

Cambridge National Sport Science

Unit R041: Reducing the risk of sports injuries

Level 1/Level 2

Mark Scheme for January 2016

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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R041 Mark Scheme January 2016

| Annotation Meaning of annotation | | | | |
|---|---|---|---|--|
| BP | Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response. | | | |
| ✓ | Tick – correct answer | | | |
| × | Cross – incorrect answer | | | |
| DEV | Development of point (for use with levels question) | | | |
| LI | Level 1 (for use with levels question) | | | |
| L2 | Level 2 (for use with levels question) | | | |
| Level 3 (for use with levels question) Bod Benefit of doubt - but still tick | | | | |
| | | К | Knowledge mark (for use with levels question) | |
| VG | Too vague | | | |
| REP | Repeat | | | |
| Noted but no credit given / zero mark response | | | | |
| EG | A practical example given that is worth credit | | | |
| S | Sub max reached | | | |

ADDITIONAL OBJECTS: You **must** annotate responses on any additional objects, as above. ('additional objects' are continuation sheets at the end.) If no credit is to be awarded for the answer written on the additional object, please use the annotation 'seen'. If the page is blank use 'BP'.

| Quest | tion | Answer/Indicative content | Mark | Guidance |
|-------|------|---|------|---|
| 1 (a) | | One mark for each correct answer. a) & b) any two from: 1. Coughing / choking 2. wheezing 3. shortness of breath or breathlessness or difficulty breathing or heavy breathing 4. difficulty speaking 5. tightness in the chest or chest pain 6. pale skin 7. clammy skin 8. grey/blue lips (if attack severe). 9. dizziness | 2 | a) and b): Do not accept: 'change colour' = Vg. Blocked airways = vg (not symptom) |
| | | c) any one from: 1. reassurance 2. stay calm 3. make light conversation 4. sit them down or upright 5. encourage them to take slow and steady breaths 6. use of inhaler / (asthma) pump 7. contact emergency services (if needed) or call 999 or emergency care 8steroid tablets. | 1 | c) hospital = vg |
| | | d) any one from: 1. epilepsy 2. diabetes 3. stroke 4. fever | 1 | (Other conditions would be legitimate answers here – diabetes can cause seizures, as can autism, cerebral palsy, etc) |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|---|------|---|
| | e) & f) – any two from: 1. weight loss 2. (increased) thirst / dry mouth 3. going to the toilet lots 4. (extreme) tiredness 5. odd behaviour or could be mistaken for 'drunkenness' 6. confusion or dizziness or fainting 7. memory loss 8. pale or cold skin 9. sweaty (skin) 10. shallow or rapid breathing 11. shaking 12. high blood sugar | 2 | e) need more fluids = Vg e) blurred vision = vg |
| | g) & h) – any two from: 1. give the individual fruit juice or sweets (low blood sugar) or high sugar food or sugar 2. give insulin (high blood sugar) 3. seek medical assistance / 999 | 2 | g) and h) Do not accept: give injections / pills / 'epipen' or medication or change diet. Emergency action plan in place = vg. |

| Question | Answer/Indicative content | Mark | Guidance |
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| | | | |
| 2 | Four marks for: Two marks: One mark for example - One mark for cause (Acute) 1. (examples) – broken limb / soft tissue injury / fracture / abrasions / cuts / bruises / sprains / strains / concussion 2. (caused by) - sudden trauma / impact to the body (e.g. | 1 | If example is incorrect then cause is incorrect (must have correct example for cause) Accept practical examples for causes Eg acute injury caused by a (bad) tackle = pt 2 Hurt your arm on solid object = vg |
| | (hard rugby) tackle, being hit by a ball) or twisting ankle / slipping / falling or banging into another player | | Landing awkwardly = BOD Landing funny = vg |
| | Two marks: One mark for example - One mark for cause (Chronic) 1. (examples) - (Achilles) tendonitis/shin splints/ tennis elbow/ golfers' elbow / swimmers' shoulder / Osgood Schlatter's / Sever's disease 2. (caused by) overuse injuries or a result of continuous stress on an area or repetitive movements | 1 | Accept other named chronic injuries |
| | | | |

| Que | estion | Answer/Indicative content | Mark | Guidance |
|-----|----------|---|------|---|
| 3 | | One mark for each correct description. (Bandaging) 1. could be used to cover or stem bleeding 2. reduces the risk of infection from a cut or keeps cut/injury clean 3. used to support the injured area (due to a sprain or strain) or keeps it still/stable 4. prevents or controls swelling or to apply pressure / compression (to injured area) 5. used to help keep an ice pack or splint in place. (Sling) 1. keeps an area of the body (e.g. arm) held in a position (where there is least discomfort) or keeps it still or supports injured area or immobilises injured area or cannot use it or rest injured area 2. to prevent further damage 3. elevates injury / to reduce swelling or raise above heart | 1 | Do not accept single word answers (should be a description) |
| 4 | a) b) | One mark for an example: 1. (awkward) fall (eg) in gymnastics 2. tackled by an opponent (eg) in football 3. overuse (eg) in running Two marks for an explanation: 1. (open fracture) – when the bone pierces the skin 2. (closed fracture) – a break where the skin is not pierced | 2 | For (a) accept any example of a suitable sporting situation (look for context) where a fracture might occur. Contact = vg Slip = vg (b) (open fracture) Accept: when you can see the bone (poking out) = pt 1 Do not accept: can see blood = vg (closed fracture) Accept: the bone is broken but you can't see it = pt 2 Do not accept: when you can't see it / the bone or no blood = vg |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|--|-------------|---|
| 5 | Two marks from: might increase the risk of infection would not address the injury/e.g. not stopping blood loss cause too much pain / further injury / do more harm wasting time when the injured person should be taken directly to the hospital or should call 999 instead | 2 | Accept: unsuitable for a break or fracture = pt2 Or accept (for one mark) any example when RICE would not be appropriate eg bruises / grazes / cuts etc Do not accept: 'if injury does not need it'= Vg (must be an example as part of the explanation (pt 2) 'not used in long term injuries = vg 'Make it worse' = vg Too serious = vg Need to be treated instantly = vg |
| 6 a) | Three marks for: A - Active P - Passive S - Strength | 1 1 1 | One mark for correct word Do not accept: Act or Action |
| b) | Two marks for: 1.(Look) – (at injured limbs) for obvious signs of injury (bleeding, bruising, swelling, deformity) or compare to other limbs or to see how bad it is 2.(Touch) – the injured site if the player will let you or gently palpate to find source of pain or feeling for tenderness or see where there is pain or to see if they can feel it or to see if it hurts or to see if it is broken / any deformities | 1 | One mark for each correctly described word to a maximum of two marks. Look at injured area = vg (Touch) Do not accept: 'to see if it is bad' = Vg |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|---|------|--|
| 7 | Two marks for: (Psychological) heightens/control arousal levels 'get in the zone'/settle 'nerves' or controls/decreases stress/anxiety improve concentration/focus / selective attention /alertness increase motivation/drive/ determination increase confidence improve reaction time Two marks for (Physical) preparing the body for physical activity/ to train or to prevent injury increase in body/muscle temperature or warming up muscles increase in heart rate or blood pumps faster or increase in blood flow / raise pulse increase in oxygen (to the muscles) increase in breathing (rate) increase in flexibility / mobility (of muscles and joints) increase in pliability/flexibility of ligaments / tendons increase in the speed of muscle contraction or improves response time | 2 | Do not accept: mental rehearsal (unless shown how it benefits). Increases aggression =vg Mental preparation = vg Motivation / concentration / confidence / reactions (on their own) = vg Head in the game = vg Accept 'peak' for increase Do not accept: to warm up (on its own) = vg Do not accept: to get your blood flowing/circulating or to get your heart pumping = vg Do not accept: to loosen muscles or to stretch muscles = vg |
| 8 | Three marks for three from: 1. increases venous return or prevents blood pooling 2. (speeds up) removal of lactic acid or CO2 or waste products 3. gradually lower heart rate 4. gradually lower temperature 5. gradually slows down breathing (rate) 6. (aid recovery by) stretching muscles or lengthening and strengthening muscles for next work-out 7. Reduces soreness / stiffness / pain or reduces DOMS | 3 | Do not accept: cools your body down or relieves aches or decreases risk of injury = Vg Continues to circulate blood / oxygen = vg Recovers faster = vg (in Q) Accept 'slowing down' for 'gradual'. |

| Que | estion | Answer/Indicative content | Mark | Guidance |
|-----|--------|--|------|---|
| 9 | | Two marks for: (pulse raiser) (example) - jogging / running / cycling / skipping etc (reason) Increase in body/muscle temperature, increase in heart rate or pumps more blood or increase oxygen (to muscles) | 1 1 | Accept: other suitable examples for each component Accept: a mark for reason even if example is incorrect Do not accept: raises pulse rate or increase your pulse (in question) |
| | | Two marks for: (mobility) (example) performing arm swings / hip circles / open and close gates / lunges etc. (reason) exercises that take the joints / body through their full ROM | 1 | Do not accept stretching (for mobility) = Vg |
| | | Two marks for: (dynamic movements) (example) carrying out short sprints/change of speed/direction / shuttle runs (reason) increase in flexibility (of muscles/joints) or loosen joints or to improve agility | 1 | Do not accept: (for dynamic movements- reason) stretching your muscles or increase in reaction time or realistic to sport = vg |
| 10 | | Two marks for descriptions: improve performance in (specific) skills (that will be developed during the session) improve technique (in the sport/activity that will be carried out) allows recap or practice (of a specific activity before the session begins) or to know what you are doing or to focus/concentrate on what you need to do improve reaction/response time (in skills to be performed) improve confidence replicates (muscle) movement to be used | 2 | Do not accept: rehearsing skills (in question) or repeating the skill or get you ready/prepared for the game or head in/on game or visualise actions or increased motivation = Vg |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|---|------|--|
| 11 | Three marks for three from: poor coaching techniques or poor warm up ineffective communication skills (not) adhering to rules / regulations requirements beyond performers capabilities or pushing you too much over-arousal caused by coaching or coaching aggression unqualified or incorrect supervision (eg by parents) or inadequate supervision or coach not paying attention or no-one to help or not checking or giving wrong equipment/environment | 3 | Accept opposites – e.g. benefits of teaching correct techniques Accept: check health and safety or check for safe environmen/equipment Do not accept 'overworking' or 'too hard on you' = vg (need a description) Tell you what to do = vg |

| Question | Answer/Indicative content | Mark | Guidance |
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| 12 | Three marks max One mark for each type of equipment: (Protective equipment) 1. could be injured by another player's helmet/shoulder pad 2. not wearing the correct protective equipment will or broken/damaged ill-fitting equipment or wearing it incorrectly or choking on gum shield | 1 | Examples will be credited if appropriate part of the description. Only accept: 'not wearing equipment' once under the three factors. Accept any other relevant causes of injury under each heading |
| | (Performance equipment) a performer could run into a piece of equipment (e.g. goal posts) could get hit on the body by another player's equipment (e.g. hockey stick) faulty / damaged / broken equipment (but not if given before) | 1 | |
| | (Clothing/footwear) 1. (could slip and get injured) due to inappropriate / incorrect footwear 2. (could be injured by) another player's studs / boots 3. (could get blisters if) footwear does not fit properly 4. clothing could snag / get in the way / restrict movement or clothing is too loose or too tight 5. not wearing the right clothing (but not if given before) | 1 | Wearing skin tight jeans = Vg |
| 13 | One mark for the correct answer: (d) Sleep | 1 | |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|--|------|--|
| 14 | Two marks for two from: (Gender) 1. males and females should not be mixed (in sport sessions) or (possible) different levels of strength or males (can be) stronger than females or females more flexible than males 2. e.g. in contact sports such as football or rugby | 2 | One mark for an explanation One for an appropriate example - annotate with EG Accept example that has context / sport / activity |
| | Two marks for two from: (Age) 1. young people/children should be competing against people of their own age or ensure similar age groups are together or young more likely to be injured when playing older.or activity at right level for age 2. e.g. adults playing rugby alongside/against teenagers or children could cause injury or lighter weights for younger children | 2 | (Age) Do not accept: levels of fitness or older is weaker = Vg |
| | Two marks for two from: (Previous/recurring injuries) 1. ensure the activity is not going to place too much stress on an area of the body that has or is susceptible to injury 2. e.g. too much jumping and landing in netball may cause knee pain/injury | 2 | |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|---|------|---|
| 15 | 0 = nil response or response not worthy of credit MB1 (1 - 3 marks) The response shows a limited understanding of how poor posture is caused and injuries. Candidates provide simple (bullet) points and limited descriptions. There may be some irrelevant material in the answer. There is little or no use of technical vocabulary and sentences have limited coherence and structure. Errors in grammar, punctuation and spelling may be noticeable and intrusive. MB2 (4 - 6 marks) The response shows an understanding of how poor posture is caused and the injuries that arise. Includes two or more developed points. There is some use of technical vocabulary and sentences for the most part are relevant and coherent. There are occasional errors in grammar, punctuation and spelling. MB3 (7 - 8 marks) The response shows a detailed understanding with detailed discussion. Candidates make many points from the indicative content, several of which may be developed. The answer is well structured and uses appropriate terminology and technical vocabulary. There are few if any errors in grammar, punctuation and spelling. | 8 | In differentiating between levels look for: MB1: Simple description rather than explanation most of response on causes rather than on how it affects performance e.g. giving pelvic tilt but not linking to effect. One mark for one cause identified or one injury At the top of this level more than two causes or more than two examples MB2: Some explanation rather than description May be two or more developed points for a range of causes At least one explanation (cause and effect) of how poor posture affects sports performance At the top of this level at least two causes and at least two ways these may affect sports performance MB3: Most explained points are clearly developed At the top of this level injuries are named and most causes are linked to how each might affect sports performance Very few QWC errors Indicate the level at the end of the response |

| Question | Answer/Indicative content | Mark | Guidance |
|----------|--|------|----------|
| | Indicative Content | | |
| | (Poor posture caused by): | | |
| | poor stance/gait (e.g. bending your knees or hunching your shoulders when stood up) | | |
| | sitting positions (e.g. slumping/slouching on the sofa rather than sitting upright) | | |
| | sleeping position (e.g. awkward sleeping position can injure spine) | | |
| | physical defects or previous injuries (e.g. muscles weaken around an injured area) | | |
| | lack of exercise (e.g. lack of core muscle strength means less support; being overweight puts strain on posture) | | |
| | fatigue (e.g. tired muscles will be unable to support the skeleton properly) | | |
| | 7. emotional factors (e.g. having low self-esteem/lack of confidence can influence posture) | | |
| | clothing/footwear (e.g. wearing shoes with high heels can affect posture) | | |
| | 9. Genetics (eg back condition/ weakness that you are born with) | | |
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| sports performance): | | |
|--|---|--|
| reater risk of injury | | |
| onger rehabilitation/recovery time for some njuries | | |
| ome skills/techniques become more difficult or mpossible to perform | | |
| tress placed on certain areas of the body (e.g. nuscles/ joints) | | |
| egative impact on balance and/or co-ordination | | |
| pain/discomfort during and/or after sports performance | | |
| ack of strength and/or muscular endurance in ome activities | | |
| lecreased flexibility / mobility | | |
| ries <u>related to</u> poor posture): | | |
| pelvic tilt | | |
| lordosis | | |
| kyphosis | | |
| round shoulder | | |
| scoliosis | | |
| many of the above can be both/either a cause of poor posture or an effect of poor posture | | |
| The second of th | onger rehabilitation/recovery time for some njuries ome skills/techniques become more difficult or impossible to perform tress placed on certain areas of the body (e.g. nuscles/ joints) egative impact on balance and/or co-ordination ain/discomfort during and/or after sports erformance ack of strength and/or muscular endurance in ome activities ecreased flexibility / mobility ries related to poor posture): Delvic tilt ordosis cyphosis cound shoulder scoliosis many of the above can be both/either a cause | onger rehabilitation/recovery time for some njuries ome skills/techniques become more difficult or npossible to perform tress placed on certain areas of the body (e.g. nuscles/ joints) egative impact on balance and/or co-ordination ain/discomfort during and/or after sports erformance ack of strength and/or muscular endurance in ome activities ecreased flexibility / mobility ries related to poor posture): Delvic tilt ordosis cyphosis round shoulder scoliosis many of the above can be both/either a cause |

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998 Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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Head office

Telephone: 01223 552552 Facsimile: 01223 552553



