed February 2023].

Reference 2: Smith A, Cronin M. Paediatric neck lumps: 'An approach for the primary physician'. Aust J Gen Pract 2019;48(5):289–93. Available at www1.racgp.org.au/ajgp/2019/may/paediatric-neck-lumps [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 54% of candidates.

Cervical lymphadenopathy is common and may be found in more than one-third of otherwise healthy children. It is most commonly caused by viral upper respiratory tract infections. After an upper respiratory tract infection, enlarged reactive lymph nodes may persist for weeks to months. Observation and reassurance without investigation is usually appropriate for the well-appearing child with cervical lymphadenopathy. If red flags (eg weight loss, night sweats, generalised lymphadenopathy, lymph node >3cm) are present, further investigations are indicated. Acute bacterial lymphadenitis is characterised by enlarged nodes, which are tender, usually unilateral and may be fluctuant.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q54

Brian Henderson, aged 42 years, has had gradually worsening symptoms of fatigue, generalised weakness, nausea, anorexia and weight loss over the past year. He has also noticed a dark colouring within his axillae bilaterally. On examination, his blood pressure is 95/50 mmHg and his random blood sugar level is 3 mmol/L.

Investigations are completed and results are as follows.

Adrenocorticotropic hormone **19 pmol/L*** (normal range <10).

Serum chemistry

Test	**Result**	**Normal range**
Sodium	**130 mmol/L***	135–145
Potassium	**5.4 mmol/L***	3.5–5.2
Chloride	103 mmol/L	95–110
Bicarbonate	25 mmol/L	22–32
Urea	3.7 mmol/L	2.5–8.0
Creatinine	72 µmol/L	45–90
Estimated glomerular filtration rate	99 mL/min/1.73 m^2	>90

Which finding on investigation would **MOST** likely confirm the provisional diagnosis?

A. Anti-nuclear antibody positive
B. Creatinine kinase titre greater than five times normal range
C. Elevated anti-citrullinated protein antibody
D. High mean corpuscular volume
E. High thyroid-stimulating hormone
F. Low early morning cortisol
G. Low ferritin
H. Low vitamin B12

Answer:
F. Low early morning cortisol

Q54

References:

Reference 1: O'Connell S, Siafarikas A. Addison disease: Diagnosis and initial management. Aust Fam Physician 2010;39(11):834–37. Available at www.racgp.org.au/afp/2010/november/addison-disease [Accessed February 2023].

Reference 2: Pathology Tests Explained. Adrenal insufficiency and Addison's disease. Alexandria, NSW: Pathology Tests Explained, 2018. Available at https://pathologytestsexplained.org.au/learning/index-of-conditions/addisons-disease [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 97% of candidates.

Hyperpigmentation, fatigue, weakness, weight loss, gastrointestinal upset and anorexia are common symptoms of Addison disease. It can also cause hypotension, hyperkalemia and hyponatraemia. The primary adrenal insufficiency results in a lack of cortisol being produced by the adrenal gland cortex; therefore, adrenocorticotrophic hormone increases due to the feedback mechanism. The most likely finding on investigation would be a low early morning cortisol level. While low ferritin and low vitamin B12 levels may cause fatigue, they would not explain the elevation in adrenocorticotrophic hormone nor the electrolyte disturbance.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q55

Oliver James, aged 2 years, was brought in by his mother, Amanda, yesterday to your rural emergency department with a runny nose and barking cough that he had had for three days. You prescribed prednisolone 1 mg/kg.

Today he returns to the emergency department as his symptoms have worsened, he is mildly agitated, and he now has persistent stridor at rest. On examination, his temperature is 37.4°C, heart rate 190/min, respiratory rate 58/min, oxygen saturation 95% on room air, and there are marked chest wall retractions. You administer dexamethasone 0.3 mg/kg (max 12 mg). COVID-19 has been definitively excluded.

What is the **MOST** appropriate next step?

A. Adrenaline 0.5 mL/kg of 1:1000 (max 5 mL) nebulised
B. Amoxicillin 15 mg/kg (max 500 mg) three times daily for seven days
C. Chest X-ray
D. Establish intravenous access
E. Nasopharyngeal aspirate for respiratory viruses
F. Oseltamivir 30 mg twice daily for five days
G. Oxygen 15 L/min via non-rebreather mask
H. Salbutamol 100 mcg six puffs inhaled via spacer

Answer:
A. Adrenaline 0.5 mL/kg of 1:1000 (max 5 mL) nebulised

Q55

References:

Therapeutic Guidelines. Respiratory: Croup. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=croup&guidelineName=Respiratory&topicNavigation=navigateTopic#toc_d1e75 [Accessed February 2023].

Royal Children`s Hospital Melbourne. Clinical practice guidelines: Croup (laryngotracheobronchitis). Parkville, Vic: RCH, 2020. Available at www.rch.org.au/clinicalguide/guideline_index/Croup_Laryngotracheobronchitis [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 89% of candidates.

Croup (acute laryngotracheobronchitis) presents with a coryzal prodrome, inspiratory stridor, a harsh barking cough and variable airway obstruction due to inflammatory oedema within the subglottis. It is most common in children aged 1–3 years and has a duration of 2–5 days.

No investigations are needed in croup, including nasopharyngeal aspirate, X-rays and blood tests. These may cause distress to the child and worsening of symptoms. This child is demonstrating signs of severe croup, therefore the use of dexamethasone and nebulised adrenaline is indicated.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q56

Jane Fox, aged 62 years, is concerned about a rash that has appeared on both of her lower legs over the past week. The rash is not itchy but has been spreading. She has type 2 diabetes, mild renal impairment and gout. Her diabetes is well controlled with metformin sustained release 1 g daily and she recently began taking allopurinol 50 mg daily and colchicine 500 mcg daily for gout prophylaxis. On examination, her temperature is 37.2°C, heart rate 89/min and blood pressure 138/75 mmHg. There is a diffuse rash on both lower legs that is non-blanching (see image).

What is the **MOST** appropriate provisional diagnosis?

A. Bullous pemphigoid
B. Cutaneous vasculitis
C. Disseminated intravascular coagulation
D. Erythema multiforme
E. Erythema nodosum
F. Henoch–Schonlein purpura
G. Lichen simplex chronicus
H. Livedo reticularis
I. Meningococcal septicaemia
J. Myxoedema
K. Pemphigus vulgaris
L. Urticaria

Answer:
B. Cutaneous vasculitis

Q56

References:

Reference 1: Stanway A, Oakley A. Cutaneous vasculitis. NZ: DermNet NZ, 2016. Available at https://dermnetnz.org/topics/cutaneous-vasculitis [Accessed February 2023].

Reference 2: Lee A. Skin manifestations of systemic disease. Aust Fam Physician 2009;38(7):498–505. Available at www.racgp.org.au/download/Documents/AFP/2009/July/200907lee.pdf [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 61% of candidates.

The patient presents with a rash with the classic appearance of cutaneous vasculitis. It has a purplish colour and is non-blanching, consistent with multiple petechiae. Although some of the distractors might also present with a petechial or purpuric rash, they do not fit the clinical picture. Henoch-Schönlein purpura is predominantly a disease of children aged 3–15 years. This patient is afebrile and well, so meningococcal septicaemia is unlikely. The rash is itchy, so although urticaria can sometimes present with a petechial- looking rash, this is not urticaria. Livedo reticularis has a lace-like cyanotic pattern.

Questions remain correct at the time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q57

Ellen Davies, aged 34 years, is concerned about the appearance of her nails (see image). Ellen is on maternity leave at present, breastfeeding her 3-month-old baby. She had no complications with her pregnancy or delivery. Her periods have not yet returned.

What is the **MOST** appropriate next step to manage her nail condition?

A. Betamethasone dipropionate 0.05% ointment topically daily
B. Biotin-zinc-selenium 10 000 mcg/25 mg/200 mcg daily
C. Ferrous sulfate 325 mg daily
D. Miconazole nitrate 2% cream topically three times daily
E. Terbinafine 250 mg daily for six weeks

Answer:
A. Betamethasone dipropionate 0.05% ointment topically daily

Q57

References:

Reference 1: Oakley A, Gomez J. Paronychia. NZ: Dermnet NZ, 2017. Available at https://dermnetnz.org/topics/paronychia [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Dermatology: Nail disorders – Chronic paronychia. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Dermatology&topicfile=nail-disorders&guidelinename=Dermatology&sectionId=toc_d1e428#toc_d1e379 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 45% of candidates.

This is a case of chronic paronychia. Chronic paronychia is an inflammatory disorder of the nail folds that results in tenderness, redness and inflammation. Nail dystrophy is a common complication; the nail plate becomes thickened and distorted, often with transverse ridges. It has a multifactorial aetiology that usually involves repeated exposure to a moist environment and irritants. This leads to the cuticle separating from the nail plate, causing pockets that can accumulate irritants, fungi and/or bacteria. Management requires the hands to remain dry and use of a potent topical corticosteroid. Topical and oral antifungal agents are not indicated in this case. Oral iron supplements will not treat this condition.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q58

Bernadette Brown, aged 45 years, has had left heel pain for the past six weeks. Three months ago she started running in an effort to lose weight. Her heel does not hurt while she is running but she finds that the pain occurs after her run. The pain is worse with the first few steps after getting out of bed in the morning but subsides after a few minutes of walking. She is wearing her running shoes at home because walking barefoot aggravates the pain.

What physical examination finding **MOST** supports the provisional diagnosis?

A. Pain on passive plantar flexion and compression of the ankle with patient prone (posterior impingement test)
B. Palpation of crepitus over Achilles tendon during active plantar flexion
C. Pain and a ‘click’ sound (Mulder’s click) on squeezing the metatarsal heads
D. Tingling on tapping over tibial nerve (Tinel’s sign)
E. Tenderness on palpating medial process of calcaneal tuberosity

Answer:
E. Tenderness on palpating medial process of calcaneal tuberosity

Q58

References:

Reference 1: Rio E, Mayes S, Cook J. Heel pain: A practical approach. Aust Fam Physician 2015;44(3);96–101. Available at www.racgp.org.au/afp/2015/march/heel-pain-a-practical-approach [Accessed February 2023].

Reference 2: DynaMed. Plantar fasciitis. Record no. T116406. Ipswich, MA: EBSCO Information Services, 1995. Available at www.dynamed.com/condition/plantar-fasciitis#EXTREMITIESANC_1177309159 [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 72% of candidates.

The question tests the candidate's knowledge of physical examination findings to distinguish between the different causes of foot pain in order to arrive at the correct diagnosis. This patient has classic symptoms of plantar fasciitis. Palpating the medial process of the calcaneal tuberosity where the plantar fascia attaches will elicit tenderness. Palpation of crepitus of the Achilles tendon during active plantar flexion is consistent with Achilles paratendinitis. The metatarsal squeeze test is positive in Morton's neuroma. Tinel's test of the tibial nerve is positive in tarsal tunnel syndrome. The posterior impingement test is a test for posterior ankle impingement.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q59

Shauna O'Malley, aged 17 years, asks your advice about a lesion on the back of her left arm (see images). It does not bother her, but her boyfriend asked her to get it checked.


Image: dermnetnz.org


Image: dermnetnz.org

What is the **MOST** appropriate management?

A. 2 mm punch biopsy of area of deepest pigmentation
B. Cryotherapy with liquid nitrogen
C. Excision biopsy with 2 mm margins
D. Imiquimod 5% cream topically daily, five days per week for six weeks
E. Provide reassurance that no further treatment is required

Answer:
E. Provide reassurance that no further treatment is required

Q59

References:

Reference 1: Oakley A, Eshraghi A. Blue naevus. NZ: Dermnet NZ, 2018. Available at https://dermnetnz.org/topics/blue-naevus [Accessed February 2023].

Reference 2: Friedman EB, Scolyer RA, Thompson JF. Management of pigmented skin lesions in childhood and adolescence. Aust J Gen Pract 2019;48(8):539–44. Available at www1.racgp.org.au/ajgp/2019/august/management-of-pigmented-skin-lesions-in-childhood [Accessed February 2023].

Feedback:

This question was used in the 2021.1 Applied Knowledge Test. It was answered correctly by 80% of candidates.

The lesion is a typical blue naevus and requires reassurance only. These lesions are more common in women, on the distal extremities, and usually first appear in childhood or adolescence. They are benign, stay unchanged throughout life and need no treatment (unless required for cosmetic reasons).

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q60

Amelia Duff, aged 11 years, is brought to see you by her father, Michael, because she has had several unexplained bruises and small spots on her arms and legs (see image) over the past three days. She had a mild cold about a week ago but has now completely recovered. You order an urgent full blood count, and the results are as follows.

Test	**Result**	**Normal range**
Haemoglobin	123 g/L	115–165
White cell count	4.2 x 10^9/L	4.0–11.0
Platelets	**85 x 10^9/L***	150–450

What is the **MOST** appropriate provisional diagnosis?

A. Acute myeloid leukaemia
B. Aplastic anaemia
C. B12 deficiency
D. Drug-induced thrombocytopenia
E. Fanconi anaemia
F. Hypersplenism
G. Immune thrombocytopenic purpura
H. Lymphoma
I. Thrombotic thrombocytopenic purpura
J. Type II von Willebrand disease

Answer:
G. Immune thrombocytopenic purpura

Q60

References:

Reference 1: The Royal Children's Hospital Melbourne. Clinical practice guidelines: Immune thrombocytopenic purpura. Parkville, Vic: RCH, 2020. Available at www.rch.org.au/clinicalguide/guideline_index/Immune_thrombocytopenic_purpura [Accessed February 2023].

Reference 2: Despotovic JM. Causes of thrombocytopaenia in children. UpToDate. Amsterdam: UpToDate/Wolters Kluwer, 2022. Available at www.uptodate.com/contents/causes-of-thrombocytopenia-in-children [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 93% of candidates.

This child is presenting with a classic petechial rash following a viral infection that is consistent with immune thrombocytopenic purpura, also known as idiopathic thrombocytopenic purpura. Immune thrombocytopenic purpura is characterised by isolated thrombocytopenia, a well child with no concerning features on clinical history or examination and an otherwise normal full blood count and blood film. It is a common cause of symptomatic thrombocytopenia in children. Severe cases of immune thrombocytopenic purpura require hospital admission and treatment with steroids and/or intravenous immunoglobulin.

This child's haemoglobin is normal, which essentially excludes aplastic anaemia, Fanconi's anaemia, severe B12 deficiency, thrombotic thrombocytopaenic purpura and disseminated intravascular coagulation. Her white cell count is normal, which excludes sepsis and acute myeloid leukaemia. She is not taking any medications, therefore this is not a drug-induced thrombocytopaenia.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q61

Willow Tone, aged 74 years, presents for a routine wound review. She has had a wound on her left lower leg for the past two months. The wound occurred after she scraped her skin against a chair leg, leading to a skin tear 4 × 5 cm in size. The wound has been slowly healing. Last week, there was more discharge from the wound, and she had a wound swab taken due to concerns about possible infection. She was advised to come into the clinic to have the wound reviewed.

Today the wound appears to be healing well. It is pink, healthy and granulating with no surrounding erythema and minimal discharge.

Her wound swab result is as follows.

Wound swab (microscopy, culture and sensitivity): Staphylococcus aureus +. Sensitive to flucloxacillin, cephalosporins and ciprofloxacin.

What is the **MOST** appropriate next step?

A. Add silver sulfadiazine topically to the wound under the appropriate non-adherent dressing
B. Continue non-adherent wound dressings
C. Flucloxacillin 250 mg four times daily
D. Perform nasal swab for methicillin-resistant Staphylococcus aureus carriage
E. Re-swab the wound today for microscopy, culture and sensitivities

Answer:
B. Continue non-adherent wound dressings

Q61

References:

Reference 1: Vic Health (2018) Skin tears management. Available at www.health.vic.gov.au/sites/default/files/migrated/files/collections/factsheets/s/scp-skin-tears-pdf.pdf [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Ulcer and wound management: Ulcer and wound infection. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=factors-affecting-ulcer-and-wound-healing#toc_d1e88 [Accessed February 2023].

Reference 3: Australian Prescriber. Strawberry Hills, NSW: NPS MedicineWise, 2000. Available at https://www.nps.org.au/australian-prescriber/articles/chronic-wound-management [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 80% of candidates.

The question tests the candidate's knowledge of wound management. Wounds are often colonised with bacteria, therefore swabbing the surface of a wound can result in a positive skin swab. In the absence of clinical signs of infection, a wound should ideally not be swabbed at all. If a swab is taken, antibiotic therapies are only required when concurrent infective symptoms or signs are also present (eg pain, swelling, heat, redness, pus, odour and/or fever).

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q62

John Baker, aged 35 years, an Aboriginal man, is rushed into your rural emergency department in Far North Queensland after being found lying on the ground, vomiting and in severe distress. John had been spear fishing at the beach earlier today. On examination he is groaning that he is in pain and clutching his back. He appears agitated and is sweating profusely. His heart rate 110/min regular and blood pressure 180/100 mmHg. There are no obvious wounds or injuries.

What is the **MOST** appropriate provisional diagnosis?

A. Abdominal aortic aneurysm
B. Acute pancreatitis
C. Acute renal failure
D. Alcohol intoxication
E. Blue bottle sting
F. Brown snake bite
G. Diabetic ketoacidosis
H. Irukandji syndrome
I. Opioid overdose
J. Stingray barb injury

Answer:
H. Irukandji syndrome

Q62

References:

Reference 1: Central Australian Rural Practitioners Association. Irukandji syndrome. In: CARPA standard treatment manual. 8th edn. Alice Springs, NT: Remote Primary Health Care Manuals, Centre for Remote Health, 2022; p. 51–52. Available at https://healthinfonet.ecu.edu.au/healthinfonet/getContent.php?linkid=592687&title=CARPA+standard+treatment+manual%3A+a+clinic+manual+for+primary+health+care+practitioners+in+remote+and+Indigenous+health+services+in+central+and+northern+Australia [Accessed April 2023].

Reference 2: Cadogan M. Irukandji syndrome (Carukia barnesi). Australasia: Life in the FastLane, 2020. Available at https://litfl.com/irukandji-syndrome [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 44% of candidates.

This question tests the candidate's ability to diagnose Irukandji syndrome, caused by a jellyfish sting. The initial sting is usually not felt and there is a short delay to the onset of systemic symptoms. Local signs, such as welts or dermal markings, are minimal or absent. Multiple systemic symptoms develop 30–120 minutes after contact with the jellyfish. These include a sense of impending doom, agitation, dysphoria, vomiting, generalised sweating and severe pain in the back, limbs or abdomen. Hypertension and tachycardia are common. Distractors include brown snake bite (hypotension, puncture wounds visible, habitat is dry not wet), stingray barb injury (immediate pain and injury at site of penetration), alcohol intoxication (hypotension, not associated with pain) and bluebottle stings (acute, localised pain, redness at site of sting).

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q63

Jaxon McDonald, aged 18 months, is brought to see you by his father Julian because he has had intermittent abdominal pain that started overnight. When the pain starts, Jaxon is inconsolable and holds his stomach and cries. Today he has had five episodes of pain that lasted 10–20 minutes and has been very fatigued. His appetite is reduced, but he is drinking adequate fluids. Last week he was unwell with gastroenteritis. He has not had any vomiting or diarrhoea in the past four days, and he has not passed any stool today. On examination, he appears lethargic. His temperature is 37.0°C and his abdomen is soft and non-tender. He vomits while you are examining him.

What is the **MOST** appropriate management?

A. Advise avoidance of lactose for six weeks
B. Coeliac serology
C. Give oral rehydration solution in clinic and observe for two hours
D. Poloxamer drops 0.5 mL three times daily
E. Reassurance that no further treatment is required apart from simple analgesia
F. Stool sample for viral polymerase chain reaction, microscopy and culture
G. Urgent transfer to emergency department
H. X-ray abdomen

Answer:
G. Urgent transfer to emergency department

Q63

References:

Reference 1: Chahine AA. Intussusception treatment & management. US: Medscape, 2018. Available at http://emedicine.medscape.com/article/930708-treatment#d11 [Accessed February 2023].

Reference 2: The Royal Children's Hospital Melbourne. Clinical practice guidelines: Intussusception. Parkville, Vic: RCH, 2019. Available at www.rch.org.au/clinicalguide/guideline_index/Intussusception [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 91% of candidates.

This child has the symptoms of a bowel obstruction. Although he does not have an abdominal mass or typical 'red-currant jelly' stool, a diagnosis of intussusception must be suspected. This condition represents a surgical emergency and urgent transfer to the nearest emergency department is required. It would be inappropriate to arrange outpatient imaging in this child due to the delays involved. Appropriate management of suspected intussusception is urgent surgical assessment.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q64

Sarah Matthews, aged 25 years, requests sexually transmitted infection testing. Over the past six weeks she has noticed an increasing malodorous grey, watery vaginal discharge. She has been in a sexual relationship with her current partner for six months. She has an etonogestrel 68 mg implant for contraception.

You arrange appropriate investigations. Her cervical screening test is negative and a high vaginal swab shows evidence of clue cells and cultures Gardnerella vaginalis.

What is the **MOST** appropriate management?

A. Acyclovir 200 mg five times daily for five days
B. Amoxicillin-clavulanic acid 875 mg/125 mg twice daily for five days
C. Azithromycin 1 g as a single dose
D. Boric acid 600 mg intravaginally daily for 14 days
E. Ceftriaxone 250 mg intramuscular injection plus doxycycline 100 mg twice daily for 10 days
F. Clotrimazole 1% intravaginally at night for six nights
G. Fluconazole 150 mg as a single dose
H. Metronidazole 0.75% intravaginally at night for five nights

Answer:
H. Metronidazole 0.75% intravaginally at night for five nights

Q64

References:

Reference 1: Girerd PH. Bacterial vaginosis workup. US: Medscape, 2021. Available at http://emedicine.medscape.com/article/254342-workup [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Antibiotic: Vulvovagintis. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Antibiotic&topicfile=bartonella-infections&guidelinename=auto&sectionId=c_ABG_Bacterial-vaginosis-in-adults_topic_2#c_ABG_Bacterial-vaginosis-in-adults_topic_2 [Accessed February 2023].

Reference 3: Australasian Sexual Health Alliance. Australian STI management guidelines for use in primary care: Bacterial vaginosis. Sydney: Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM), 2021. Available at www.sti.guidelines.org.au/sexually-transmissible-infections/infections-associated-with-sex/bacterial-vaginosis [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 90% of candidates.

The question requires candidates to identify the presentation of a young female with bacterial vaginosis. Bacterial vaginosis typically occurs when there is an underrepresentation of Lactobacillus in the vagina and an overgrowth of anaerobic bacteria including Garnerella vaginalis, Atopobium vaginae, Mobiluncus spp and/or Prevotella spp. Bacterial vaginosis is not sexually transmitted. Typical symptoms include a malodorous vaginal discharge that is thin white or greyish. A clinical diagnosis of bacterial vaginosis can be made when three out of four criteria are present:

1. The typical white/grey discharge is present on examination
2. The vaginal pH is elevated (>4.5)
3. Whiff test is positive
4. Clue cells are seen on microscopy

In this case the most appropriate treatment is metronidazole 0.75% intravaginally at night for five nights.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q65

Joshua Clarke, aged 6 months, is rushed into your clinic by his mother, Avril, because Joshua has a rash on his face that started 60 minutes ago. A few minutes after consuming peanut butter, Joshua started to rub at his eyes and she noticed a rash appearing on his face (see image). You observe several similar raised, erythematous lesions on his arms and legs. Joshua does not appear distressed and is breathing normally.

What is the **MOST** appropriate immediate management?

A. Adrenaline 10 mcg/kg intramuscular injection
B. Desloratadine syrup 1 mg
C. Dexchlorpheniramine syrup 1 mg
D. Hydrocortisone 5 mg/kg intravenous bolus
E. Promethazine 0.5 mg/kg (max 50 mg)

Answer:
B. Desloratadine syrup 1 mg

Q65

References:

Reference 1: Therapeutic Guidelines. Dermatology:Urticaria and angioedema- Acute and chronic urticaria. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Dermatology&topicfile=c_DMG_Considerations-in-the-use-of-topical-corticosteroids_topic_1&guidelinename=Dermatology&sectionId=c_DMG_Urticaria_topic_3#c_DMG_Urticaria_topic_3 [Accessed February 2023].

Reference 2: Australian Prescriber. Anaphylaxis: Emergency management for health professionals. Aust Prescr 2018;41(2):54. Available at www.nps.org.au/australian-prescriber/articles/anaphylaxis-emergency-management-for-health-professionals [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 60% of candidates.

This question requires candidates to have a knowledge of the immediate management of mild to moderate food allergy. This patient is presenting with urticaria and mild swelling of the eye. In the absence of other symptoms of anaphylaxis, this presentation can be managed with a non-sedating antihistamine. The use of sedating antihistamines orally or intravenously is not appropriate in this age group. Adrenaline and hydrocortisone would only be appropriate if there were signs of anaphylaxis.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q66

Harriet Gray, aged 45 years, is concerned about her risk of developing breast cancer. Her mother was diagnosed with breast cancer at age 39 years and developed ovarian cancer at age 63 years. Harriet's sister has just been diagnosed with breast cancer at age 52 years.

What is the **MOST** appropriate next step to manage her risk of breast cancer?

A. Aspirin 100 mg daily
B. Breast MRI every five years starting now
C. Cancer antigen 125 testing every 12 months starting now
D. Clinical breast examination every 12 months starting now
E. Contact Harriet's mother's oncologist to discuss gene expression profiling of her cancers
F. Mammography and breast ultrasound every 12 months starting now
G. Mammography every two years from age 50 years
H. Refer Harriet to a familial cancer clinic for genetic testing

Answer:
H. Refer Harriet to a familial cancer clinic for genetic testing

Q66

References:

Reference 1: The Royal Australian College of General Practitioners. Breast cancer. In: Guidelines for preventive activities in general practice. 9th edn (updated). East Melbourne, Vic: RACGP, 2021; p. 200–03. Available at https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/guidelines-for-preventive-activities-in-general-pr/early-detection-of-cancers/breast-cancer [Accessed March 2023].

Reference 2: Chustecka Z. Chemoprevention of breast cancer: Evidence of 'broad benefit'. US: Medscape, 2013. Available at www.medscape.com/viewarticle/782527 [Accessed February 2023].

Reference 3: The Royal Australian College of General Practitioners. Familial breast and ovarian cancer. In: Genomics in general practice. 2nd Edn. East Melbourne, Vic: RACGP, 2020; p. 27–29. Retrieved from: https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/genomics-in-general-practice/disease-specific-topics/familial-breast-and-ovarian-cancer [Accessed March 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 72% of candidates.

This patient is high risk for breast cancer and should be referred for genetic testing. Aspirin has a role in chemoprevention for bowel cancer, not breast cancer. Contacting Harriet's mother's oncologist without her consent is a breach of confidentiality. Mammography every two years from age 50 years is routine screening for a population-risk individual. The use of MRI, regular ultrasound scan and mammogram and clinical examination may play a role in surveillance; however, this would be decided upon following review at the familial cancer clinic, which is the appropriate next step.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q67

Carol Knight, aged 42 years, is a competitive javelin thrower who tore her left calf muscle eight weeks ago. She has had significant pain and has spent most of her time in bed. For the past few days she has had increasing pain in her left calf, above the initial pain from her tear. She has no other medical conditions, feels otherwise well and has never had pain like this before. An ultrasound of her calf muscle is as follows.

‘Ultrasound calf muscle: Grade 2 tear within the belly of the gastrocnemius with evidence of healing. Lack of compressibility of her short saphenous vein into the popliteal vein confirms a 7 cm thrombus from 3 cm below the knee to just above the popliteal fossa.’

What is the **MOST** appropriate next step?

A. Apixaban 10 mg twice daily for seven days, then reduce to 5 mg twice daily
B. Aspirin 300 mg daily and re-ultrasound in seven days
C. Fit Carol for grade two compression stockings and re-ultrasound in three days
D. Refer Carol to the emergency department for alteplase intravenously
E. Warfarin 5 mg daily and check international normalised ratio in one week

Answer:
A. Apixaban 10 mg twice daily for seven days, then reduce to 5 mg twice daily

Q67

References:

Reference 1: Therapeutic Guidelines. Cardiovascular: Venous thromboembolism: Treatment. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=deep-vein-thromobosis-and-pulmonary-embolism-treatment&guidelineName=Cardiovascular#toc_d1e61 [Accessed February 2023].

Reference 2: Tran HA, Gibbs H, Merriman E, et al. New guidelines from the Thrombosis and Haemostasis Society of Australia and New Zealand for the diagnosis and management of venous thromboembolism. Med J Aust 2019;210(5):227–35. Available at www.mja.com.au/journal/2019/210/5/new-guidelines-thrombosis-and-haemostasis-society-australia-and-new-zealand [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 87% of candidates.

This question requires candidates to understand contemporary management of deep vein thrombosis. The most appropriate anticoagulation currently is a direct oral anticoagulant. Aspirin is not appropriate. Warfarin is now considered a second-line option due to the complexities around dosing and increased bleeding risk. Antifibrinolytics are not required.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q68

Suzanne Rose, aged 39 years, has had irregular menstrual periods for the past two years. Her last normal period was 12 months ago and she has developed intermittent flushing symptoms at night. Sexual intercourse has been increasingly uncomfortable recently. On examination, her heart rate is 82/min, blood pressure 132/83 mmHg, temperature 37.1°C. The rest of her clinical examination is unremarkable. Her cervical screening test two years ago was normal.

Which investigation would **MOST** likely support the provisional diagnosis?

A. Fasting morning cortisol
B. Follicle-stimulating hormone
C. Luteinising hormone
D. Morning serum oestradiol
E. Morning serum progesterone
F. Serum prolactin
G. Serum testosterone
H. Short synacthen test
I. Ultrasound of the pelvis

Answer:
B. Follicle-stimulating hormone

Q68

References:

Reference 1: Nguyen HH, Milat F, Vincent A. Premature ovarian insufficiency in general practice: Meeting the needs of women. Aust Fam Physician 2017;46(6):360–66. Available at www.racgp.org.au/afp/2017/june/premature-ovarian-insufficiency-in-general-practice-meeting-the-needs-of-women [Accessed February 2023].

Reference 2: Jean Hailes for Women's Health. Premature & early menopause. East Melbourne, Vic: Jean Hailes, 2021. Available at https://jeanhailes.org.au/health-a-z/menopause/premature-early-menopause [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 85% of candidates.

This question requires candidates to demonstrate an understanding of several key concepts – presenting symptoms of premature ovarian insufficiency, exclusion of other possible causes of premature ovarian insufficiency with a normal examination and demonstrating an understanding of the pathophysiology of premature ovarian insufficiency to identify that an elevated follicle-stimulating hormone is the most likely investigation to support the diagnosis.

The diagnosis of premature ovarian insufficiency requires two elevated follicle-stimulating hormone levels at least 4–6 weeks apart in a woman aged <40 years after more than four months of amenorrhoea or menstrual cycle irregularity.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q69

Simone Rice, aged 45 years, is due for routine blood tests for monitoring the effects of methotrexate she takes for her recently diagnosed rheumatoid arthritis. She is finding all the tests distressing and asks if she needs to keep having tests now her symptoms have improved on the methotrexate. You explain the reasons for the tests, including monitoring her kidneys and checking her blood cell counts while she is taking methotrexate.

What further complication is the **MOST** appropriate reason for her regular blood tests?

A. Diabetes mellitus
B. Folate deficiency
C. Hypothyroidism
D. Liver dysfunction
E. Thrombocytosis

Answer:
D. Liver dysfunction

Q69

References:

Reference 1: Table 1: Recommended Investigations for some commonly used DMARDs. In: Rheumatoid arthritis – Monitoring of DMARDs. Best Practice Journal 2008;17. Available at https://bpac.org.nz/BPJ/2008/October/dmards.aspx [Accessed February 2023].

Reference 2: Wilsdon TD, Hill CL. Managing the drug treatment of rheumatoid arthritis. Aust Prescr 2017;40(2):51–58. Available at www.nps.org.au/australian-prescriber/articles/managing-the-drug-treatment-of-rheumatoid-arthritis#t1 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 60% of candidates.

The question requires candidates to have some familiarity with methotrexate use. Patients on methotrexate are recommended to have 4–6-weekly blood tests to monitor renal function, cell lines for myelosuppression and liver dysfunction. Alternative options listed include diabetes (there is no link between methotrexate and diabetes), thyroid disease (no link and does not require regular monitoring), thrombocytosis (more likely to cause a thrombocytopaenia) and folate deficiency (not checked routinely with regular blood tests). Folate supplementation is recommended during treatment with methotrexate to prevent folate deficiency.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q70

Jenna Warren, aged 28 years, is pregnant with her second child. Jenna's last normal menstrual period was 12 weeks ago. She has had mild nausea and fatigue but is managing well. Jenna is taking a pregnancy multivitamin daily. During her last pregnancy 18 months ago, she developed severe pre- eclampsia at 28 weeks' gestation and had an emergency caesarean section.

On examination, her body mass index is 23 kg/m^2 and blood pressure 122/76 mmHg. You arrange antenatal screening tests.

What is the **MOST** appropriate additional management to consider?

A. Aspirin 100 mg at night
B. Ferrous sulphate 325 mg daily
C. Folic acid 5 mg daily
D. Labetalol 100 mg three times daily
E. Metformin 500 mg twice daily
F. Methyldopa 250 mg three times daily
G. Norethisterone 5 mg twice daily
H. Vitamin B12 50 mcg daily
I. Vitamin D 1000 IU daily

Answer:
A. Aspirin 100 mg at night

Q70

References:

Reference 1: Lowe SA, Bowyer L, Lust K, et al. Guideline for the management of hypertensive disorders of pregnancy 2014. Sydney: Society of Obstetric Medicine of Australia and New Zealand, 2014. Available at https://ranzcog.edu.au/wp-content/uploads/2022/05/Guideline-for-the-Management-of-Hypertensive-Disorders-of-Pregnancy.pdf [Accessed February 2023].

Reference 2: Atallah A, Lecarpentier E, Goffinet F, Doret-Dion M, Gaucherand P, Tsatsaris V. Aspirin for prevention of preeclampsia. Drugs 2017; 77(17):1819–31. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC5681618 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 48% of candidates.

There is now strong evidence that low-dose aspirin (100 mg at night) started early in pregnancy (12–36 weeks) reduces the risk of recurrent pre-eclampsia. As many public patients will not be seen for a first obstetric visit at the hospital until 16–20 weeks, general practitioners need to be aware to start this medication.

Previous pre-eclampsia does not increase the risk of neural tube defects and therefore high-dose folic acid is not needed. Antihypertensives are not needed when blood pressure is normal. Nutritional supplements are not recommended unless deficiency is recorded. There is no evidence for progesterone or metformin in this situation.

Questions remain correct at the time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q71

Ryan Sherzinger, aged 38 years, is being investigated for secondary causes of hypertension. His recent home morning blood pressure readings are 156/101 mmHg, 151/99 mmHg and 153/102 mmHg. On examination, his heart rate is 70/min regular and blood pressure 155/105 mmHg. The rest of his physical examination is unremarkable.

His full blood examination and fasting lipid profile are within normal limits. Further relevant test results are as follows.

Test	**Result**	**Normal range**
Sodium	135 mmol/L	135–145
Potassium	**2.8 mmol/L***	3.5–5.2
Chloride	98 mmol/L	95–110
Bicarbonate	23 mmol/L	22–32
Urea	3.5 mmol/L	2.5–8.0
Creatinine	85 mmol/L	45–90
Estimated glomerular filtration rate	96 mL/min/1.73 m^2	>90
Urate	0.38 mmol/L	<0.42

What is the **MOST** appropriate investigation to support the provisional diagnosis?

A. 24-hour urinary catecholamines
B. Aldosterone-to-renin ratio
C. Echocardiography
D. Exercise stress test
E. HbA1c
F. Polysomnography
G. Renal artery Doppler ultrasound
H. Thyroid-stimulating hormone

Answer:
B. Aldosterone-to-renin ratio

Q71

References:

Reference 1: Lim YY, Shen J, Fuller PJ, Yang J. Current pattern of primary aldosteronism diagnosis: Delayed and complicated. Aust J Gen Practice 2018;47(10):712–18. Available at www1.racgp.org.au/ajgp/2018/october/current-pattern-of-primary-aldosteronism-diagnosis [Accessed February 2023].

Reference 2: Funder JW, Carey RM, Mantero F, et al. The management of primary aldosteronism: Case detection, diagnosis, and treatment: An endocrine society clinical practice guideline. J Clin Endocrinol Metab 2016;101(5):1889–1916. Available at https://academic.oup.com/jcem/article/101/5/1889/2804729 [Accessed February 2023].

Reference 3: Gabb GM, Mangoni AA, Anderson CS, et al. Guideline for the diagnosis and management of hypertension in adults – 2016. Med J Aust 2016;205(2):85–89. Available at https://onlinelibrary.wiley.com/doi/abs/10.5694/mja16.00526 [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 85% of candidates.

Primary aldosteronism (Conn's syndrome) is the most common, treatable and potentially curable secondary cause of hypertension. Approximately 5–10% of patients with hypertension have underlying primary aldosteronism. It is important for general practitioners to be aware of this condition and specifically screen for it where appropriate. Hyperaldosteronism has been associated with increased end-organ damage when compared to patients treated for essential hypertension. The initial investigation for primary aldosteronism is an aldosterone-to-renin ratio, although the results may be difficult to interpret if the patient is already on treatment. Specialist input may be required for formal diagnosis. Normokalaemia does not exclude the diagnosis.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q72

Bill Andrews, aged 76 years, had an episode last night when moving from the toilet to the bath and he felt like he was going to 'pass out'. By the time his wife, Joan, was able to get to him, Bill was sitting on the floor and the sensation had passed. Bill felt back to normal within a minute and he remembers the entire event. Bill has type 2 diabetes and hypertension. He takes 36 units of insulin glargine subcutaneously daily and irbesartan-hydrochlorothiazide 300 mg/12.5 mg daily.

On examination, Bill’s blood pressure is 130/85 mmHg and heart rate 78/min when seated, and blood pressure 115/80 mmHg and heart rate 89/min when standing.

What is the **MOST** appropriate provisional diagnosis?

A. Cerebrovascular accident
B. Hypoglycaemia
C. Hypokalaemia
D. Orthostatic hypotension
E. Panic attack
F. Seizure disorder
G. Sick sinus syndrome
H. Transient ischaemic attack

Answer:
D. Orthostatic hypotension

Q72

References:

Reference 1: Therapeutic Guidelines. Diabetes: Diabetic neuropathy – Orthostatic hypotension. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=diabetic-neuropathy&sectionId=dbg1-c21-s3#dbg1-c21-s3-3 [Accessed February 2023].

Reference 2: Sutton R. Syncope in patients with pacemaker. Arrhythm Electrophysiol Rev 2015;4(3):189–92. Available at www.aerjournal.com/articles/syncope-patients-pacemakers [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 80% of candidates.

In this setting of a patient having diabetes requiring insulin and taking a thiazide diuretic with symptoms occurring while undergoing a positional change, orthostatic hypotension is the most likely explanation. The positional drop in blood pressure and rise in pulse, while not overt, points to an orthostatic phenomenon. The patient's full recollection of events makes a seizure disorder unlikely. The short duration of symptoms with full recovery excludes a cerebrovascular accident, and hypoglycaemia and hypokalaemia are less likely to resolve so quickly. Panic attack does not fit with the clinical scenario presented.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q73

Max Smart, aged 42 years, presents to your clinic in rural Tasmania with an itchy, painful rash on the toes of both feet. Max and his wife are visiting from Queensland and have spent the past five days on an overland trek. Max explains that despite wearing high-quality hiking boots and two pairs of socks his feet were still very cold. On examination his temperature is 36.9°C and he has no palpable lymph nodes in his groin. Pedal pulses are normal. The rash is as shown (see image).

What is the **MOST** appropriate diagnosis?

A. Cellulitis
B. Chilblains
C. Frostbite
D. Raynaud's phenomenon
E. Tinea pedis

Answer:
B. Chilblains

Q73

References:

Reference 1: Therapeutic Guidelines. Dermatology: Cutaneous vasculitis – Chilblains. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Dermatology&topicfile=cutaneous-vasculitis&guidelinename=Dermatology&sectionId=toc_d1e246#toc_d1e246 [Accessed February 2023].

Reference 2: Oakley A, Tang GT, Nixon R. Chilblains. NZ: DermnetNZ, 2021. Available at www.dermnetnz.org/topics/chilblains [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 90% of candidates.

This is a case of chilblains. Chilblains are tender and/or itchy lesions that may be found on ears, fingers, toes, nose or penis when exposed to damp, cold conditions. They are a form of localised vasculitis. Frostbite is a more severe form of cold injury that results when the skin actually freezes. The clinical appearance in this case is not consistent with cellulitis or tinea pedis. Raynaud's phenomenon classically presents with white then blue then red discolouration and is painful but not usually itchy.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q74

Olive Beattie, aged 19 years, has returned for follow-up travel vaccinations for her trip to Uganda in eight weeks' time. Olive is up to date with all of the usual Australian childhood vaccinations and COVID-19 vaccinations. One week ago she had rabies, influenza and varicella vaccinations performed at another clinic. She had one hepatitis A vaccination two years ago and a second hepatitis A vaccination 18 months later. She would like to see you for the remainder of her vaccinations but has lost the schedule that the other doctor gave her. You advise that she requires a second dose of rabies vaccination today.

What is the **MOST** appropriate additional vaccination to administer today?

A. Bacille Calmette–Guérin
B. Hepatitis A
C. Hepatitis B
D. Japanese encephalitis
E. Measles, mumps and rubella
F. Pneumococcal
G. Polio
H. Typhoid
I. Yellow fever

Answer:
H. Typhoid

Q74

References:

Reference 1: Kroger AT, Robinson CL. Chapter 2: Preparing international travelers – Vaccination & immunoprophylaxis: General recommendations. In: Travelers' health. Atlanta, GA: Centers for Disease Control and Prevention. Available at wwwnc.cdc.gov/travel/yellowbook/2020/preparing-international-travelers/vaccination-and-immunoprophylaxis-general-recommendations [Accessed February 2023].

Reference 2: Australian Immunisation Handbook. Mérieux inactivated rabies vaccine. Canberra: Australian Immunisation Handbook, Australian Government Department of Health, 2018. Available at https://immunisationhandbook.health.gov.au/vaccines/merieux-inactivated-rabies-vaccine [Accessed February 2023].

Feedback:

This question was used in the 2020.2 Applied Knowledge Test. It was answered correctly by 56% of candidates.

The question requires knowledge of the childhood immunisation schedule, travel vaccinations and scheduling of vaccines. This patient has received a live vaccination (varicella) one week ago and so another live vaccination (such as yellow fever) cannot be administered for one month. She has had a full course of hepatitis A vaccination. She is due for a second dose of rabies vaccination as the usual course is 0, 7 and 28 days. Therefore, the only remaining vaccination required for this trip is typhoid.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.

Q75

Gemma Jennings, aged 76 years, presents for follow-up six weeks after she fractured the neck of her right humerus when she tripped and hit her shoulder heavily against a wall. Gemma is planning to travel around Australia for 12 months and is unsure when she will be able to see a doctor again. She eats two serves of calcium-containing dairy food daily and does weight-bearing exercise five days per week. She takes calcium carbonate 600 mg daily and vitamin D 1000 IU daily. She had a hysterectomy three years ago for vaginal prolapse and she has a severe needle phobia after a reaction to her previous pneumococcal vaccine.

Relevant investigations completed three months ago are as follows.

Test	**Result**	**Normal Range**
Dual-energy X-ray absorptiometry	T-score **-1.6*** (lumbar spine) **-1.9*** (left hip)	Normal greater than –1.0 Osteopenia –1 to –2.5 Osteoporosis less than –2.5
Calcium (corrected)	2.44 mmol/L	2.20-2.70
Vitamin D	81 nmol/L	>50

What is the **MOST** appropriate next step?

A. Conjugated oestrogens 0.625 mg daily
B. Increase calcium carbonate to 1200 mg daily
C. Measure coeliac antibodies
D. Measure serum parathyroid hormone
E. Repeat dual-energy X-ray absorptiometry
F. Repeat serum calcium and vitamin D levels
G. Risedronate 35 mg once weekly
H. Serum electrophoresis

Answer:
G. Risedronate 35 mg once weekly

Q75

References:

Reference 1: The Royal Australian College of General Practitioners and Osteoporosis Australia. Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age. 2nd edn. East Melbourne, Vic: RACGP, 2017. Available at www.racgp.org.au/download/Documents/Guidelines/Musculoskeletal/osteoporosis-guidelines.pdf [Accessed February 2023].

Reference 2: Therapeutic Guidelines. Bone and metabolism: Osteoporosis and minimal-trauma fracture. West Melbourne, Vic: Therapeutic Guidelines, 2021. Available at https://tgldcdp.tg.org.au/viewTopic?topicfile=osteoporosis-minimal-trauma-fracture&guidelineName=Bone%20and%20Metabolism&topicNavigation=navigateTopic#toc_d1e638 [Accessed February 2023].

Feedback:

This question was used in the 2019.2 Applied Knowledge Test. It was answered correctly by 59% of candidates.

According to The Royal Australian College of General Practitioners and Osteoporosis Australia guidelines, osteoporosis is diagnosed when there is a minimal trauma fracture (which is a fall from standing height or less) of spine or hip regardless of bone density, or a minimal trauma fracture (not spine or hip) and a bone mineral density of <–1.5. This patient fits the definition and needs osteoporosis treatment.

First-line therapies are bisphosphonates or denosumab. Either could be chosen in this patient but as denosumab needs to be administered every six months via subcutaneous injection, an oral bisphosphonate is more likely to be appropriate due to the patient’s travel plans and needle phobia. Oestrogen would not usually be used first line in women over 60 years of age with no menopausal symptoms.

Questions remain correct at time of reviewing for the practice exam and at the time of use in the Applied Knowledge Test. Please be aware guidelines are subject to change.