

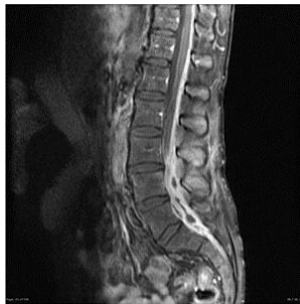
SINGLE BEST MCQs

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?

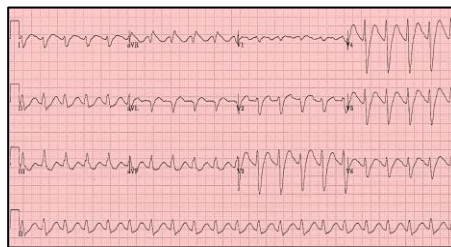


- A. Bullous pemphigus
- B. Erythema multiforme
- C. Granuloma annulare
- D. Herpes simplex
- E. Urticarial vasculitis

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

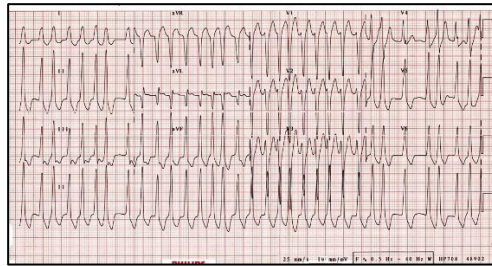
The correct answer is B. This is an internationally used symbol to indicate the actual or potential presence of a biohazard.
Curriculum reference 2.6.1 - Disaster medicine

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