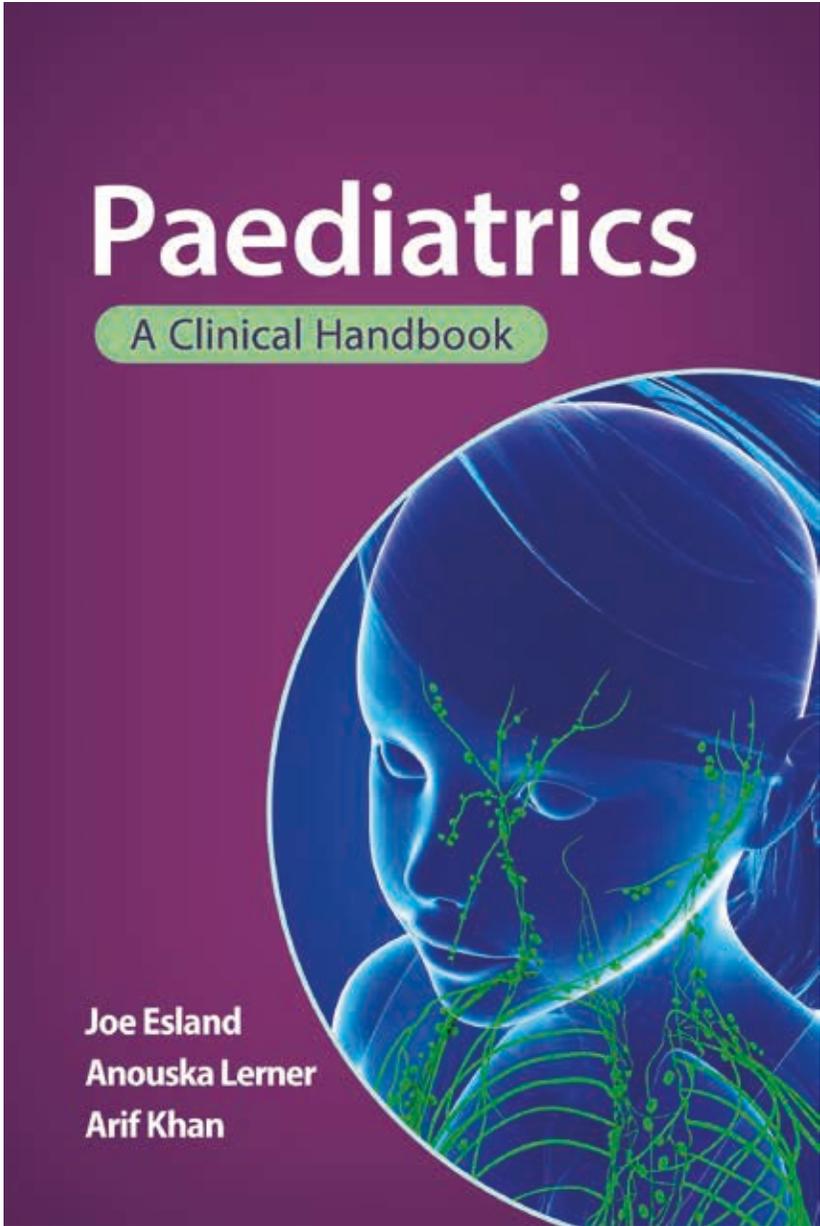


Self-assessment questions



Short Answer Questions

- 1. An 18-month-old child presents with a 3-day history of diarrhoea and vomiting. They look well from the end of the bed. You diagnose viral gastroenteritis but are concerned that they are dehydrated.**
 - A. Broadly, the clinical features of dehydration can be categorized into which two groups?
 - B. How is the severity of dehydration graded?
 - C. What specific clinical signs would you assess?
 - D. The child's mucous membranes are dry, but the rest of the clinical examination is unremarkable. You decide they can be managed at home; what important complication must the parents be made aware of?
- 2. You are called to see a 2-hour-old neonate who, the nurse reports, is 'grunting'. They were delivered at 34/40 to a diabetic mother, but the pregnancy was otherwise uncomplicated. When you arrive, the patient is grunting, tachypnoeic and distressed. You think they have respiratory distress syndrome (RDS).**
 - A. What are the major risk factors for RDS?
 - B. Describe the role of surfactant in the lung.
 - C. What are the main features of respiratory distress in a neonate?
 - D. What investigations are needed and what would they show?
 - E. What is the initial treatment for this neonate?
- 3. A premature neonate presents at 10 days of age with vomiting, bloody diarrhoea and a distended abdomen. They look unwell and are febrile.**
 - A. What is the most important differential to consider in this patient?
 - B. What investigations are required?
 - C. What initial treatment is required?
 - D. When is surgical intervention required?
 - E. What are the most important differential diagnoses?
- 4. A 12-month-old infant is referred for assessment because they are not gaining weight at the expected rate.**
 - A. What is the specific definition of 'failure to thrive' (FTT)?
 - B. Broadly, the causes of FTT can be divided into 4 groups. Describe these and give example aetiologies.
 - C. Describe how a child's growth is formally assessed.
 - D. The clinical examination and investigations are unremarkable, so you think the most likely cause is non-organic and simply recommend increasing the child's calorie intake. Which healthcare professional is of high importance in ensuring this is managed well?

- 5. A 4-month-old child is brought to the Emergency Department with a deformed left humerus. Whilst examining them you notice bruising behind the ears. The mother states that she thinks the child crawled off a kitchen surface yesterday, although she didn't see it happen.**
- What features of the history are concerning for child abuse?
 - What important differential diagnosis should you consider in a child with multiple bruises?
 - What important differential diagnoses should you consider in a child presenting with a fracture?
 - What are some essential initial steps that you must take, as the junior doctor, in this situation?
- 6. A 3-year-old child presents to the Emergency Department after her parents notice that she's become less responsive, is feeding poorly and has a temperature of 39.6°C.**
- How should the temperature be measured in children?
 - Using a systematic approach, what are the differential diagnoses for children with an acute fever?
 - What basic investigations should be considered?
 - Investigations and management are guided by assessing the seriousness of the illness. What system has been devised to assist with this?
 - When are antipyretics indicated in the management of an acute fever?
- 7. A 10-year-old boy attends his GP practice with itchy eyes and sneezing since a cat has been brought into the family home.**
- What is the likely diagnosis?
 - What is the pathophysiology of this condition?
 - What are the most important risk factors that should be asked for in the history?
 - What are the most important initial treatment options for allergic rhinitis?
- 8. A 6-year-old child presents to the Emergency Department with a sore throat and an inability to swallow their saliva for the last 3 hours. They look unwell and are febrile. You discover that the child has not received any vaccinations and suspect epiglottitis.**
- Describe the basic pathophysiology of epiglottitis.
 - Describe the early and late symptoms of epiglottitis.
 - What are some important examination findings in epiglottitis?
 - Where should this patient be managed?
 - What treatments are required?
- 9. A neonate with Down syndrome has not passed meconium within 48 hours of birth. You suspect Hirschsprung disease.**
- Which other diagnosis is an important differential for the delayed passage of meconium?
 - Describe the pathophysiology of Hirschsprung disease.
 - On examination, the child is febrile, with a distended, tender abdomen. Why are these clinical features of high importance?
 - What is the definitive investigation for diagnosis?
 - How is uncomplicated Hirschsprung disease treated?

10. At birth, a male neonate is found to be clinically cyanosed and looks unwell. Their saturations are 82% on room air.

- A. Broadly, how can the aetiologies of cyanotic heart disease be grouped?
- B. The patient is found to have transposition of the great arteries (TGA). Describe the anatomy found in this disease.
- C. What are the characteristic features on the CXR?
- D. What measures are taken to ensure ongoing mixing of the left and right circulations?
- E. What is the definitive treatment required?

11. A 5-month-old infant presents to the Emergency Department with lethargy and irritability. They are not feeding well and they have a fever. A urine sample is sent and is positive for *E. coli*. This is the 4th episode since birth.

- A. How would you describe this urinary tract infection (UTI)?
- B. What are the important risk factors to consider in this patient?
- C. Which investigations are required for this patient?
- D. What acute treatment is required?
- E. What are some preventative measures that can be initiated, to try to reduce recurrence?

12. An 8-year-old girl presents to the Emergency Department with a headache and photophobia. She has sickle cell disease, but is otherwise well. You suspect meningitis.

- A. What do you think are the likely causal organisms in this case and why?
- B. Describe the clinical tests performed to assess meningeal irritation.
- C. You send a panel of bloods, blood cultures and perform a lumbar puncture. Describe the appearance, white cells present, protein content and glucose content of the CSF in bacterial meningitis.
- D. When is treatment for meningitis commenced and what does it include?
- E. What are the main complications of meningitis?

13. A 7-year-old child presents to the GP practice with a painful limp.

- A. You decide to take a history and ask specifically about 'red flags'. What 'red flag' questions do you need to ask, and which broad pathologies do these questions aim to address?
- B. The child has been feeling non-specifically unwell and feverish. They recently had a short course of antibiotics for an infected wound that they sustained whilst out playing. What diagnosis would you suspect?
- C. What clinical signs would you expect to find on examination?
- D. How would you investigate this case?
- E. What is the treatment for septic arthritis?

14. A 14-year-old child presents with severe pain in their lower back and left leg. They are known to have sickle cell disease.

- A. Describe the underlying pathophysiology of sickle cell disease (SCD).
- B. What is the cause of this child's presentation and what are the normal precipitants?
- C. What investigations might you perform?
- D. What treatment is required for a vaso-occlusive crisis?

15. A 6-year-old child presents to the Emergency Department with abdominal pain and a non-blanching rash affecting the buttocks and legs. You suspect that the patient has Henoch–Schönlein purpura (HSP).

- A. Describe the basic pathophysiology of HSP.
- B. What is the 'tetrad' of HSP?
- C. What are some important differentials for a non-blanching rash?
- D. What investigations are required?
- E. What is the mainstay of treatment?

16. A pregnant woman is at her 12-week pregnancy dating scan. She is offered the triple test to screen for Down syndrome.

- A. What markers are measured in the triple test and how are they altered in a high-risk pregnancy?
- B. What are some of the common phenotypic features in Down syndrome involving the:
 - i. face
 - ii. hands and feet
- C. State some common complications affecting the following body systems in Down syndrome:
 - i. Gastrointestinal
 - ii. Cardiovascular
 - iii. Neurological
 - iv. Endocrine

17. A 2-year-old child is brought in to the Emergency Department with a persistent cough, which followed an unwitnessed bout of sudden coughing and choking the previous day.

- A. What is the likely aetiology for this child's cough?
- B. What are the sequelae of an aspirated foreign body?
- C. If a CXR does not demonstrate a foreign body, what is the gold standard investigation for diagnosis?
- D. What preventative measures can be recommended to reduce the incidence?

18. A 2-year-old child attends their GP practice with faltering growth, abdominal pain and variable bowel habit. Their mother thinks her child may have coeliac disease, as she suffers from the condition herself.

- A. In what common foodstuffs is gluten found?
- B. Describe the pathophysiology of coeliac disease.
- C. What is the classical habitus of an infant affected by the disease?
- D. What investigations are required?
- E. How is coeliac disease treated?

19. A 10-month-old infant attends the Emergency Department with severe abdominal pain, bilious vomiting and 'redcurrant jelly' stools. You suspect intussusception.

- A. Where are the most common sites for intussusception in the bowel?
- B. Describe the pathological sequence of events that underpin this condition.
- C. Describe the classical abdominal examination findings.
- D. Which imaging types can be used for diagnosis?
- E. In the absence of peritonism, how are these children treated?

20. A 3-year-old child, who has been suffering with an upper respiratory tract infection, attends the Emergency Department following a first seizure. You think they have likely had a febrile convulsion.

- A. What are some of the most pertinent negatives that you must ensure you address in the history and examination?
- B. How is the diagnosis made?
- C. What is the management of a febrile convulsion?
- D. What advice should parents be given about managing seizures in the community?

Single Best Answer Questions

- 1. An 18-month-old child attends the Emergency Department with a short history of being non-specifically unwell. They have lost 10% of their body weight. Which of the following is NOT a feature of interstitial fluid depletion?**
 - A. Sunken anterior fontanelle
 - B. Reduced skin turgor
 - C. Reduced urine output
 - D. Sunken eyes
 - E. Dry mucous membranes
- 2. Which of the following clinical signs is a feature of a narrowed upper airway?**
 - A. Wheeze
 - B. Stridor
 - C. Crackles
 - D. Tracheal tug
 - E. Nasal flaring
- 3. A neonate becomes rapidly cyanosed within the first few days of life. They have a loud ejection systolic murmur that is easily heard with the stethoscope. There is no thrill present. What grade is this murmur on the Levine scale?**
 - A. Grade 1
 - B. Grade 2
 - C. Grade 3
 - D. Grade 4
 - E. Grade 5
- 4. You are assessing a 15-year-old boy with diplegic cerebral palsy. On examination, you note that his plantar reflexes are upgoing and his patellar tendon reflexes are exaggerated. What spinal nerve roots does striking the patellar tendon assess?**
 - A. L2/L3
 - B. L3/L4
 - C. L4/L5
 - D. L5/S1
 - E. S1/S2
- 5. You are assessing the growth of a 10-week-old child who was born at 34 weeks' gestation. On the growth chart, what age should the child be plotted as?**
 - A. 4 weeks
 - B. 5 weeks
 - C. 7 weeks

- D. 9 weeks
 - E. 10 weeks
- 6. You are working in a General Practice and are asked to review a child who the mother thinks has delayed developmental milestones. Regarding these, which of the following is true?**
- A. The sequence of milestone accrual is variable
 - B. If not accrued within a defined upper limit, this is sometimes abnormal
 - C. A 'red flag' is when a trait is gained earlier than expected
 - D. The time at which a trait is acquired is variable, but always follows a predictable sequence
 - E. There are 5 groups of skills assessed in the developmental milestones
- 7. Regarding the foetal circulation, which of the following shunts bypasses the foetal liver?**
- A. Ductus arteriosus
 - B. Ductus venosus
 - C. Foramen ovale
 - D. Placenta
 - E. Umbilical artery
- 8. Regarding the heel prick test (Guthrie card), performed on day 5 of life, which of the following conditions is NOT screened for?**
- A. Congenital adrenal hyperplasia
 - B. Sickle cell disease
 - C. Phenylketonuria
 - D. Cystic fibrosis
 - E. Congenital hypothyroidism
- 9. You are asked to review a child with hypothermia. The below are all ways by which babies lose heat, with the EXCEPTION of:**
- A. Convection
 - B. Evaporation
 - C. Conduction
 - D. Condensation
 - E. Radiation
- 10. A 1-week-old premature neonate has become acutely unwell, has started vomiting and has a distended abdomen. They are febrile on examination. Considering the likely diagnosis, what will the AXR show?**
- A. Pneumatosis intestinalis
 - B. Small bowel dilatation
 - C. A 'target sign'
 - D. A 'double bubble'
 - E. 'Soap bubbles'

- 11. An 18-month-old boy presents with acute frank rectal bleeding, but an otherwise unremarkable history. The examination is normal. You suspect that this is a haemorrhagic Meckel diverticulum. Regarding the embryological origin of this, a Meckel diverticulum is a remnant of the:**
- A. Allantois
 - B. Vitellointestinal duct
 - C. Yolk sac
 - D. Cloaca
 - E. Mesonephric duct
- 12. Regarding the features of tetralogy of Fallot, which of the following is NOT present?**
- A. Ventricular septal defect
 - B. Overriding aorta
 - C. Pulmonary valve stenosis
 - D. Right ventricular hypertrophy
 - E. Atrioventricular septal defect
- 13. A newborn baby is noted to be cyanosed within hours of birth. Which of the following is the least likely cause?**
- A. Tetralogy of Fallot
 - B. Truncus arteriosus
 - C. Ventricular septal defect
 - D. Hypoplastic left heart syndrome
 - E. Transposition of the great vessels
- 14. A 17-year-old boy, who has recently moved to the UK from India, presents to the Emergency Department with breathlessness and a new cyanosis. His fingers are clubbed. The JVP is elevated. He has hepatomegaly and a parasternal heave. There is a loud murmur on auscultation. What is the likely diagnosis?**
- A. Eisenmenger syndrome
 - B. Brugada syndrome
 - C. Takotsubo cardiomyopathy
 - D. Stiff heart syndrome
 - E. Williams syndrome
- 15. A 3-year-old infant has had four UTIs in the last few years and is referred for further imaging. This shows a duplex kidney. What is the underlying anatomical defect in this condition?**
- A. The upper and lower poles of left and right kidneys are fused
 - B. There is a second, smaller kidney on the same side of the body
 - C. The lower poles of the kidneys are fused in the midline
 - D. A kidney with two separate pelvicalyceal systems
 - E. The kidney has two upper and two lower poles

16. Regarding the sequelae of nephrotic syndrome, the following are all present EXCEPT:

- A. Hypertension
- B. Hypercoagulability
- C. Higher risk of infection
- D. Hypovolaemia
- E. Hypercholesterolaemia

17. An 11-year-old boy is seen in his GP practice with enuresis, despite having been continent of urine for many years previously. The following are all examples of secondary causes EXCEPT:

- A. Diabetes mellitus
- B. Posterior urethral valve
- C. UTI
- D. Emotional distress
- E. Constipation

18. Which of the following neurological motor terms is INCORRECTLY paired with its description:

- A. Atonic: sudden loss of muscle tone
- B. Clonic: sustained rhythmic jerking of the limbs
- C. Grand mal: initial stiffening, followed by rhythmic jerking
- D. Tonic: stiffness of the limbs
- E. Myoclonic: repetitive, purposeless actions

19. An 18-month-old child is brought into the Emergency Department following a 'seizure'. It is reported that the child tripped whilst running, which was followed by an episode of cyanosis, loss of consciousness and jerking of the limbs. This quickly resolved. The examination is unremarkable. Based on this story, what is the most likely diagnosis?

- A. Psychogenic non-epileptic seizure
- B. Epilepsy
- C. Breath-holding spell
- D. Head injury
- E. Tic disorder

20. A 14-year-old female presents to her GP practice with severe, unilateral headaches. These are described as 'stabbing' and are felt retro-orbitally. The GP thinks that the diagnosis is likely to be cluster headaches, so asks for associated symptoms. Which of the following is NOT a feature of cluster headaches?

- A. Ipsilateral red eye
- B. Nasal congestion
- C. Vomiting
- D. Eye watering (epiphora)
- E. Facial sweating

- 21. A 13-year-old female returns to her GP with frequent, recurrent migraines. These are severe and interfering with her schooling. Which of the following medicines is most suitable as prophylaxis?**
- A. Ibuprofen
 - B. Verapamil
 - C. Sumatriptan
 - D. Propranolol
 - E. Paracetamol
- 22. A 7-year-old girl presents to her GP practice with a painless, unilateral reduction in her visual acuity. There is subtle proptosis and a relative afferent pupillary defect on examination. She is referred for an MRI that demonstrates an optic nerve glioma. Her mother has neurofibromatosis-1 (NF1). Regarding the diagnostic features, which of the following is NOT a feature?**
- A. Café au lait spots
 - B. Vestibular schwannoma
 - C. Lisch nodules
 - D. Axillary/inguinal freckling
 - E. Anterolateral tibial bowing
- 23. Regarding cerebral palsy (CP), which of the following features should alert you to an ALTERNATIVE diagnosis?**
- A. Loss of attained abilities
 - B. Motor abnormalities
 - C. Delayed developmental milestones
 - D. Persistence of primitive reflexes
 - E. Learning disability
- 24. A 4-year-old child attends the Emergency Department with a limp, complaining bitterly of left hip pain. They have recently had a sore throat. Their observations are unremarkable. There is a moderately reduced range of motion. The WCC is 9 and CRP is 18. What is the most likely diagnosis?**
- A. Transient synovitis
 - B. Juvenile idiopathic arthritis
 - C. Septic arthritis
 - D. Malignancy
 - E. Perthes' disease
- 25. Regarding the causes of septic arthritis, which organism is most common in children with sickle cell disease?**
- A. *Haemophilus influenzae B*
 - B. *Staphylococcus aureus*
 - C. *Salmonella* spp.

- D. *Neisseria gonorrhoeae*
- E. *Streptococcus pneumoniae*

26. A 10-year-old female presents with weakness and non-specific joint pains. On examination, you notice that she has a purple discoloration of the eyelids and thickened papules over the extensor surfaces of her hands. Given the likely diagnosis, which of the following blood tests is most useful?

- A. Anti-dsDNA
- B. RhF
- C. Anti-Sm
- D. ANA
- E. CK

27. Regarding achondroplasia, which of the following bones would be unaffected by the underlying pathophysiology?

- A. Femur
- B. Clavicle
- C. Humerus
- D. Vertebrae
- E. Tibia

28. A 14-year-old with Crohn's disease attends their GP practice with increasing fatigability and irritability. Their exercise tolerance has reduced recently. Blood tests demonstrate iron-deficiency anaemia. Which of the following is NOT consistent with this diagnosis?

- A. Low MCV (mean corpuscular volume)
- B. Low ferritin
- C. Low transferrin saturation
- D. Low Hb
- E. Low TIBC (total iron-binding capacity)

29. A 16-year-old female with sickle cell disease presents to the Emergency Department with chest pain and breathlessness. She is febrile and has chest crepitations on examination. Which of the following investigations is of lowest clinical utility acutely?

- A. Reticulocyte count
- B. Arterial blood gas
- C. Blood film
- D. CXR
- E. CRP

30. An 8-month-old infant is brought to the Emergency Department with excessive bleeding after a small cut following a fall. They have had a number of similar episodes prior to this. Regarding the features of haemophilia, which of the following is true?

- A. Haemophilia A affects Factor VII and Haemophilia B affects Factor VIII
- B. Spontaneous haemarthroses are a prominent feature of even mild disease

- C. The extrinsic coagulation pathway is affected
- D. The prothrombin time (PT) is normal, but the activated partial thromboplastin time (APTT) time is prolonged
- E. Recombinant clotting factors are given, to keep levels near 100% in affected children

31. You are asked to review a 1-week-old neonate with an erythematous, blanching, macular rash on their buttocks. They are otherwise well with normal observations. What is the most likely cause?

- A. Erythema toxicum neonatorum (ETN)
- B. Scarlet fever
- C. Capillary malformation
- D. Café au lait spot
- E. Infantile haemangioma

32. Regarding chickenpox (varicella zoster virus), which of the following is INCORRECT?

- A. The child may return to school once the lesions have scabbed over (~day 5)
- B. The diagnosis is clinical
- C. Aspirin may be given for fever, if it is distressing the child
- D. The child should stay away from pregnant women
- E. Encephalitis is a rare complication of chickenpox

33. A 5-year-old child attends their GP practice with a rash on their face and arms. They have been feeling non-specifically unwell for the last week. The rash affects the cheeks, but spares the nose, philtrum, mouth and eyes. They have a lacy rash on the extensor surfaces of their arms. What is the likely diagnosis?

- A. Rubella
- B. Fifth disease
- C. Hand, foot and mouth disease
- D. Measles
- E. Mumps

34. A 4-year-old child presents to the Emergency Department with a 4-day history of irritability and a fever. On examination, they have a widespread rash, cracked lips with a red, inflamed tongue and red, sore eyes. The skin on their hands is peeling. Considering the most likely diagnosis, what is the most important acute complication of this disease?

- A. Cardiac arrhythmia
- B. Encephalitis
- C. Avascular necrosis of the femoral head
- D. Pulmonary infarct
- E. Coronary artery aneurysm

- 35. An 11-year-old boy is being treated with methylphenidate for attention deficit hyperactivity disorder (ADHD). Which of the following is true regarding its mechanism of action?**
- A. It inhibits the reuptake of dopamine
 - B. It promotes the reuptake of both dopamine and noradrenaline
 - C. It promotes the reuptake of dopamine
 - D. It inhibits the reuptake of both dopamine and noradrenaline
 - E. It inhibits the reuptake of serotonin
- 36. Regarding common chromosomal abnormalities, which of the following is due to a deletion of genetic material?**
- A. DiGeorge syndrome
 - B. Down syndrome
 - C. Patau syndrome
 - D. Klinefelter syndrome
 - E. Edwards syndrome
- 37. An 11-year-old girl is referred to the allergy clinic, having been recently treated in the Emergency Department for an anaphylactic reaction. The child does not know what the cause of this was, so the decision is taken to perform a skin prick test. Which class of immunoglobulin-mediated response does this test check for?**
- A. IgA
 - B. IgD
 - C. IgE
 - D. IgG
 - E. IgM
- 38. A 7-year-old child attends the Emergency Department in acute respiratory distress. They have a known diagnosis of asthma. Which of the following clinical findings is suggestive of a life-threatening exacerbation?**
- A. Peak expiratory flow rate (PEFR) 33–50% of predicted
 - B. Exhaustion
 - C. Inability to complete sentences in a single breath
 - D. Tachycardia
 - E. Oxygen saturations <92%
- 39. Regarding infertility in male patients with cystic fibrosis, which of the following is true?**
- A. The contents of the ejaculatory duct are thickened, meaning that they cannot pass down the urethra during ejaculation
 - B. There is congenital absence of the vas deferens

- C. There is impaired motility of the spermatozoa, meaning that they cannot move adequately through the female reproductive tract
- D. Venous stasis leads to testicular infarction in early life, resulting in impaired spermatogenesis
- E. There is mucus plugging in the reproductive tract, leading to impaired delivery of spermatozoa to the ejaculate

40. A 15-year-old girl is referred to the first seizure clinic. She has recently moved schools and her parents are in the process of a divorce. Her mother shows you a video of the seizure; what clinical feature is LEAST SUGGESTIVE of a psychogenic non-epileptic seizure (PNES)?

- A. Gradual onset
- B. Recall of the event
- C. A stressor which reliably causes seizure onset
- D. Synchronous jerking of the limbs
- E. Shaking the head from side to side