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Answers

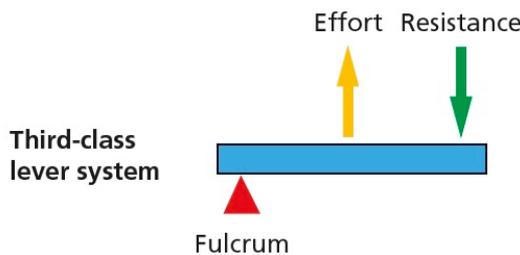
Exam-style questions

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Answers to this issue's practice exam questions.

Exam focus: Levers, planes and axes (p. 10)

- 1 You can generate large amounts of force to overcome a resistance/heavy weight and therefore you can reduce the amount of effort needed, therefore you can easily move a heavy weight.
- 2 Third-class lever system
- 3 Second-class lever system, sagittal plane, transverse axis
- 4



- 5 Resistance arms are in orange, force arms are in green.

First class lever system	Second class lever system	Third class lever system

- 6 Elbow flexion (biceps brachii): third-class lever system.
Elbow extension (triceps brachii): first-class lever system.
- 7 Flexion and extension through the sagittal plane and around the transverse axis.
Abduction and adduction in the frontal plane and around the sagittal axis (frontal for OCR).
Rotation (twisting) and circumduction (circling) in the transverse plane and around the longitudinal axis.

The shoulder joint therefore allows movement in all three planes and around all three axes, making it, along with the hip joint (the other synovial ball-and-socket joint), the joint with the greatest range of movement.

Exam focus: Concussion (p. 21)

1 Acute injuries are the result of excessive sudden impact or stress on the body (e.g. fractures, dislocations, strains and sprains).

Chronic injuries are the result of repeated impact or stress on the body over an extended period of time (e.g. stress fractures and tendonitis).

Soft tissue injuries involve damage to muscle, tendon or ligaments.

Hard tissue injuries involve damage to bone.

2 Intrinsic risk factors:

Individual variables: children, those who have suffered a previous concussion and those participating in contact sports are at greater risk of concussion.

Training effects: sport-specific conditioning can reduce the risk of concussion by allowing an athlete to maintain safe technique for longer, reduce contact and better absorb impact forces.

Extrinsic risk factors:

Protective equipment: ensuring that players wear the correct protective equipment is often part of the rules or laws of a game (e.g. wearing a gumshield and headguard in amateur boxing).

Technique and training: teaching the correct and safe technique reduces injury risk (i.e. tackling technique in rugby).

Appropriate level of activity: fatigue can lead to impaired decision-making and technique, both of which can increase the risk of concussion. This means that inappropriate intensity, duration or frequency of activity all increase the risk of concussion. Similarly, balanced competition (e.g. age, weight or gender-specific categories) ensures that sports can be played safely.

Warming up: increasing physiological and psychological readiness to perform reduces injury risk.

3 World Rugby's 'Recognise and Remove' concussion management protocol (the six Rs):

- Recognise the signs and symptoms of concussion.
- Remove the player from play immediately if concussion is suspected.
- Refer the player to qualified medical staff once removed.
- Rest the player from all exercise until symptom-free.
- Recover fully following the Graduated Return To Play (GRTP) protocol.
- Return to play once the GRTP protocol is complete and cleared by qualified medical staff.

4 Accept one of the following procedures, noting that compression should not be used for concussion:

RICE (rest, ice, compression, elevation)

PRICE (protection, rest, ice, compression, elevation)

POLICE (protection, optimal loading, ice, compression, elevation)

5 Physiotherapy involves the use of exercise, movement, stretching and massage to treat injury.

Cryotherapy involves exposure to extremely low temperatures (-120°C) to reduce inflammation and accelerate recovery.

Hyperbaric chambers provide oxygen at a greater than normal pressure. The additional oxygen accelerates recovery.

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