PE.PT7 Injury Prevention Including Common Sporting Injuries

Total Marks

AQA 8582 · Calculator allowed · about 50 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which of these is an example of an EXTRINSIC risk factor for injury in sport?

- ☐ A) A player's current fitness level
- ☐ B) A player's technique
- ☐ C) A wet, slippery playing surface
- ☐ D) A player's flexibility

(Total for Question 1 is 1 mark)

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2 State one example of each of the following.

(a) An extrinsic risk factor for injury. **(1)**

(b) An intrinsic risk factor for injury. **(1)**

(c) A piece of protective equipment that can reduce injury risk. **(1)**

(d) A rule or regulation whose purpose includes reducing injury risk. **(1)**

(Total for Question 2 is 4 marks)

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3 Explain the difference between an extrinsic and an intrinsic risk factor for sporting injury, giving one example of each in your explanation.

(Total for Question 3 is 2 marks)

4 Name the type of injury that involves the overstretching or tearing of a LIGAMENT at a joint.

(Total for Question 4 is 1 mark)

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5 Name the type of injury that involves the overstretching or tearing of a MUSCLE or TENDON.

(Total for Question 5 is 1 mark)

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6 Explain the difference between a sprain and a strain, referring to which body tissue is affected in each.

(Total for Question 6 is 2 marks)

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7 A netball player twists her ankle during a match. It becomes swollen and painful to put weight on, but there is no obvious deformity of the bone. Suggest which type of injury (sprain or strain) this is most likely to be, and justify your answer.

(Total for Question 7 is 2 marks)

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8 Name the type of injury where a bone is completely or partially broken.

(Total for Question 8 is 1 mark)

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9 Explain the difference between a stress fracture and a traumatic fracture.

(Total for Question 9 is 2 marks)

10 Name the injury where a bone is forced out of its normal position at a joint.

(Total for Question 10 is 1 mark)

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11 Explain why a dislocation (e.g. of the shoulder) usually requires more urgent medical attention than a mild muscle strain.

(Total for Question 11 is 2 marks)

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12 Name the type of injury that involves a disturbance to normal brain function, often caused by a blow to the head.

(Total for Question 12 is 1 mark)

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13 State two symptoms a first-aider might look for that could suggest a player has suffered a concussion.

(Total for Question 13 is 2 marks)

14 PRICE is a protocol used for the initial treatment of a soft-tissue injury such as an ankle sprain. State what each letter stands for, and briefly explain its purpose.

(a) P **(1)**

(b) R **(1)**

(c) I **(1)**

(d) C **(1)**

(e) E **(1)**

(Total for Question 14 is 5 marks)

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15 Explain why appropriate protective equipment (e.g. a gum shield in rugby, or shin pads in football) reduces injury risk without removing the risk factor that caused it.

(Total for Question 15 is 2 marks)

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16 Explain why using correct technique (e.g. a safe tackling technique, or correct lifting technique in weight training) reduces injury risk.

(Total for Question 16 is 2 marks)

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17 Explain why following a progressive overload approach to training, rather than making sudden large increases in training load, reduces injury risk.

(Total for Question 17 is 2 marks)

18 Explain why officials (referees/umpires) consistently enforcing the rules of a sport is an important extrinsic factor in reducing injury risk.

(Total for Question 18 is 2 marks)

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19 A school checks the netball court for wet patches and removes any loose equipment before a match, and requires all players to wear correctly fitted trainers with appropriate grip.

(a) State whether these are examples of managing extrinsic or intrinsic risk factors, and justify your answer. **(2)**

(b) Suggest one further extrinsic risk-reduction step the school could take before the match. **(2)**

(Total for Question 19 is 4 marks)

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20 State two reasons why an athlete returning to sport too soon after an injury, before it has fully healed, is at increased risk of a further, potentially more serious, injury.

(Total for Question 20 is 2 marks)

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21 Explain why intrinsic risk factors are often easier for an individual athlete to manage or reduce than extrinsic risk factors.

(Total for Question 21 is 3 marks)

22 A youth rugby club has noticed an increase in shoulder and ankle injuries this season.

Evaluate the range of strategies the club could use to reduce the number of these injuries.

(Total for Question 22 is 6 marks)

Mark scheme · PE.PT7 Injury Prevention Including Common Sporting Injuries

Question 1

- **B1** C (a wet, slippery playing surface)
- **Answer: C (a wet, slippery playing surface)**

Question 2

- (a) **B1** e.g. weather conditions, playing surface, faulty equipment, or an opponent's actions, oe
- **(a) Answer: A wet or uneven playing surface.**
- (b) **B1** e.g. current fitness level, technique, an existing injury, or insufficient warm-up, oe
- **(b) Answer: A performer's poor technique.**
- (c) **B1** e.g. a gum shield, shin pads, a helmet, or padded/supportive clothing, oe
- **(c) Answer: A gum shield.**
- (d) **B1** e.g. a ban on high/dangerous tackles in rugby, or an age-appropriate contact rule, oe
- **(d) Answer: A ban on high or dangerous tackles in rugby.**

Question 3

- **B1** an extrinsic risk factor is a factor external to the performer, e.g. weather, playing surface, equipment or an opponent's actions, oe
- **B1** an intrinsic risk factor is a factor related to the performer themselves, e.g. their fitness level, technique or an existing injury, oe
- **Answer: An extrinsic risk factor is external to the performer, for example weather conditions, the playing surface, faulty equipment or an opponent's actions. An intrinsic risk factor is related to the performer themselves, for example their fitness level, technique or an existing injury.**

Question 4

- **B1** a sprain
- **Answer: A sprain.**

Question 5

- **B1** a strain
- **Answer: A strain.**

Question 6

- **B1** a sprain is damage (overstretching or tearing) to a LIGAMENT, the tissue connecting bone to bone at a joint, oe
- **B1** a strain is damage to a MUSCLE or TENDON, the tissue connecting muscle to bone (or within the muscle itself), oe
- **Answer: A sprain is damage to a ligament, the tissue connecting bone to bone at a joint. A strain is damage to a muscle or tendon, the tissue connecting muscle to bone (or within the muscle itself).**

Question 7

- **B1** a sprain, oe
- **B1** because twisting the ankle is a classic mechanism for ligament damage at the ankle joint, and swelling with pain on weight-bearing but no bone deformity is consistent with a ligament injury rather than a fracture, oe
- **Answer: A sprain, because twisting the ankle is a classic mechanism for damaging the ligaments at the ankle joint, and the described symptoms (swelling, pain on weight-bearing, no bone deformity) are consistent with a ligament injury rather than a broken bone.**

Question 8

- **B1** a fracture
- **Answer: A fracture.**

Question 9

- **B1** a stress fracture develops gradually from repeated, smaller impacts or overuse over time, e.g. in a long-distance runner's shin or foot, oe
- **B1** a traumatic fracture is caused by a single, sudden, high-force impact, e.g. a heavy tackle or a fall, oe
- **Answer: A stress fracture develops gradually from repeated, smaller impacts or overuse over time, such as in a long-distance runner's shin or foot. A traumatic fracture is caused by a single, sudden, high-force impact, such as a heavy tackle or a fall.**

Question 10

- **B1** a dislocation
- **Answer: A dislocation.**

Question 11

- **B1** the joint is visibly out of its normal position and unstable, with a risk of further damage to surrounding ligaments, nerves or blood vessels if not treated correctly, oe
- **B1** it usually needs to be professionally realigned (reduced) by a trained medical professional, unlike a mild strain, which can often be managed with rest and basic first aid, oe
- **Answer: The joint is visibly out of its normal position and unstable, with a risk of further damage to surrounding ligaments, nerves or blood vessels if not treated correctly, and it usually needs to be professionally realigned by a trained medical professional, unlike a mild strain, which can often be managed with rest and basic first aid.**

Question 12

- **B1** a concussion
- **Answer: A concussion.**

Question 13

- **B1** confusion/disorientation, or memory loss around the incident, oe
- **B1** dizziness, headache, nausea, balance problems, or loss of consciousness, oe
- **Answer: Confusion or memory loss around the incident, and dizziness or balance problems (any two recognised concussion symptoms).**

Question 14

- (a) **B1** Protection - protect the injured area from further damage, oe
- **(a) Answer: Protection - protect the injured area from further damage.**
- (b) **B1** Rest - stop the activity and avoid putting weight on/using the injured area, to prevent further harm, oe
- **(b) Answer: Rest - stop the activity and avoid using the injured area, to prevent further harm.**
- (c) **B1** Ice - apply ice to the injury to help reduce swelling and pain by constricting blood vessels, oe
- **(c) Answer: Ice - apply ice to help reduce swelling and pain by constricting blood vessels.**
- (d) **B1** Compression - apply a bandage to help limit swelling, oe
- **(d) Answer: Compression - apply a bandage to the area to help limit swelling.**
- (e) **B1** Elevation - raise the injured area above the level of the heart to help reduce blood flow/swelling to the area, oe
- **(e) Answer: Elevation - raise the injured area above the level of the heart to help reduce swelling.**

Question 15

- **B1** the equipment does not remove the extrinsic risk itself, e.g. contact from an opponent or a ball, oe
- **B1** instead, it absorbs or spreads the force of an impact, so less force reaches the vulnerable body part underneath, oe
- **Answer: The equipment does not remove the extrinsic risk itself, such as contact from an opponent or a ball; instead, it absorbs or spreads the force of an impact so that less force reaches the vulnerable body part underneath.**

Question 16

- **B1** correct technique keeps the forces acting on the body within the ranges that joints, muscles and tendons can safely manage, oe
- **B1** and avoids putting the body into positions where it is more vulnerable to injury (e.g. an unsupported joint angle), oe
- **Answer: Correct technique keeps the forces acting on the body within the ranges that joints, muscles and tendons can**

Question 17

- **B1** progressive overload gives muscles, tendons, ligaments and joints time to adapt gradually to increasing stress, oe
- **B1** a sudden large increase in training load can exceed what these tissues are currently able to cope with, causing an overuse injury, oe
- **Answer: Progressive overload gives muscles, tendons, ligaments and joints time to adapt gradually to increasing stress. A sudden large increase in training load can exceed what these tissues are currently able to cope with, causing an overuse injury.**

Question 18

- **B1** rules exist partly to limit dangerous play, e.g. banning high or dangerous tackles, oe
- **B1** if officials do not enforce these rules consistently, players are more exposed to preventable injury caused by opponents breaking the rules, oe
- **Answer: Rules exist partly to limit dangerous play, for example banning high or dangerous tackles. If officials do not enforce these rules consistently, players are more exposed to preventable injury caused by opponents breaking the rules.**

Question 19

- (a) **B1** extrinsic, oe
- (a) **B1** because the court surface, loose equipment and footwear grip are all factors in the playing environment/equipment rather than factors within any individual player's own body, oe
- **(a) Answer: Extrinsic, because the court surface, loose equipment and footwear grip are all factors in the playing environment and equipment, rather than factors within any individual player's own body.**
- (b) **B1** e.g. checking the goalposts/net posts are secure and padded, checking lighting is adequate, or ensuring a qualified first-aider and first-aid kit are present, oe
- (b) **B1** with a brief justification linking the step to reducing an external/environmental risk to players, oe
- **(b) Answer: Checking that the goalposts are secure and padded, since an unstable or unpadded post is an external hazard players could collide with during play.**

Question 20

- **B1** the injured tissue is still weaker than normal and has not finished repairing, so it can fail again under a similar or even smaller load, oe
- **B1** the athlete may move differently to compensate for/protect the healing area, which can place abnormal stress on other joints or muscles, leading to a different injury, oe
- **Answer: The injured tissue is still weaker than normal and has not finished repairing, so it can fail again under a similar or even smaller load; and the athlete may move differently to compensate for or protect the healing area, which can place abnormal stress on other joints or muscles, leading to a different injury.**

Question 21

- **B1** intrinsic risk factors, such as fitness level and technique, are largely within the athlete's own control, oe
- **B1** because they can be improved directly through the athlete's own training, coaching and practice, oe
- **B1** whereas extrinsic risk factors, such as weather, playing surface or an opponent's actions, are largely outside the individual athlete's direct control, even though officials/organisers can help manage some of them, oe
- **Answer: Intrinsic risk factors, such as fitness level and technique, are largely within the athlete's own control because they can be improved directly through their own training, coaching and practice. Extrinsic risk factors, such as weather, playing surface or an opponent's actions, are largely outside the individual athlete's direct control, even though officials or organisers can help manage some of them.**

Question 22

- **Level 3** (5-6): A detailed and coherent evaluation that identifies a range of relevant strategies (technique, equipment, conditioning, playing surface, rule enforcement), applies them specifically to shoulder and ankle injuries in youth rugby, and reaches a balanced overall judgement about combining strategies. Sustained, accurate use of terminology.
- **Level 2** (3-4): Some accurate identification of relevant strategies, with some application to the specific injuries/sport named, but coverage may be incomplete or the evaluation underdeveloped.
- **Level 1** (1-2): Basic or generic statements about injury prevention with little or no application to the specific situation (shoulder/ankle injuries, youth rugby).
- **Level 0** (0): No relevant content.
- **Indicative content:**
  - Correct tackling technique coaching would help reduce shoulder injuries, since poor technique (e.g. leading with an unsupported shoulder into contact) is a common intrinsic cause of shoulder injuries in rugby.
  - Appropriate, well-fitted protective equipment, such as shoulder padding or strapping where permitted, and correctly fitted boots with suitable studs for the surface, could help reduce the force reaching vulnerable joints in both areas.
  - Strength and conditioning work targeting the muscles around the shoulder and ankle joints could improve joint stability and resilience, provided it follows progressive overload so the conditioning itself does not cause injury.
  - Checking the pitch surface before training/matches (e.g. for uneven ground or holes) addresses an extrinsic risk factor that could contribute to ankle injuries specifically (twists, rolls).
  - Enforcing age-appropriate tackle-height and contact rules, with officials applying them consistently, addresses the risk from dangerous contact from opponents, an extrinsic factor.
  - Ensuring an adequate warm-up, including mobility work for the shoulders and ankles specifically, before training and matches would help prepare these joints for the demands of contact and running.
  - A balanced evaluation should note that no single strategy is likely to remove all risk; combining several approaches (technique coaching, conditioning, equipment, playing-surface checks and consistent rule enforcement) is likely to be more effective than relying on any one alone.