

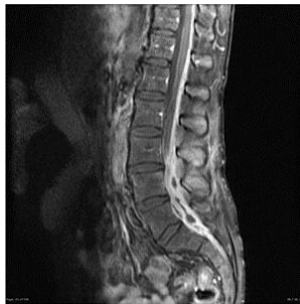
SINGLE BEST MCQs

1. An 18-year-old man sustained an inversion injury of the ankle while he was playing football. An x ray of the ankle shows no fractures. Which of the following ligaments is most likely to be injured?
 - A. Anterior talofibular ligament
 - B. Anterior tibiofibular ligament
 - C. Calcaneofibular ligament
 - D. Deltoid ligament
 - E. Posterior talofibular ligament

The correct answer is A. Inversion of the ankle results in strain on the ligaments between the fibula and the hindfoot. All three of the anterior talofibular ligament, calcaneofibular ligament and posterior talofibular ligaments are involved but the ATFL is most common. The deltoid ligament is medial, and anterior tibiofibular ligament is not commonly included in inversion injuries unless there is an element of forced plantar flexion at the time.

Curriculum reference 2.2.2 Joint pain, 2.4.9 – joint examination

2. A 50-year-old ex-intravenous drug user presents with a 2 day history of back pain, fever and weakness of his right lower limb. His lumbar spine MRI scan is attached. Which of the following is the most likely diagnosis?



- A. Epidural haematoma
- B. Spinal cord haemorrhage
- C. Multiple sclerosis
- D. Spinal metastasis
- E. Spinal epidural abscess

The correct answer is E. The MRI does not show any cord signal abnormalities suggestive of MS or cord hemorrhage and the bony spine is normal essentially. Epidural hematoma and epidural abscess may be difficult to distinguish but the fever suggests to infection

Curriculum reference 2.3.7 spinal cord and peripheral nervous system

3. A 24-year-old woman presents with dysuria, frequency, dyspareunia and a thin, watery, foul-smelling vaginal discharge. On examination she has an inflamed vulval mucosa and punctate cervical haemorrhages. Which of the following micro-organisms is the most likely cause of her presentation?
 - A. Candida albicans
 - B. Chlamidia trachomatis
 - C. Herpes simplex
 - D. Neisseria gonorrhoeae
 - E. Trichomonas vaginalis

The correct answer is E. The clinical symptoms are characteristic of trichomonas and should be recognized as such.

Curriculum reference 2.2.3 symptoms, signs and situations - other symptoms

4. A 13-year-old boy presents with a 1 month history of right anterior knee pain which comes on during football training and disappears on resting. On examination you note a swelling on the proximal tibia (see attached image) and point tenderness over the tibial tubercle. What is the best way to make a diagnosis of Osgood Schlatter disease in the ED?



- A. Thorough clinical examination
- B. CT scan of the knee
- C. Lateral x ray of the knee
- D. MRI of the knee joint
- E. Ultrasound of the knee joint

The correct answer is A. The key here is the reliability of the diagnostic test. Whilst the imaging may reveal other abnormalities, the radiological findings are not conclusive and perceived abnormalities may be normal in some cases. Osgood Schlatter is a clinical diagnosis depending on tenderness.
Curriculum reference 2.2.2, joint pain, 2.4.9 – joint examination

5. A 31-year-old woman, 34 weeks pregnant, is brought to the ED with right upper quadrant pain. She is jaundiced and has evidence of coagulopathy. Which of the following diagnoses is the most likely?
- A. Acute hepatitis
 - B. Acute fatty liver
 - C. HELLP syndrome
 - D. Acute cholecystitis
 - E. Intrahepatic cholestasis

The correct answer is C. HELLP is the most significant and common diagnosis in a pregnant but otherwise healthy woman. The presence of jaundice and coagulopathy rules out b and d and is most unlikely in e although intrahepatic cholestasis of pregnancy does occur. Acute hepatitis is unlikely to present with jaundice AND coagulopathy as the liver must be significantly damaged to cause coagulopathy by poor synthesis of clotting factors. In HELLP the coagulopathy comes from the low platelets (LP in the HELLP acronym)
Curriculum reference 2.3.13 Diagnosis and syndromes - obstetrics

6. A 5-year-old boy is brought in by his mother for a rash on his back and buttocks. The remainder of his physical examination is normal. Which of the following is the most likely cause?



- A. Child abuse
- B. Henoch-Schonlein purpura
- C. Idiopathic thrombocytopenic purpura
- D. Meningococcal septicaemia
- E. Multiple insect bites

The correct answer is A. The picture shows multiple bruises of varying ages. There is no evidence of swelling which would be expected in insect bites and the marks are not petechial or dark enough for purpura of any cause

Curriculum reference 2.6.5 Professional competences - professionalism, ethics and medico=legal

7. A 10-month-old girl is brought to the ED with a 4-day history of fever which has now resolved. However today she is noted to have developed a rash (see image). Which of the following is the most likely diagnosis?



- A. Eczema herpeticum
- B. Erythema infectiosum
- C. Kawasaki disease
- D. Roseola infantum
- E. Scarlet fever

The correct answer is D. The rash of Roseola Infantum (sixth disease) appears immediately after a non-specific febrile illness. It is erythematous, maculopapular discrete rose or pale pink lesions 2-5 mm in size and is most prominent on the neck, trunk and buttocks. Lesions blanch with pressure.

Curriculum reference 2.2.5 Dermatology, 2.3.18 Infection; paediatric

8. A 45-year-old man presents with right shoulder pain which started after he chopped wood 2 days ago. The pain is made worse when the patient externally rotates his shoulder against resistance but there is no weakness. In addition to the teres minor, which of the following muscles is most likely to be inflamed in this patient?

- A. Infraspinatus
- B. Pectoralis
- C. Subscapularis
- D. Supraspinatus
- E. Trapezius

The correct answer is A. An understanding of the applied functional anatomy of a complex action is needed for this, firstly the analysis of the movement required for chopping wood and then the test to identify the muscle forms part of the understanding of the process of examination of the shoulder.

Curriculum reference 2.2.2, joint pain, 2.4.9 – joint examination

9. A 31-year-old woman who was diagnosed with pelvic inflammatory disease (PID) 3 days earlier, presents with a one-day history of right upper quadrant pain and jaundice. You suspect that this lady has developed perihepatitis (Fitz-Hugh-Curtis syndrome). What would be the best initial treatment for this complication of PID?
- A. Antibiotics
 - B. Interferon
 - C. Laparoscopic adhesiolysis
 - D. Steroids
 - E. Vitamin K

The correct answer is A. Perihepatitis is a known but uncommon complication of pelvic inflammatory disease. It responds to standard antibiotic treatment for PID.

Curriculum reference 2.3;12 Genitourinary, therapeutics

10. A 17-year-old woman is treated for a throat infection with penicillin for 4 days. She has now developed an itchy, flushed skin, wheezing and throat swelling. What is the most likely mechanism for this allergic reaction?
- A. Non-IgE mediated hypersensitivity reaction
 - B. Histamine release from mast cells
 - C. IgG antibody binding to surface antigens
 - D. T-cell mediated immunity
 - E. Mediation by IgA antibodies

The correct answer is B. Anaphylaxis arises from the activation of mast cells and basophils. This activation results in release of preformed mediators from secretory granules that include histamine, tryptase and proteoglycans.

Curriculum reference 2.2.3 pruritus

11. A 32-year-old woman presents with malaise, fever and a right periorbital swelling (see image). On examination you note ophthalmoplegia and cranial nerves III, IV and VI are also affected. Which of the following conditions is the most likely cause of her symptoms?



- A. Brain abscess
- B. Cavernous sinus thrombosis
- C. Maxillary sinus abscess
- D. Pre-septal orbital cellulitis
- E. Viral meningitis

The correct answer is B. Swelling around the eye is not found in meningitis, brain abscess or maxillary sinus abscess. Pre-septal cellulitis does not cause ophthalmoplegia. The 3rd, 4th and 6th cranial nerves travel through or in the wall of the cavernous sinus leading to loss of lateral gaze followed by ophthalmoplegia externa, mydriasis and ptosis. Traction on the optic nerve will lead to progressive loss of visual acuity.

Curriculum reference 2.0, Section 2.3.8&9 (Diagnoses and Syndromes: Eye, Ear & Nose)

12. A 63-year-old man with a long history of low back pain and right-sided sciatic pain presents to the Emergency Department with an exacerbation of his symptoms. Which of the following clinical features are consistent with a sciatic nerve compression?
- A. Pain that radiates to the thigh and ankle
 - B. Reduced anal tone
 - C. Pain on extension of the hip joint
 - D. Loss of sensation in the perianal area
 - E. Weak dorsiflexion of the great toe

The correct answer is E. The sciatic nerve does not supply motor or sensation to the anus/perineal region (Pudendal Nerve). Straight leg raise exacerbates sciatic pain, not hip extension. Radiation to the thigh and ankle do not occur together.

Curriculum reference 2.0, Section 2.2.2 Symptoms and Signs – Back pain, 2.3.7 Spinal Cord and peripheral nervous system

13. This 8-year-old boy has had a papulosquamous annular rash (see picture) for several weeks. The rash seems getting worse. He has no prior medical history and is not feeling unwell. What is your diagnosis?



- A. Lichen planus
- B. Pityriasis rosea
- C. Psoriasis
- D. Tinea corporis
- E. Scabies

The correct answer is D. In a well appearing child of 8 years, lichen Planus and Psoriasis are extremely unlikely. Pityriasis rosea (Christmas tree rash) has a herald patch followed by smaller lesions on the trunk and arms. Scabies is itchy and tends to affect the skin folds, web spaces between digits and warmer areas. The well demarcated borders with paler centres appear typical for tinea corporis.

Curriculum reference 2.0, Section 2.3.15 Skin and Soft Tissue, 2.2.5 Abnormal Physical Findings – Rash

14. A 6-year-old boy is brought to the ED because of testicular pain. Which of the following would suggest that testicular torsion is the most likely diagnosis in this child?
- A. Dysuria
 - B. Changes in scrotal skin
 - C. Normal cremasteric reflex
 - D. Pain came on suddenly
 - E. Testicle is pale on transillumination

The correct answer is D. Testicular torsion tends to have an abrupt onset. Dysuria, scrotal skin changes are unspecific symptoms/signs. Transillumination is not a useful test for torsion, rather cysts. A normal cremaster reflex does not indicate torsion.

Curriculum reference 2.0, Section 2.3.12 Urogenital, 2.2.2 Abnormal Physical Findings – Scrotal Pain

15. A 5-week-old boy is brought to the ED with a 3 day history of vomiting after feeds. His parents report that after a large volume of projectile vomiting, their son is keen to feed again. Which of the following is the most likely diagnosis?
- A. Intussusception
 - B. Midgut volvulus
 - C. Necrotising enterocolitis
 - D. Urinary tract infection
 - E. Pyloric stenosis

The correct answer is E. Pyloric stenosis tends to become symptomatic between 6 weeks and 6 months of age with vomiting at the end or after feeds in an otherwise well-appearing child. Intussusception is rare before 2 months of age and tends to present with intermittent pain and lethargy rather than vomiting. Necrotizing enterocolitis and volvulus will present with very unwell appearing children who will not want to feed and may have vomited bile and have signs of shock. A urinary tract infection is unlikely to present with vomiting as the only symptom.

Curriculum reference 2.0, Section 2.3.10 Gastrointestinal – Pyloric stenosis

16. A 70-year-old man presents with palpitations. He takes a thiazide diuretic for hypertension and 2 days ago he was prescribed a macrolide for bronchitis. Which of the following arrhythmias is most likely to be provoked by administration of a macrolide in this patient?
- A. Atrial flutter
 - B. AVNRT
 - C. Multifocal atrial tachycardia
 - D. Torsades de pointes
 - E. Ventricular tachycardia

The correct answer is D. Macrolide antibiotics are known to interact with many medications to prolong the QT interval which increases the risk of torsade de points. A thiazide diuretic is often associated with hypokalaemia, which also prolongs the QT Interval.

Curriculum reference 2.3.4 Heart

17. A 55-year-old man presents with acute confusion, ataxia and seizures. The serum sodium level was found to be 115 mmol/L. Which of the following is the recommended intravenous treatment for this patient?
- A. 0.9% saline
 - B. 2% saline
 - C. 3% saline
 - D. 5% saline
 - E. 7% saline

The correct answer is C. Symptomatic severe hyponatraemia of acute onset may be treated with 100ml boluses of 3% normal saline.

Curriculum reference 2.2.6 Abnormal blood tests – Hyponatraemia

18. You are in the pre-hospital field attending to an incident with multiple victims of a lightning strike. Which of the following statements is correct?
- A. VF following a lightning strike is refractory to defibrillation
 - B. Ambulant victims do not require referral to hospital
 - C. Comatose victims with dilated pupils have a very poor prognosis
 - D. Victims in respiratory arrest should be treated first
 - E. CPR should be stopped if ROSC is not obtained within a few minutes

The correct answer is D. Depolarization and paralysis of the medullary respiratory center following a lightning strike results in immediate respiratory arrest which can respond to immediate CPR. Lightning can cause pupillary dilatation because of autonomic dysfunction, and this has no prognostic significance.

Curriculum reference 2.3.22 Electricity and lightning

19. A 60-year-old woman with advanced breast malignancy presents with an increasingly painful and swollen left leg. Which of the following is the most likely underlying cause?



- A. Allergic reaction
- B. Arterial embolism
- C. Necrotising fasciitis
- D. Subcutaneous infection
- E. Venous thrombosis

The correct answer is E. This is phlegmasia cerulea dolens, which is an advanced form of venous thromboembolism and can be a precursor of venous gangrene. The limb appears dusky and swollen, unlike arterial embolism, where the limb is pale. Malignancy is the most common triggering factor for this condition.

Curriculum reference 2.3.5 Circulation and vascular

20. A 40-year-old woman with a 6-week history of amenorrhea has a β -HCG level of 37,000 mIU/ml. Which of the following statements regarding the hormone β -HCG is true?
- A. It is produced by the embryo
 - B. It is an analogue to pituitary FSH
 - C. It can be produced by a tumour
 - D. Levels continue to rise throughout pregnancy
 - E. Rising levels reliably rule out ectopic pregnancy

The correct answer is C. β -HCG is a hormone produced by the trophoblast. Levels peak at 10-12 weeks gestation and then decline rapidly. The rate of rise is lower in ectopic pregnancy. An abnormally high level suggests molar pregnancy, multiple pregnancy or chromosomal abnormalities.

Curriculum reference 2.5 Specific situations

21. A 23-year-old pregnant woman presents in her second trimester with malaise, arthralgia, generalized pruritus and a burning painful rash (see image) on her legs for the past few days. What is the most likely diagnosis?

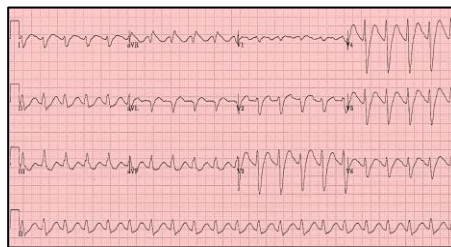


- A. Bullous pemphigus
- B. Erythema multiforme
- C. Granuloma annulare
- D. Herpes simplex
- E. Urticarial vasculitis

The correct answer is B. *Erythema multiforme is an acute inflammatory skin disease characterized by non-pruritic, erythematous macules, papules and target lesions (pathognomonic). Pemphigus is vesicular or bullous; granuloma annulare appears as firm red or yellow bumps arranged in a ring on the skin; herpes simplex causes a blistering rash and urticarial vasculitis appears as erythematous wheals with purpura.*

Curriculum reference 2.2.5 Abnormal physical and mental findings

22. A 45-year-old woman was found unconscious at home by her son and was brought to the ED. Her ECG is attached. Which of the following diagnoses fits best with the ECG findings?



- A. Brugada syndrome
- B. Hypothermia
- C. MDMA intoxication
- D. STEMI
- E. Tricyclic antidepressant overdose

The correct answer is E. *This ECG is typical for tricyclic antidepressant overdose. It shows sinus tachycardia, right axis deviation and prolongation of the QRS and QT intervals. ECG abnormalities are useful in identifying patients at increased risk of seizures and ventricular arrhythmias.*

Curriculum reference 2.4.4 Circulation – 12-lead ECG interpretation

23. A 19-year-old woman presents with a rash as seen in the picture. She is otherwise asymptomatic. Appropriate treatment for this condition would be:



- A. Antibiotics
- B. Antifungals
- C. Antihistamines
- D. Antivirals
- E. Steroids

The correct answer is B. The image is of a patient with pityriasis versicolor, which is a common fungal infection of the skin. It can be treated with antifungal shampoo and topical antifungal cream.

Curriculum reference 2.2.5 Abnormal physical and mental status findings

24. An 85-year-old woman presents to the ED with vague symptoms of abdominal pain and constipation for 3 days. Which of the following signs and symptoms would support a diagnosis of intestinal ischaemia?
- A. Blood in stool
 - B. Fulminant diarrhoea
 - C. High grade fever
 - D. Profuse vomiting
 - E. Voluntary guarding

The correct answer is A. Diagnosis of mesenteric ischemia is difficult as the presentation can mimic many other intra-abdominal pathologies. The most common clinical features are severe pain which is disproportionate to clinical findings, abdominal distension and GI bleeding. Fever is usually low-grade and vomiting and diarrhea are not prominent symptoms.

Curriculum reference 2.3.10 Intestinal ischemia

25. A 76-year-old man who was started on antihypertensive medication 3 days ago presents with his first episode of urinary retention. Which of the following drugs is most likely to have precipitated retention of urine in this man?
- A. ACE inhibitors
 - B. Angiotensin II receptor blocker
 - C. Beta blocker
 - D. Calcium channel blocker
 - E. Thiazide diuretic

The correct answer is D. Calcium channel blockers decrease smooth-muscle contractility in the bladder leading to urinary retention and overflow incontinence.

Curriculum reference 2.3.12 Urogenital – Urinary retention

26. A 46-year-old motorcycle driver is brought in having been hit by a car travelling at 60 km /hour. His GCS at scene was 8 (E3,V4, M1). He was intubated by the prehospital team and is ventilated at 15 breaths / minute. O₂ saturation is 96% and airway pressures are normal. His pulse rate is 65/minute and systolic BP is 95 mmHg. His hands and feet are warm. What is the most likely cause of his shock given these parameters?
- A. Bilateral tension pneumothorax
 - B. Major abdominal organ injury
 - C. Major head injury with raised intracranial pressure
 - D. Major thoracic vessel disruption
 - E. Spinal cord injury with neurogenic shock

The correct answer is E. Neurogenic shock is a type of distributive shock due to extreme vasodilatation secondary to loss of sympathetic arterial tone. It is characterized by hypotension and bradycardia. Abdominal injury and thoracic vessel disruption result in hypovolemic shock. Tension pneumothorax causes obstructive shock while isolated head injury is not usually associated with shock.

Curriculum reference 2.3.5 Shock

27. An 4-year-old girl is brought in by her school teacher who has noticed these wounds on her left hand. The girl tells you she doesn't know how they happened and they just appeared one day. What is the most likely diagnosis?



- A. Bullous pemphigoid
- B. Cigarette burns
- C. Contact dermatitis
- D. Infected herpetic sores
- E. Thermal burns from cooking

The correct answer is B. The typical shape and location (dorsum of the hand) of these lesions is compatible with non-accidental burns due to contact with a hot cigarette stub.
Curriculum reference 2.6.5 – Abuse and violence

28. You are the first prehospital team at a mass casualty event. A truck with chemicals has crashed. Twenty vehicles are involved. You are asked to perform a situation report. What does the following sign mean?



- A. Acute toxicity
- B. Biohazard
- C. Flammable
- D. Poisonous
- E. Radiation

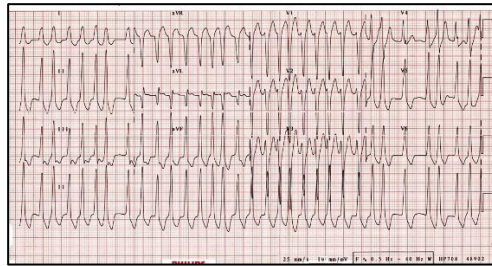
The correct answer is B. This is an internationally used symbol to indicate the actual or potential presence of a biohazard.
Curriculum reference 2.6.1 - Disaster medicine

29. A 37-year-old woman presents with severe vertigo which started while she was taking a course of antibiotics for a urinary tract infection. Which of the following antibiotics could have been the cause of her symptoms?
- A. Amoxicillin
 - B. Cephalexin
 - C. Ciprofloxacin
 - D. Nitrofurantoin
 - E. Tetracycline

The correct answer is C. Several drugs can cause vertigo, including antibiotics, the most notorious being Ciprofloxacin.

Curriculum reference 2.3.9 - Ear and nose

30. A 39-year-old, previously healthy man presents with palpitations, shortness of breath and feeling of light-headedness for the past hour. Vital signs: BP 115/65 mmHg, RR 20/minute, O₂ saturation 98% on room air, Temperature 36.6°C. His ECG is attached. What is the most likely cause of his symptoms?



- A. Atrial flutter with variable block
- B. AV nodal re-entrant tachycardia
- C. Pre-excitation atrial fibrillation
- D. Torsades de pointes
- E. Ventricular tachycardia

The correct answer is C. Atrial fibrillation can occur in up to 20% of patients with WPW syndrome as the accessory pathway allows for rapid conduction directly to the ventricles bypassing the AV node. The characteristic ECG features seen in the image are an irregular and wide-complex tachycardia, with a stable axis but in which QRS complexes change in shape and morphology. Curriculum reference 2.3.4 - Heart

MULTIPLE TRUE / FALSE QUESTIONS

31. A 28-year-old man was brought to the ED with carbon monoxide poisoning after he was found sitting in his car with the engine still running in a closed garage. Which of the following are indications for urgent referral for hyperbaric oxygen treatment?
- A. Cardiac arrest
 - B. Ischaemic changes on his ECG
 - C. Nausea and vomiting
 - D. Severe metabolic acidosis
 - E. Seizures

The correct answers are B,D,E. Hyperbaric oxygen therapy may prevent neurological complications when used for patients with carbon monoxide poisoning with high-risk features such as syncope, seizures, focal neurological deficits, acute myocardial ischemia, arrhythmias and severe metabolic acidosis.

Curriculum reference 2.3.19 - Diagnosis and syndromes - Poisoning

32. A 35-year-old man presents with fever, dysuria and perineal pain. A digital rectal examination reveals a tender, boggy prostate. Which other clinical features could be present with acute bacterial prostatitis?
- A. Ejaculatory pain
 - B. Gross hematuria
 - C. Urethral discharge
 - D. Urinary incontinence
 - E. Weak urinary stream

The correct answers are A,C,E. Patients with acute prostatitis can present with irritative or obstructive symptoms such as low back pain, perineal, suprapubic or genital discomfort, lower urinary tract voiding symptoms and perineal pain with ejaculation.

Curriculum reference 2.3.12 – Diagnosis and syndromes - urogenital

33. A 27-year-old woman with a history of depressive psychosis presents with her first manic episode. Which of the following could have triggered this episode?
- A. Administration of metoclopramide
 - B. Alcohol intoxication
 - C. Head injury
 - D. Pregnancy
 - E. Sepsis

The correct answers are A,D. Drugs which increase monoamines can trigger mania. Pregnancy can trigger mania in women with a history of manic-depressive illness.

Curriculum reference 2.2.5 Psychiatry – Agitation / aggression

34. A 43-year-old woman driver presents 24 hours after a road traffic collision. The airbag was deployed. She complains of pain and reduced vision in her right eye, which appears swollen. What are the most common ophthalmic airbag injuries that should be excluded in this woman?
- A. Corneal abrasion
 - B. Corneal tear
 - C. Eyelid laceration
 - D. Hyphaema
 - E. Retinal detachment

The correct answers are A,C,D. Airbags deploy by ignition of solid propellant which leads to rapid inflation of the airbag. This can cause mechanical friction injuries to the face, particularly the eyes.

Curriculum reference 2.3.21 Trauma and 2.3.8 Eye

35. A 17-year-old man presents with a laceration of the lip which needs suturing. You perform a mental nerve block. Which of the following structures would be anesthetised with a mental nerve block?
- A. The maxillary canine
 - B. The lower lip
 - C. The gingiva
 - D. The labial mucosa
 - E. The frenulum

The correct answers are B,C,D. The mental nerve supplies sensation to the lower teeth, skin over the chin and lower lip and the buccal mucosa.

Curriculum reference 2.4.7 Local, topical and regional anaesthesia

36. You are managing a 27-year-old man who is in status epilepticus which has not resolved despite treatment with benzodiazepines and phenytoin. Which of the following drugs are recommended to treat refractory status epilepticus?
- A. Ketamine
 - B. Magnesium sulphate
 - C. Midazolam
 - D. Propofol
 - E. Lamotrigine

The correct answers are A,C,D. Refractory status epilepticus is defined as persistent seizure activity despite IV treatment with adequate amounts of 2 anti-epileptic agents. Recommended drugs include propofol, midazolam, phenobarbitone and ketamine.

Curriculum reference 2.2.3 Seizures

37. You are asked to review the renovation plan of the psychiatric assessment room at your ED. Which of the following equipment are safe to be available within the psychiatric assessment room?
- A. Blood pressure monitor
 - B. Observation cameras
 - C. Oxygen supply
 - D. Panic / alarm button
 - E. Pulse oximeter

The correct answers are B,D. Emergency Departments must cater for high-risk patients and situations. Any objects in the assessment room which can be used by the patient to harm themselves or others must be removed. Assessment rooms should be safe and private and should provide a calming environment and should not contain any furniture, fittings or equipment which are likely to be used to cause harm to the patient or to staff.

Curriculum reference 2.6.1 Organizational Competences.

38. A 70-year-old woman with a history of arterial hypertension presents following a syncopal episode at home which lasted a few minutes. On examination you hear a systolic murmur of aortic stenosis. Which of the following statements are correct in relation to aortic stenosis?
- A. Exertional dyspnoea is the commonest initial complaint
 - B. Symptoms are usually insidious at onset
 - C. Exertional syncope is a classic associated symptom
 - D. The systolic BP is usually > 200 mmHg
 - E. It is associated with pulsus paradoxus

The correct answers are A,C. The classic triad of Aortic Stenosis is dyspnea, chest pain and syncope. It is usually asymptomatic for a long time and onset of symptoms occurs in a stepwise manner. There is no association with hypertension and the pulse pressure narrowed.

Curriculum reference 2.3.4 Heart

39. A 45-year-old man with leukaemia presents with fever and a petechial rash and he is in circulatory shock. You are concerned that this could be Disseminated Intravascular Coagulation (DIC). Which of the following investigations are useful to diagnose DIC?
- A. Activated partial thromboplastin time (aPTT)
 - B. Fibrinogen level
 - C. Haemoglobin level
 - D. Platelet count
 - E. Prothrombin time (PT)

The correct answers are B,D,E. Disseminated intravascular coagulation is characterized by inappropriate, widespread activation of the coagulation system, resulting in generation of intravascular thrombi, small vessel thrombosis and consumption of clotting factors and platelets. The fibrinolytic system is also activated and this results in breakdown of fibrin clots and bleeding. Curriculum reference 2.3.16 Hematology and coagulation

40. A 22-year-old man who is known to have Type 1 Diabetes Mellitus presents with fatigue, abdominal pain and vomiting. Which of the following lab results would be consistent with a diagnosis of DKA in this patient?
- A. Blood glucose level: 15 mmol/L (270 mg/dl)
 - B. Serum osmolality: 300 mosm/kg
 - C. Bicarbonate: 18 mmol/L (18 mEq/L)
 - D. Blood pH: 7.24
 - E. Blood ketones: 6 mmol/L

The correct answers are A,D,E. Diabetic ketoacidosis is diagnosed by a blood glucose level of >13.9 mmol/L (> 250 mg/dL), an anion gap > 10 mmol/L, bicarbonate < 15 mmol/L (< 15 mEq/L) and a pH < 7.3 with moderate ketonuria or ketonemia. Curriculum reference 2.3.17 Diabetic ketoacidosis

41. A 61-year-old woman is brought to the ED because she collapsed in the supermarket and she is still very lethargic. Her rhythm strip is attached. You decide to treat this patient with atropine. Which of the following side effects could you expect?



- A. Cold peripheries
- B. Dry mouth
- C. Nausea
- D. Photophobia
- E. Tremors

The correct answers are B,C,D. Atropine is an anticholinergic drug. Common side effects include flushing, dry mouth, nausea, headache, photophobia and blurriness of near vision. Curriculum reference 2.2.1 Abnormal vital signs

42. You are seeing a patient with hyperthermia, reduced level of consciousness and generalised muscle rigidity which started 3 days after starting treatment with trifluoperazine. You suspect that he has neuroleptic malignant syndrome. Which of the following signs or symptoms are also compatible with this diagnosis?
- A. Hot and dry skin
 - B. Psychomotor agitation
 - C. Resting tremors
 - D. Refractory hypotension
 - E. Urinary incontinence

The correct answers are B,C,E. Neuroleptic malignant syndrome is a potentially fatal idiosyncratic complication of treatment with anti-psychotic drugs. Signs and symptoms reflect blockade of dopamine D2 receptors resulting in sympathoadrenal hyperactivity and dysregulation.
Curriculum reference 2.2.3 Fever

43. A 32-year-old man is brought into resus in VF cardiac arrest after drowning in a cold lake. His core temperature is 21°C. Which of the following factors must be considered during cardiorespiratory resuscitation (CPR) of this patient?
- A. Intubation should be delayed to avoid triggering VF
 - B. One should check for signs of life for up to 3 minutes before starting CPR
 - C. Use of mechanical chest compression devices should be avoided
 - D. Adrenaline should be administered only if core temperature is $\geq 30^{\circ}\text{C}$
 - E. VF can be shocked up to 3 times if core temperature is $< 30^{\circ}\text{C}$

The correct answers are D, E. The latest ERC guidelines state that one should check for the presence of vital signs for up to 1 minute. Intubation should not be delayed and there are no contraindications to use of mechanical chest compression devices. Adrenaline should be withheld if the core temperature is less than 30°C and in the case of VF cardiac arrest, only 3 shocks are allowed until the core temperature is $> 30^{\circ}\text{C}$
Curriculum reference 2.2.1 Resuscitation; ERC guidelines, 2021

44. You are teaching your junior doctor about the physics of ultrasound. Regarding the frequency of ultrasound waves in tissues, which of the following are correct?
- A. Lower frequency waves are best for viewing fine detail
 - B. Increasing frequency will improve tissue penetration
 - C. Frequency is inversely proportionate to wavelength
 - D. Increasing frequency will increase velocity of the sound waves
 - E. The velocity of ultrasound waves varies in different soft tissues

The correct answers are C,E.
Curriculum reference 2.4.8 Point of care Ultrasound

45. A 26-year-old intravenous drug user presents with fever, dyspnoea and heart murmur. Your diagnosis is infective endocarditis. What are the classic skin findings you will look for in your clinical examination?
- A. Painless macules on the palms
 - B. Tender nodules on the fingers
 - C. Erythematous rash on the palms
 - D. Spider angiomas on the back
 - E. Splinter haemorrhages

The correct answers are A,B,E. Osler's nodes, Janeway lesions and splinter haemorrhages are found in less than 10% of patients with endocarditis
Curriculum reference 2.3.4 Heart

46. A 40-year-old woman presents with sudden onset of severe central chest pain and syncope. A point of care ultrasound shows dilatation of the aortic root. Which of the following are associated with aortic dissection?
- A. Marfan's syndrome
 - B. Polycystic kidney disease
 - C. Second trimester of pregnancy
 - D. Tetralogy of Fallot
 - E. Use of cocaine

The correct answers are A, B, E. Marfan's Syndrome, Ehlers Danlos and Polycystic disease are associated with aortic dissection. Other causes of a dilated aortic root such as bicuspid aortic valve or aortitis, as well as accelerated atherosclerosis (such as Cocaine or Amphetamine abuse), are also at increased risk for dissection.

Curriculum reference 2.3.5 Circulation and Vascular

47. A 21-year-old man presents to the ED with a 3 day history of hiccups which persisted even at night. Which of the following measures can be useful to terminate hiccups?
- A. Breath-holding F
 - B. Carotid sinus massage F
 - C. Drink water slowly F
 - D. Sip ice water T
 - E. Swallow a teaspoon of sugar T

The correct answers are D,E. Drinking water quickly, swallowing a spoonful of sugar, and ice, are physical measures used to alleviate hiccups.

Curriculum reference Gastrointestinal

48. A 68-year-old alcohol abuser presents with massive gastrointestinal bleeding. His initial hemoglobin level is 4g/dL. The massive blood transfusion protocol is triggered. Which of the following complications could follow administration of large volumes of blood products?
- A. Hyperkalaemia
 - B. Hypercalcaemia
 - C. Hyperphosphataemia
 - D. Hypomagnesaemia
 - E. Hypothermia

The correct answers are A,D,E. Large volume transfusion may cause a variety of electrolyte imbalances such as hypocalcemia, hypomagnesaemia, hypokalemia or hyperkaliemia.

Curriculum reference 2.3.16 Hematology & Coagulation

49. A 77-year-old woman presents with confusion. Which of the following clinical features are consistent with a diagnosis of delirium?
- A. Fluctuating course over 24 hours
 - B. Reduced level of consciousness
 - C. Normal attention span
 - D. Visual hallucinations
 - E. Normal orientation

The correct answers are A,B,D. The onset of delirium occurs typically over a few days and has a fluctuating course. Hallucinations tend to be visual with delirium, while in psychiatric disorders they are auditory.

Curriculum reference 2.2.5 Confusion/delirium

50. A 1-year-old child presents with cough, shortness of breath, wheezing and feeding difficulties and you suspect that she has bronchiolitis. Which of the following statements regarding bronchiolitis are true?
- A. It is usually caused by RSV (Respiratory Syncytial Virus)
 - B. It occurs more commonly in summer
 - C. Most affected children are aged 1-9 months
 - D. Males and females are affected equally
 - E. It is more severe in younger children

The correct answers are A,C,E. Bronchiolitis is the most common lower respiratory tract infection in children aged less than 2 years. It is usually caused by respiratory syncytial virus and the course is more severe in younger children.

Curriculum reference 2.3.2 Lung-bronchiolitis

51. A 67-year-old man is brought to the ED with undifferentiated shock after he was found collapsed in the street. You use the RUSH (Rapid Ultrasound for Shock and Hypotension) protocol and you find the inferior vena cava to be 2.8 cm in diameter, with no inspiratory collapse. This finding may be consistent with:
- A. Acute haemorrhage
 - B. Cardiac tamponade
 - C. Myocardial infarction
 - D. Pulmonary embolism
 - E. Volume depletion

The correct answers are B,C,D. The RUSH exam is useful in evaluation of undifferentiated shock. It looks for evidence of specific conditions such as exacerbation of congestive heart failure, cardiac tamponade, pneumothorax and abdominal aortic aneurysm.

Curriculum reference 2.4.8 Point of care Ultrasound

52. An 88-year-old woman is brought to the ED from her home by her carer 3 days after she allegedly fell down a few steps. On examination you find multiple bruises of varying ages and you suspect elder abuse. Which of the following would place this elderly person at a high risk for being abused?
- A. Aggressive behaviour
 - B. Cognitive impairment
 - C. Decreased mobility
 - D. History of psychiatric illness
 - E. Lack of social support

The correct answers are A,B,D,E. Elder abuse is widely under-reported. Several risk factors are recognized, such as female gender, physical dependency, cognitive impairment, lack of social support, difficult behaviour and history of psychiatric illness.

Curriculum reference 2.5. suspected abuse

53. A 53-year-old man who works in a steel company presents with lethargy. Which of the following would support a diagnosis of lead poisoning?
- A. Depression
 - B. Gout
 - C. Hyperactivity
 - D. Hyperreflexia
 - E. Renal insufficiency

The correct answers are A,B,E. Lead poisoning causes constitutional symptoms, such as generalized weakness, weight loss and joint pains, as well as gastro-intestinal and hematologic symptoms and signs.

Curriculum reference 2.3.19 poisoning

54. A 30-year-old woman who delivered a baby 3 weeks ago presents with extreme fatigue and guilt feelings about being a "bad" mother. You suspect postpartum depression. Which of the following are risk factors for postpartum depression?
- A. Difficult labour
 - B. Low socio-economic status
 - C. Older age group
 - D. Primiparity
 - E. Prior depression

The correct answers are B,E. Post-partum depression typically occurs within 1 month of delivery. Risk factors include prior history of depression, young age, low socio-economic status and partner abuse.

Curriculum reference 2.5. postpartum depression

55. A 16-year-old, previously healthy man presents with sudden onset of severe pleuritic right-sided chest pain. He has reduced air entry and a hyper-resonant percussion note on the right. You perform a chest ultrasound. Which of the following findings would suggest that this patient has a pneumothorax?
- A. Apical Z lines
 - B. Bar code sign
 - C. Lung point
 - D. Pleural sliding
 - E. Presence of A lines

The correct answers are B,C,E. The sensitivity of ultrasound for diagnosis of pneumothorax is approximately 98%. Typical signs are the presence of A lines, bar code sign and absence of pleural sliding. The lung point is the junction between the sliding lung and absent sliding.

Curriculum reference 2.4.8 point of care ultrasound

56. A 54-year-old man with a history of liver cirrhosis and oesophageal varices is brought to the ED with haematemesis. Which of the following would predict a requirement for activating the massive transfusion protocol?
- A. History of previous massive transfusion
 - B. Systolic blood pressure < 90 mmHg
 - C. Heart rate > 120 / minute
 - D. Initial haematocrit < 30%
 - E. Platelet count < 150,000/mcL

The correct answers are A,D,E. Massive transfusion protocol is a specific process involving rapid administration of large amounts of blood products in fixed ratios including platelets and clotting factors. This is used in exsanguinating hemorrhage where refractory hemorrhage may develop due to a collection of factors including dilution of clotting factors. This can be predicted therefore by the initial lab results, whether the patient is unstable despite initial resuscitation and the expected trajectory of the bleeding. In this case the previous transfusion and suggestion of dilution (HCT) and low platelets predicts the need. Initial hypotension and tachycardia do not alone predict the need to activate the MTP.

Curriculum reference 2.2.7 situation Major trauma

57. A 50-year-old man with a long history of alcohol abuse and epilepsy is brought to your ED with confusion. While being assessed he has a generalised seizure. Which of the following are possible causes of his seizure?
- A. Alcohol-induced hypoglycaemia
 - B. Alcohol withdrawal
 - C. Liver failure
 - D. Hypermagnesaemia
 - E. Missed doses of anti-convulsants

The correct answers are A,B,E. the commonest cause of a seizure in an alcohol dependent patient is withdrawal or missed dose of anti-convulsant. Hypoglycemia is relatively common in these patients as they don't eat well and hence must be considered. Hypomagnesemia is more likely than hypermagnesemia and liver failure itself would not cause convulsions
Curriculum reference 2.3.19 – poisoning, 2,2,3 other symptoms

58. An 18-year-old man who is a known asthmatic, presents to the ED with an exacerbation of his asthma. Which of the following symptoms are typical of acute severe asthma?
- A. Dyspnoea at rest
 - B. PEFr < 60% of predicted
 - C. Persistent cough
 - D. Inability to complete sentences
 - E. Psychomotor agitation

The correct answers are A,D. In acute severe asthma, persistent cough is not a typical sign as the patient is too breathless to cough. Psychomotor agitation may be present but is not typical. Peak flow should be <50% of predicted to be classified as acute severe asthma
Curriculum reference 2.3.3 diagnoses and syndromes, lung,

59. The hospital administration is discussing ways to improve care in the ED. A screen reflecting waiting time is proposed to install in the waiting room. What would be the advantages of this screen?
- A. Helps patients to be seen more quickly
 - B. Reduces number of complaints
 - C. Increases patient satisfaction
 - D. Facilitates the triage process
 - E. Improves staff morale

The correct answers are B,C. Sharing information with patients helps improve the relationship with patients (b and C) but has no impact on the actual efficiency of the processes in the department or the decisions made by the clinical staff. Staff morale is not affected by information about waiting times which is usually visible to staff on their patient records system
Curriculum reference 2.6.2 Professional competences - communication and collaboration

60. A 21-year-old man presents after taking a few tablets of Ecstasy (MDMA) with severe agitation, sweating, muscle fasciculation and a fever of 39.8°C. Which of the following measures are useful to treat the hyperpyrexia?
- A. Dantrolene IV
 - B. Diazepam IV
 - C. External cooling devices
 - D. Oral NSAIDS
 - E. Paracetamol IV

The correct answers are A,B,C. Hyperpyrexia in MDMA use is due to catecholamine and serotonin release. This causes serotonin syndrome with hyperthermia, mental status changes, autonomic instability and altered motor tone and/or rigidity. Treatment is therefore aimed a physical cooling as well as muscle relaxation and dantrolene which is thought to act as a muscle relaxant in this case. Normal antipyretics which work by altering the chemistry of prostaglandins in the brain are therefore unhelpful in this context
Curriculum reference 2.3.19 Diagnosis and syndromes - poisoning