

Answers:

Q1. B. Only 1 and 3 are correct. The quadrilateral space is formed between subscapularis and teres major, but is in the posterior wall of the axilla. The leash of Henry can cause radial nerve symptoms.

Q2. C. Only 2 and 4 are correct. AASs cause testicular atrophy, and male pattern baldness.

Q3. A. The classical female athlete triad is amenorrhoea, eating disorder, and osteoporosis. Exercise has been reported as reducing dysmenorrhoea. Stress fracture incidence has an association with amenorrhoea, loss of bone density, and excessive training loads.

Q4. E. All of these can cause or predispose to subacromial impingement. Os acromiale may need excision or subacromial decompression.

Q5. B. 1 and 3 are correct. Whether a muscle is superficial or deep does not increase the risk of injury (ref: Noonan et al: Injuries at the myotend jn, ClinSpoMed, 92;11:783-806)

Q6. D. Only 4 is correct. The history suggests ACL rupture, but diagnosis requires adequate physical examination – MRI is an adjunctive test, and arthroscopy without surgical plan is inappropriate (ref: Reid, Sports Inj Assessment and Rehab.)

Q7. E. All are benefits of regular moderate exercise

Q8. B. There is no interosseous ligament between the bases of the first and second metatarsals, Lisfranc's ligament runs from the medial cuneiform to the base of the second metatarsal. Bonescan will show increased uptake in this region.

Q9. D. Resistance training causes concentric hypertrophy ( $\eta$ wall thickness, without  $\eta$ volume), endurance training causes eccentric hypertrophy ( $\eta$ wall thickness, and  $\eta$ volume), and neither are associated with disorganised fibre orientation (a feature of HCM). Early:late diastolic filling is normal in the athletic heart, and abnormal in HCM.

Q10. C. Appropriate treatment of lateral meniscal cyst involves arthroscopic cyst decompression and partial meniscectomy. Cyst aspiration and corticosteroid injection may give short-term relief, as may open excision, but neither address the underlying pathology and the cyst will usually reform.

Q11. D. Meniscal repair without ACL reconstruction has a risk of re-tearing, a displaced meniscal tear is unstable by definition and should be repaired or resected, and there is no rationale for using a knee brace locked at 30-90° prior to surgery (ref: DeHaven KE: Decision making factors in the tmt of meniscus lesions. ClinOrthop. '90, 252: 49-54

Q12. C. A ruptured globe is an ophthalmological surgical emergency, the patient should be transported urgently, and should be kept nil by mouth until seen. Anything that increases intraocular pressure may cause extrusion of globe contents – double eye pads and leg elevation are contraindicated (ref: Zagebaum BM: Sports related eye trauma. PSM, '93, 21(9), 25-42

Q13. A. Marfan's is an autosomal dominant connective tissue disorder diagnosed when there are two major criteria (from the skeletal, ophthalmic, or cardiac systems, lumbosacral dural ectasia is another major criteria), and at least one other system involved. Pulmonary and skin changes can make up minor criteria. A positive family history can take the place of one of the major criteria. The major cause of death is cystic medial necrosis  $\Rightarrow$  aortic dissection, rupture, rupture of aortic aneurism, or acute aortic incompetence (ref: Bauerman AC. Exercise and the Marfan syndrome. MSSE. '98; 30(10)Suppl: S397-95)

Q14. E. Mariani et al showed that conservative management of ruptured long head of biceps lead to 15-20% loss of forearm supination strength, 8-20% loss of elbow flexion strength, and no significant loss of abduction strength. Painful muscle cramps are an indication for surgical intervention (attachment of the tendon to the proximal humerus). (ref: Mariani et al. Rupture of the tendon of the LHOB... ClinOrtho '88; 228: 233-239

Q15. B. Brachial neuritis is a patchy demyelinating process of the nerves of the brachial plexus of unknown aetiology. There is a 25% association with recent viral infection and 15% association with recent immunisation, but no clear causal link. Acute severe shoulder pain that is unrelieved by simple analgesics or

position change, is usually the presenting complaint, with motor weakness only being noticed after the first few weeks. EMG shows patchy changes consistent with demyelination, and bilateral changes more commonly than seen clinically.

Q16. B. Panner's disease is an osteochondrosis seen in 7-12 year olds, elbow range of motion is usually normal, loose bodies are not a feature, and normal architecture is usually restored. OCD is a compressive cartilage splitting osteochondrosis seen in 13-16yos, resulting in flexion deformity, loose body formation, and deformity of the capitellum, often associated with radial head hypertrophy. (ref Stanitski et al. Paediatric and adolescent sports medicine. Saunders press).

Q17. D. >50% of the force for delivery of a baseball is generated in the legs. Maintaining leg strength is the most important part of the kinetic chain, and the other rehabilitation activities are less important. (ref Kibler WB: Rehab of the knee in baseball and tennis, in Rehab of the knee, Mosby, 1994)

Q18. E. All of these are true. The value of the PPE in preventing sudden cardiac death is questionable, but there is evidence that an appropriate history can identify athletes who should have further investigations.

Q19. A. Intersection syndrome is a bursitis that occurs where extensor pollicis brevis and abductor pollicis longus cross the radial wrist extensors. (ref: Brukner and Khan)

Q20. A. 4 is incorrect – there is a possible increased risk of rupture with injection into the tendon (ref: ClinJSpoMed, '94, 4(2): 77-82)

Q21. C. 1 is incorrect - continuous exercise is more asthmagenic, 3 is incorrect - duration of exercise is not important after 10 minutes. Swimming is less asthmagenic than cycling – standardising the inhaled air to reduce the effect of moisture still shows that swimming is better (?relates to  $\eta$ central volume  $\therefore$  less cooling or drying of airways) (ref: Sport Health, '94; 12(2): 12)

Q22. C. Calcaneonavicular coalitions are most common and are bilateral in 60%. Talocalcaneal coalitions are second most common, and are bilateral in 50%. Degenerative changes are a contraindication to taking down the coalition. Pes planus is common. (ref Stanitski et al)

Q23. B. This was a question to see if you were paying attention. You should know that lateral menisci are more mobile, and that medial menisci are more of an open curve than an almost complete circle  $\therefore$  the answer has to be B (1 = T, 2 = F  $\therefore$  3 must be T and 4 must be F), but discoid menisci do occur in 20% of Japanese people (lateral however, of course). (ref: Stanitski et al)

Q24. A. HCM is autosomal dominant, disorganisation of a number of cardiac myofilaments (commonly the - myosin gene), but not fibrillin, which is mutated in Marfan's. It causes outflow obstruction in only 25%, and an ejection systolic murmur best heard at the 4<sup>th</sup> intercostal space on the left sternal edge, and that increases with reduced venous return (e.g. valsalva)

Q25. E. All of these are seen in the presence of HCM. Voltage criteria for hypertrophy and septal wall thickness >15mm may be seen in athlete heart, but strain pattern is seen in 90% of patients with HCM, and septal wall thickness is usually <12mm in athletes. Abnormal E:A ratio (early:late diastolic filling) is characteristic of HCM. (ref Fields and Fricker)

Q26. A. 1, 2, and 3 all benefit patients with hypertension, increased renin production causes increased blood pressure and is independent of exercise. (ref ACSM SpoMed review)

Q27. D. A chest x-ray is not indicated, and histamine challenge and peak-flow diaries (which assess underlying airway irritation) are irrelevant. Even if they are normal at the moment, he still needs a hypertonic saline challenge.

Q28. E. Another one of those "are you using the rules" questions. All of these are considered contraindications to scuba diving by SPUMS - If you know 1 is true, then 3 is true (3 was the one I thought you would be least likely to know – mask squeeze can pop your eyeballs!)

Q29. B. Conductive hearing loss (e.g. tympanic membrane disruption) is characterised by a positive Rinne test on the affected side, and bone conduction TOWARDS the injured side with the Weber test (1 is true, 4 false). Diagnosing sensorineural hearing loss requires urgent ENT referral (for ?endolymph fistula), but can also be caused by decompression illness (3 is true, 2 is false).

Q30. D. Tympanic membrane rupture causes conductive hearing loss, will usually heal without intervention provided water is kept out of the ear (especially soapy water or pool water), and topical ear-drops should not be used unless an infection develops

Q31. C. Maximum heart rate does not increase, and nor do type IIB (fast twitch white) fibres. Stroke volume is the most significant change, and a-vO<sub>2</sub> also increases.

Q32. E. All of these are true – the last one is a distracter – typical of a bastard examiner (ref Last's)

Q33. C. Distal clavicular osteolysis is most commonly seen in weight trainers, and least commonly seen in throwers and racquet sports. It is an uncommon consequence of grade 3 or above AC disruption, but is more common with grade 1 and 2 injuries – commonly seen in contact sports like rugby. (ref Safran et al, Manual of Spo Med. Lippincott-Raven, '98)

Q34. C. Boutonnière deformity is associated with central slip disruption from the base of the MIDDLE phalanx, pseudo-boutonnière deformity may follow volar plate injury at the PIP joint, mallet finger requires 6 weeks continuous splinting of the distal interphalangeal joint only, and some authors recommend a further 6 weeks of night splinting, and jersey-finger IS an avulsion of flexor digitorum profundus and requiring surgical correction. (ref DeLee and Drez)

Q35. E. All of these are correct. (ref: Hough DO, Dec KL. Exercise induced asthma and anaphylaxis. SpoMed '94; 18(3), 162-72.)

Q36. A. The first three are true. The epi-pen however should only be used for symptoms of airway compromise or syncope (hence the need for a partner)

Q37. B. SH1 fractures cross the physis in the zone of hypertrophy, SH2 #s involve the metaphysis, not the articular surface, and are the most common type, SH3#s do cross the zone of proliferation and enter the articular surface, two reasons for particular care with reduction, SH4#s cross the physis, epiphysis and proximal metaphysis.

Q38. A. 1, 2, and 3 are true, osteblastomas are benign well circumscribed lesions, ≥2cm in diameter.

Q39. C. of mets are from breast or prostate, 1/6 are from lung > kidneys > thyroid > pancreas > stomach, and 1/6 have no primary identified. Carcinoma of the male breast is very rare, most commonly of the infiltrating duct type, M:F ratio is 150:1. (ref Harrison's, and Robbin's).

Q40. E. All of these are correct. (It's harder to make up lies). Severe osteoporosis is defined as <-2.5 AND ≥1 fragility fracture. (ref: Bone Densitometry: Choosing the Proper Skeletal Site to Measure. Faulkner KG. Journal of Clinical Densitometry 1(3):279-285, 1998.)

Q41. D. Just to show that I can make up some lies. Increased insulin sensitivity means less insulin is required. Hypoglycaemia is the most common acute metabolic complication of Type 1 DM, and hyperosmolar hyperglycaemic non-ketotic crisis is exclusive to type 2 diabetes. 4 is correct.

Q42. B. 1, and 3 are correct. The Glasgow Coma Scale is designed for assessing moderate to severe head injury, and should be assessed 6 hours after the injury in order to assess prognosis. Its immediate application is used to grade the severity of injury. All grades of concussion are classified as mild head injuries (i.e. transient by definition, ∴ no structural damage). (ref: Handbook of spo med)

Q43. E. These are all correct – I just thought that they were interesting. (ref: The Female Athlete. DeLee & Drez, 356-74)

Q44. A. I tried to trick you – 1 and 3 are girly things ∴ obviously related to the female athlete triad, 4 is obviously incorrect (athletes tend not to be rewarded for being under or overweight in any of these sports), and 2 is correct, but more males are likely to be involved in these sports.

Q45. B. I told you it is hard to make up lies. 1 and 3 are true. 2 is false – cancellous or trabecular bone is more sensitive, and if you'd got this much right, you wouldn't need to think about 4. 4 is false because it is a double negative – athletic amenorrhoea caused by the suppression of LH pulsatility, not the loss of suppression. Sorry.

Q46. C. The skin will not always be dry, and antipyretics have no role in treatment of hyperthermic athletes – the hyperthermia is not due to altered hypothalamic thermoregulatory set point.

Q47. C. Footstrike haemolysis is not the most common reason for a lower haemoglobin concentration in endurance athletes, and it certainly should not be treated with erythropoietin. Endurance training has a number of effects including aldosterone production and, later, albumin production that expand the plasma volume physiologically. Iron deficiency is the most common cause of true anaemia in runners.

Q48. D. Only 4 is true. The risk of blood borne infections can be increased by clerical error with transfusions, and shared needles, or even vials of drug with rEpo. Viscosity is increased. Submaximal  $\dot{V}O_2\text{max}$  is a contradiction in terms – there's no such thing.

Q49. A. 1, 2, and 3 are all correct. 4 is incorrect, a peripheral rim tear in the vascular zone may cause an acute effusion, but central tears usually cause an effusion that develops over several hours to days.

Q50. A. Classically the femoral epiphysis slips posteromedially resulting in loss of internal rotation, hip flexion, and hip abduction. In higher grade slips, trying to flex the hip causes the leg to turn into external rotation. Patients are Trendelenburg positive on the ipsilateral side, and although may be bilateral eventually in 25-35%, on presentation is only bilateral in 10-15%  $\therefore$  not classically Trendelenburg positive on the contralateral side. (ref: Handbook of sports medicine)

Q51. B. 1, and 3 are absolute contraindications, 2 and 4 are relative contraindications (ref. APP guide, '99).

Q52. B. Peroneus longus and brevis are supplied by the superficial peroneal nerve. (ref Last's)

Q53. C. The diagnosis of heat stroke is based on raised core temperature ( $>41^\circ\text{C}$ ) AND altered mental state. Postural hypotension is common but not essential, and hyperthermic athletes are usually sweating (ref: Heat and Cold Illness in Distance Running. Armstrong LE et al. MSSE '96;28(12):1-10. ACSM Position Stand)

Q54. D. High glycaemic index foods shouldn't be taken 30 minutes before a race because they cause increased insulin levels, carbohydrate consumption during exercise does not increase insulin levels because adrenaline inhibits the pancreatic  $\beta$ -cells. Low glycaemic index foods do not raise blood glucose as quickly as high GI foods,  $\therefore$  they are good for loading but poor for replacing glycogen after an event. (Ref: Rankin JW. Glycaemic index and exercise metabolism. Gatorade SSE. '97; 10(1): 64)

Q55. D. 1, 2, and 3 are all late changes.

Q56. B. 1, and 3 are correct. 2 is a normal response to training, and the normal change in the cortisol: testosterone ratio is for it to increase. (ref: oxford handbook of sports medicine)

Q57. A. 1 is correct,  $\therefore$  you can guess that 3 is correct. 2 is correct. 4 is the toughie, but airway responsiveness does not directly affect water loss – provided minute ventilation is maintained, whether the airways are constricted or not does not change the amount of water loss.

Q58. A. Rhabdomyolysis should be treated with high rates of i.v. fluids to help minimise renal damage.

Q59. E. All are correct. (ref: Exercise and pregnancy. Hay, P.)

Q60. E. All are correct.

Q61. C. 1 and 3 are incorrect. Postural hypotension is common at the end of these races but is not a common cause of collapse during the race. Intravenous fluids are not always indicated, in fact are contraindicated if the diagnosis is hyponatraemia.

Q62. B. Rehydration fluids should be less than 8%, and 2L of fluid within the last hour before the race will cause gastrointestinal discomfort. (ref: oxf. HB of SpoMed)

Q63. C. Muscle mass is lost at a rate of 10-15% per decade from the age of 60-75, beyond which time it reaches 1.4-1.8% per year. Tendons and ligament lose capillaries. (ref Oxf.HB of SpoMed)

- Q64. A. Carpal tunnel syndrome is very common, its incidence increases with time.
- Q65. E. All are true. PSNS overactivity is triggered in response to the hypertension induced by the unrestrained SNS activity.
- Q66. C. 1 is false, as is 3. NSAIDs are usually preferred over colchicine. 2 and 4 are correct. (ref: Primer on rheumatic disease)
- Q67. B. 2 and 4 are often not helpful, and even if normal do not rule out sepsis. (ref: Primer on rheumatic disease)
- Q68. B. 2 and 4 are false.
- Q69. A. 1 and 3 are false, 2 and 4 are true
- Q70. A. 1 and 3 are false, 2 and 4 are true
- Q71. D. Only 4 is correct.
- Q72. E. All are true. (ref: Aronen JA et al. Thigh contusions: Minimising the length of time before full return to athletic activities. AOSS 16<sup>th</sup> Annual Meeting, 1990.)
- Q73. B. 1 and 3 are true. DOMS is more common in people undertaking unaccustomed exercise
- Q74. E. All are true. Intracranial pathology is the least common of these. (ref: B&K)
- Q75. A. 1, 2, and 3 are true. There is no cutaneous distribution for C1. (ref B&K, Last's)
- Q76. E. All are true according to ACSM's Essentials of Sports Medicine – I was surprised about 4.
- Q77. C. 1 and 3 are false. Hyphaema is blood in the aqueous humour (the anterior chamber), and it can cause secondary glaucoma. (ref: Oxford HB of SpoMed)
- Q78. D. The mandible usually fractures in more than one place, most commonly at the angle or the rami.
- Q79. A. 1, 2 and 3 are true. Blow-out fractures usually cause diplopia that is worse with upward gaze (due to entrapment of the inferior rectus or the tissue around it) (ref: Oxford HB of SpoMed)
- Q80. B. 1 and 3 are true. USS is generally less reliable than clinical examination using the calf squeeze test (or some modifications of it). No matter how these are treated they will heal. They may be too long and too weak for functional use, but they will heal (ref: ACSM Ess Of SpoMed)
- Q81. C. It is an overuse problem of the extensor/supinator group, and it affects ECRB classically. (ref: ACSM Ess Of SpoMed)
- Q82. A. Only 4 is false. It may in fact reduce  $\dot{V}O_2\text{max}$  by increasing body weight.
- Q83. E. All are correct. (ref: ACSM Ess Of SpoMed)
- Q84. C. 1 is true, 2 is false, it has to be C. (ref: ACSM Ess Of SpoMed)
- Q85. A. 1, 2 and 3 are true. The "catch" is the part of the stroke where the oar enters the water.
- Q86. E. All are true. (ref: Hosea et al (1989))
- Q87. D. The arcade of Struthers (the conjoint tendon of the medial head of triceps, the medial intermuscular septum, and the internal brachial ligament) can entrap the ulnar nerve. The ligament of Struthers (present in only 1% of arms) crosses the median nerve. The arcuate ligament roofs the cubital tunnel and can compress the ulnar nerve.
- Q88. C. 1 and 3 are false. The talofibular ligament is the most commonly injured ankle ligament.

Q89. E. All are correct. (ref: Stanitski, Delee, and Drez)

Q90. C. 1 and 3 are incorrect. MRI will show a disorganised mass indistinguishable from an aggressive tumour. History is the main differentiator.

Q91. A. Only 4 is false, a Bankart lesion being a disruption (bony or otherwise) of the anteroinferior capsulolabral complex.

Q92. A. The coracoid process is part of the scapula.

Q93. B. Crohn's can affect any part of the GI tract. Excision of the distal colon in ulcerative colitis may significantly improve peripheral symptoms. NSAIDs are contraindicated in inflammatory bowel disease. Sulfasalazine, ± systemic corticosteroids may be of benefit.

Q94. C. 1 and 3 are false. In cases following gastroenteritis, the arthritis, urethritis, and conjunctivitis are usually sterile. The upper limb is almost never involved in isolation, it is involved in combination with the lower limb in 60%, and the lower limb is involved alone in 40%

Q95. A. Posterolateral instability is caused by damage to the radial ulnar collateral ligament of the elbow, most commonly following surgery for lateral epicondylitis

Q96. D. The calcaneus is a predominantly cancellous bone, and is ∴ more responsive to hypoestrogenism

Q97. E. All of these are true.

Q98. C. 1 and 3 are false. 2 and 4 are true. (ref: Supplements in sport)

Q99. B. 1 and 3 are correct. Posterior impingement, often associated with FHL tendonitis are the most common causes of posterior ankle pain in dancers.

Q100. E. All are correct. Forcing turnout causes so many injuries, including posterior element overload in the low back.

Well done. I hope this has helped. If you want to contribute questions (referenced if you don't mind), or make comments, e-mail me on [channa@xtra.co.nz](mailto:channa@xtra.co.nz)

Chris Hanna.

Section 2 type MCQs – made up by Chris Hanna, and are in no way purported to be similar in difficulty or content to those of the ACSP Part 2 exam: Mainly for practicing the technique.

Incomplete statements or questions are followed by 4 suggested completions or answers, of which **ONE or MORE THAN ONE** is/are correct. Select:

- A if only 1,2 and 3 are correct
- B if only 1 and 3 are correct
- C if only 2 and 4 are correct
- D if only 4 is correct
- E if ALL are correct

Q1. With regard to the quadrilateral space in the shoulder:

- 1. The axillary nerve passes through it
- 2. It is formed between subscapularis and teres major in the anterior axillary wall
- 3. The posterior circumflex humeral artery and vein pass through it
- 4. The leash of Henry can cause axillary nerve symptoms

Q2. Signs of anabolic steroid use in a young adult male include:

- 1. Testicular hypertrophy
- 2. Striae
- 3. Female pattern baldness
- 4. Cystic acne

Q3. Clinical problems that have been associated with excessive exercising in women include:

- 1. Stress fractures
- 2. Disordered eating patterns
- 3. Loss of bone density
- 4. Dysmenorrhoea

Q4. The following factors are associated with rotator cuff impingement:

- 1. Subacromial spurs
- 2. Os acromiale
- 3. Subtle instability
- 4. Increased thoracic kyphosis

Q5. Factors that increase the risk of muscle injury include:

- 1. Eccentric loading
- 2. High percentage of type I (slow twitch) muscle fibres
- 3. Origin and insertion that span two joints
- 4. A more superficial muscle

Q6. In a patient who presents 1 day after a twisting injury associated with a “pop” and swelling of the knee, who is too painful to examine on presentation, the appropriate management is:

- 1. MRI scan
- 2. Immediate arthroscopy
- 3. Immobilisation of the knee for 4 weeks
- 4. Repeat examination after pain and swelling settle

Q7. Benefits of moderate regular exercise include:

- 1. Weight control
- 2. Reduced risk of cancer of the colon
- 3. Improvement of abnormal lipid profiles
- 4. Reduced all cause mortality

Q8. Injury to the ligaments at the base of the first and second rays of the foot may show:

- 1. Diastasis between the medial and intermediate cuneiforms on weight-bearing AP x-ray
- 2. Disruption of the interosseous ligament between the bases of the first and second metatarsals on MRI
- 3. The “fleck sign” on weight-bearing AP x-ray
- 4. Decreased signal on bone scan

Q9. Changes seen in the myocardium in response to exercise include:

1. Eccentric hypertrophy with resistance training
2. Disorganised fibre orientation with hypertrophy
3. Concentric hypertrophy with endurance training
4. Normal early to late diastolic filling ratio

Q10. Appropriate treatment of a meniscal cyst involves:

1. Aspiration of the cyst and injection of corticosteroid
2. Arthroscopic cyst decompression
3. Repair of the horizontal cleavage component
4. Partial meniscectomy



Q11. In a 19yo athlete with a locked knee (only 20-70° flexion possible), and an MRI confirmed displaced medial meniscus tear and ACL rupture:

1. Meniscal repair followed by hamstring and quadriceps co-contractions will provide a predictable good long term outcome
2. A range of motion knee brace locked at 30-90° should be applied prior to surgery
3. ACL reconstruction is all that is required
4. Reconstruction of the ACL and repair of the meniscus is the treatment of choice

Q12. After being poked in the eye during a game of rugby, a player presents with a small amount of white sclera protruding through the conjunctiva. Treatment should include:

1. Applying a double eye-pad and referring for urgent ophthalmologic review.
2. Prevent the patient from eating or drinking anything.
3. Lying the patient down and elevating his legs while awaiting immediate transport to hospital.
4. Apply an unpadded eye shield over the eye.

Q13. Marfan's disease is characterised by the following:

1. Most commonly an autosomal dominant inheritance pattern
2. Cystic medial necrosis of the aorta being the major cause of death
3. A connective tissue disorder
4. Pulmonary blebs or spontaneous pneumothorax being one of the major diagnostic criteria

Q14. Rupture of the long head of biceps:

1. Leads to 15-20% loss of forearm supination strength
2. Causes no significant loss of abduction strength
3. Leads to 8-20% loss of elbow flexion strength
4. May require surgery for muscle cramps

Q15. Brachial neuritis (aka Parsonage-Turner Syndrome) is characterised by:

1. An acute demyelinating process involving the nerves supplying the upper limb
2. Clinically detectable muscle weakness that usually precedes the neuritic pain.
3. An EMG which shows fibrillation potentials and positive waves consistent with nerve root (usually more than one) and peripheral nerve involvement
4. Pain that is completely relieved by aspirin

Q16. With regard to Panner's disease:

1. It is an osteochondrosis seen in 7-12 year old athletes
2. It usually results in loose body formation
3. Flexion contracture is not usually a feature
4. It should be treated with arthroscopic debridement

Q17. A baseball pitcher notices loss of pitching speed after recovering from knee surgery. The most common errors in this patient are likely to be:

1. Not maintaining aerobic fitness
2. Not using iontophoresis in the immediate postoperative period
3. Not maintaining upper body strength
4. Not maintaining quadriceps and hamstring strength

Q18. Preparticipation screening serves to:

1. Develop a relationship with the athletes
2. Provide an opportunity for education of the athletes
3. Allow recording of baseline levels of fitness, flexibility, and neural function
4. Attempt to identify athletes with problems that may predispose them to injury or death.

Q19. The tendons involved in intersection syndrome include:

1. Extensor carpi radialis brevis and longus
2. Abductor pollicis longus
3. Extensor pollicis brevis
4. Extensor carpi ulnaris

Q20. Appropriate early management for patellar tendinopathy in a basketball player includes:

1. Quadriceps stretches

2. Ice after games and trainings
3. Swimming or cycling instead of training runs or jumping drills
4. Corticosteroid injection into the patellar tendon

Q21. Exercise induced bronchospasm is more likely to be provoked by:

1. Rugby than cross-country running
2. Road cycling than swimming
3. Jogging for 20 minutes than jogging for 10 minutes
4. Touch-football than weight-training

Q22. In tarsal coalition:

1. Presence of degenerative changes elsewhere in the foot is an indication for surgical excision of the coalition
2. Pes planus is common
3. Talocalcaneal coalition is the most common form
4. Calcaneonavicular coalitions are bilateral in 60%

Q23. With regard to menisci of the knee:

1. The lateral meniscus is more mobile
2. The medial meniscus is more of a complete circle
3. Injury to the lateral meniscus has a worse prognosis
4. Discoid medial menisci occur in 20% of the Japanese population

Q24. Hypertrophic cardiomyopathy is characterised by:

1. An autosomal dominant inheritance pattern
2. Outflow obstruction only in 25%
3. A systolic murmur that is increased by reduced venous return
4. Mutation of the fibrillin gene

Q25. The following are consistent with the diagnosis of hypertrophic cardiomyopathy:

1. Left ventricular hypertrophy by voltage criteria, and strain pattern
2. Abnormal early:late diastolic filling patterns
3. Septal wall thickness >15mm, and septal wall:free wall thickness >1.3
4. Left ventricular end diastolic diameter <45mm

Q26. Aerobic exercise may benefit patients with hypertension by:

1. Decreasing peripheral resistance (peripheral vasodilatation)
2. Decreasing insulin resistance
3. Decreasing serum catecholamine levels
4. Increasing renin production

Q27. A 21 yo wishing to learn how to scuba dive presents for a medical with a history of childhood wheeze.

Investigations should include:

1. An AP and lateral chest film
2. A peak-flow diary
3. A histamine challenge
4. A nebulised hypertonic saline challenge

Q28. Contraindications to scuba diving include:

1. Brittle diabetes mellitus
2. Proven ischaemic heart disease
3. The first 12 months after radial keratotomy (laser eye surgery)
4. Seizure disorders

Q29. In a diver who presents with sudden deafness after a dive:

1. Conductive hearing loss is suggested by a positive Rinne test on the affected side (bone conduction better than air conduction)
2. If sensorineural hearing loss can be diagnosed, there is no need to consider decompression treatment
3. Sensorineural hearing loss may indicate an endolymph fistula
4. Conductive hearing loss is suggested by the Weber test being heard best in the unaffected ear.

Q30. An uncomplicated ruptured tympanic membrane:

1. Results in sensorineural hearing loss
2. Requires instant surgery
3. Must be treated with topical antibacterial ear drops
4. Water should be kept out of the ear until it heals

Q31. Increased  $\dot{V}O_2$ max through endurance training is due to:

1. Increased maximal heart rate
2. Increased stroke volume
3. Increased type IIb muscle fibre numbers
4. Increased a- $\dot{V}O_2$  difference

Q32. Tibialis anterior:

1. Arises from the lateral surface of the tibia
2. Inserts into the medial surface of the medial cuneiform and the base of the first metatarsal
3. Passes under the flexor retinaculum in a synovial sheath at the ankle
4. Is innervated by the deep peroneal and recurrent genicular nerves (L4)

Q33. Distal clavicular osteolysis is usually seen in:

1. Throwing sports
2. Weight training
3. Racquet sports
4. Contact sports (e.g. rugby, league)

Q34. With regard to finger injuries in sport:

1. Boutonnière deformity is associated with central slip disruption from the base of the distal phalanx
2. Pseudo-boutonnière deformity may follow volar plate injury at the proximal interphalangeal joint
3. Mallet finger should be treated with 6 weeks continuous splinting of the proximal and distal interphalangeal joints, followed by a further 6 weeks of night splinting
4. Jersey-finger is an avulsion of flexor digitorum profundus and requires surgical correction