

Revision Series 2023

# OCR GCSE Physical Education Paper 1

◆ Notes pages ◆



The EverLearner

## How to use this revision session and notes

- Complete this document when doing the live or on-demand revision shows.
- Have the National Mock Exam to hand and, ideally, your completed, marked version of it.
- Have the [exam infographics](#) to hand. These will be referred to throughout the show.
- Focus on the skills that James is presenting as much as the content. In most cases, students have a knowledge of the topic but struggle to respond to the command in the question. This is a focus of our revision.
- Complete the notes spaces as extensively as possible and, if necessary, return to the show to complete it more than once in order to make the fullest notes possible.

### My ticklist:

- Notes pages
- Exam infographics
- Exam paper
- Exam mark scheme
- Exam model answers

# Performer profiles

Use these performer profiles when making examples and developing your A02 skill. The list is not exhaustive and you are encouraged to use your own examples as well as these ones.



## Josh

**Basic Details**  
Age: 19  
Sport: 100m Sprint  
Level: Olympic Podium Potential



## Tom

**Basic Details**  
Age: 43  
Sport: Tennis (singles and doubles)  
Level: Novice




## Kate

**Basic Details**  
Age: 17  
Sport: Triathlon  
Level: Club



## Laura

**Basic Details**  
Age: 15  
Sport: Gymnastics (Artistic)  
Level: National



## Julie

**Basic Details**  
Age: 26  
Sport: Netball (GD, GK)  
Level: Semi-professional/National



## Carlos

**Basic Details**  
Age: 35  
Sport: Wheelchair basketball  
Level: Ex-national team

# Material covered in the National Mock Exam

- Green denotes content to be covered in this session.
- (#) denotes the number of marks on Paper 1 since 2018.
- Yellow denotes skills that will be covered in the session and that are also covered in the mock exam and model answers.

## 1.1 Applied anatomy & physiology

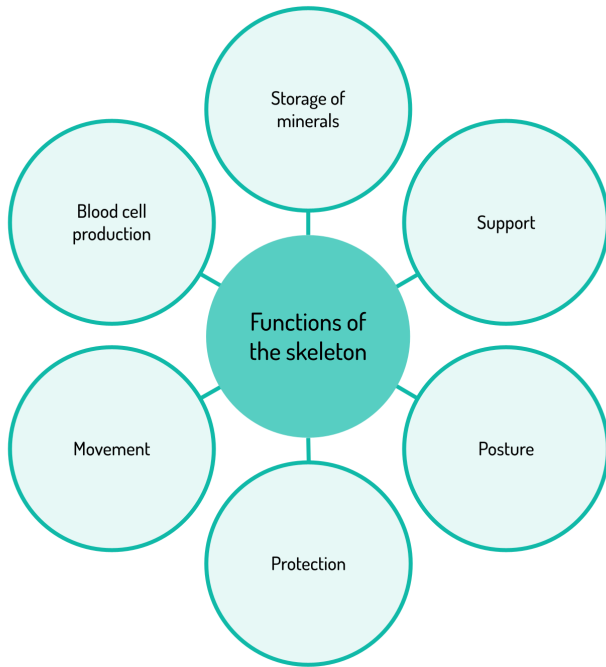
- Location of major bones (11)
- Functions of the skeleton (7)
- Types of synovial joint (4)
- Movements at a hinge and ball and socket joint (2)
- Location of major muscles (5)
- Role of muscles in movement (7)
- Levers (18)
- Planes and axes (20)
- Types of blood vessel (0)
- Pathway of blood through the heart (14)
- Role of red blood cells (2)
- Structure of the respiratory system (5)

- Breathing muscles (8)
- BR, TV and ME (2)
- Alveoli for gas exchange (4)
- Aerobic and anaerobic exercise (5)
- Short term effects of exercise (24)
- Long term training effects (27)
- Collect and use data (12)

## 1.2 Physical training

- Components of fitness (13)
- Fitness tests (12)
- FITT (0)
- Benefits of a warm-up (3)
- Benefits of a cool-down (4)
- Injury prevention (17)
- Potential hazards in sport settings (9)

# Section 1: Functions of the skeleton



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| Function of the Skeleton | Application to rugby  |
|--------------------------|---|
| Support                  | Supporting the lower body when a forward lands on their feet after a lineout                  |
| Posture                  | Allows the tackler to create the correct shape and wrap their arms with the correct technique |
| Protection               | Sternum protects the heart when two players collide during a tackle                           |
| Movement                 | Leverage at the elbow joint when centre passes the ball to a teammate                         |
| Blood cell production    | RBCs carry oxygen and carbon dioxide to and from the muscles of the legs when running         |
| Mineral storage          | Calcium causes leg bones to be dense and strong to cope with the weight-bearing running       |

## Section 2: Roles of muscles

| Agonist                           | Antagonist                       | Fixator  |
|-----------------------------------|----------------------------------|--|
| Muscles that produce the movement | Works to counter the movement    | Stabilises a joint                                 |
| Prime mover                       | Relaxes whilst agonist contracts | Prevent any unnecessary movement                   |
| Working muscles                   |                                  | Deltoid at the shoulder joint during a biceps curl |

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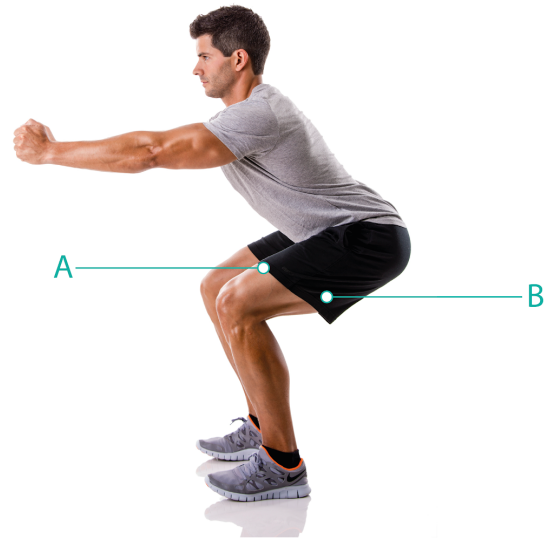
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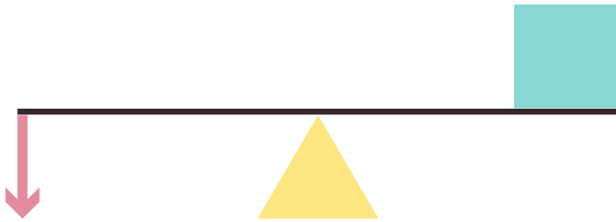
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# Section 3: Lever systems

Levers



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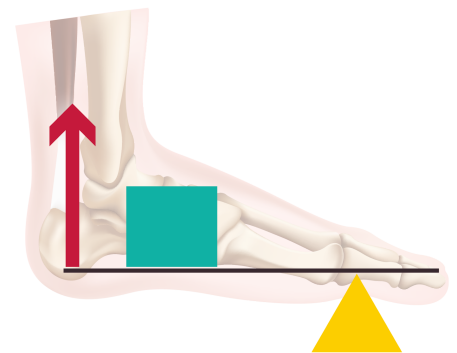
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Levers



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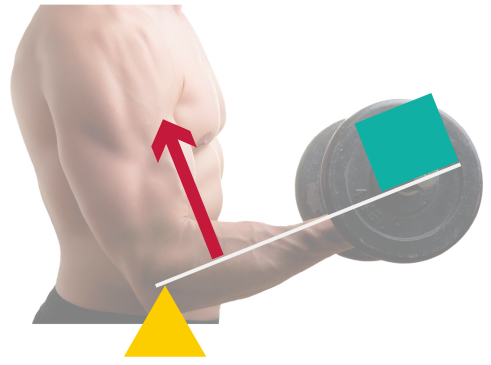
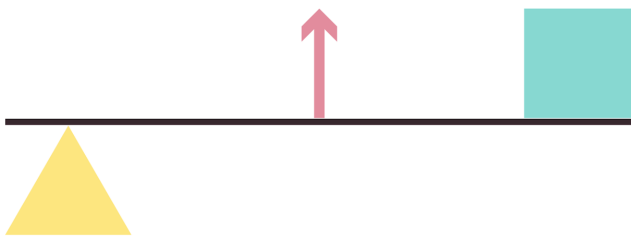
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# Levers



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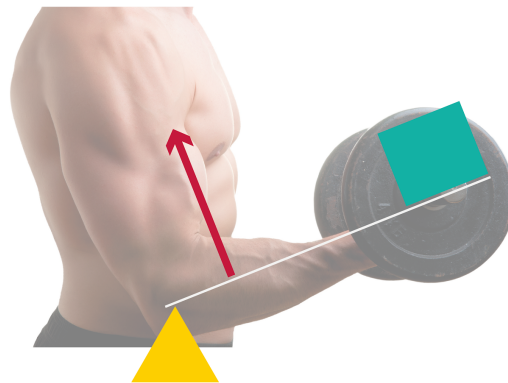
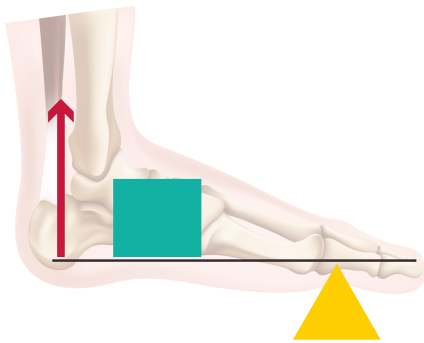
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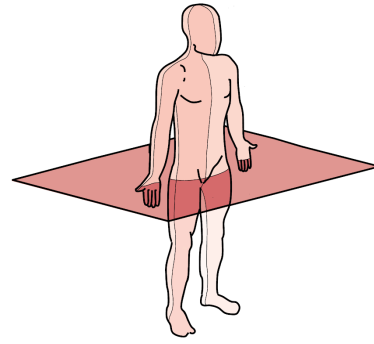
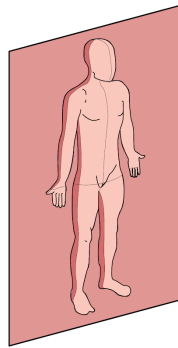
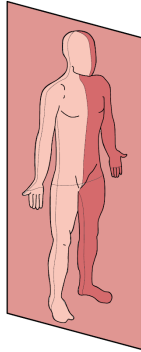
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# Section 4: Planes of movement and axes of rotation



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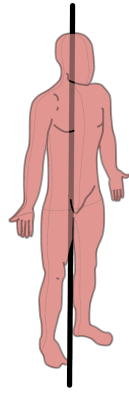
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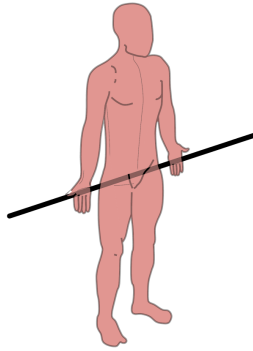
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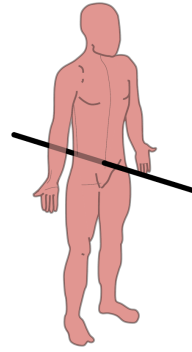
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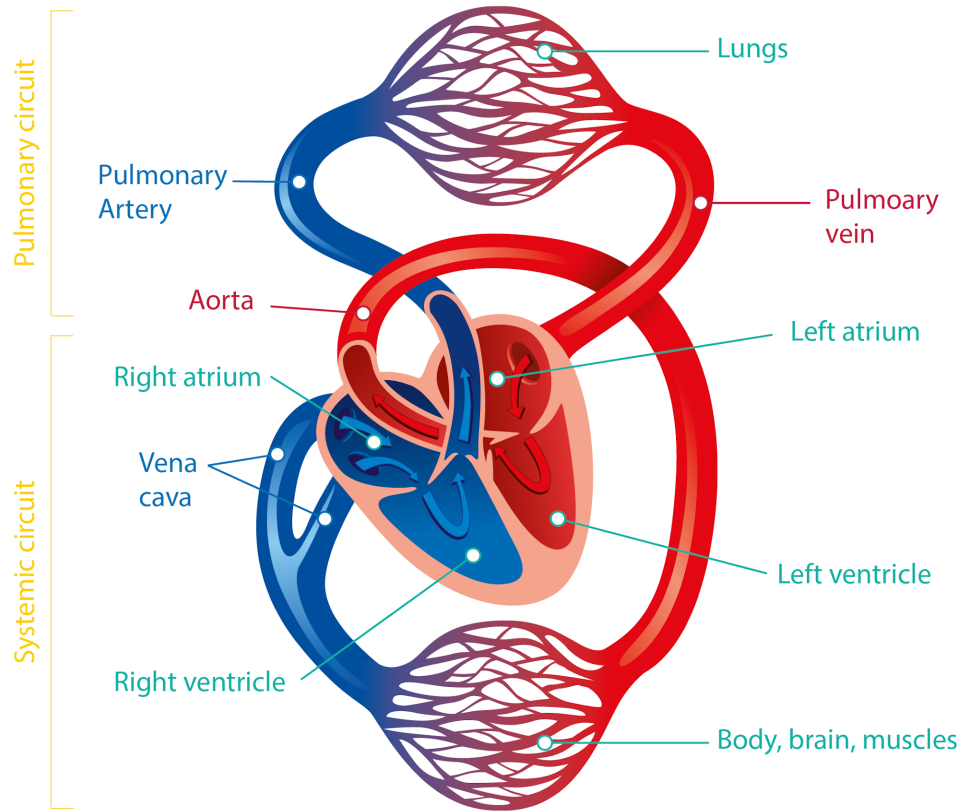
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# Section 5: Pathway of blood through the heart

## Double Loop Circulatory System



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| Chamber    | Role           |
|------------|----------------|
| Atria      | Upper chambers |
|            | Receive blood  |
| Ventricles | Lower chambers |
|            | Eject blood    |

| Type   | Blood vessel     | Description                      |                                   |
|--------|------------------|----------------------------------|-----------------------------------|
| Artery | Aorta            | Exits left ventricle             |                                   |
|        |                  | Robust/Strong/Elastic            |                                   |
|        |                  | High pressure blood              |                                   |
|        |                  | Oxygenated                       |                                   |
| Artery | Pulmonary artery | Carries blood to the whole body  |                                   |
|        |                  | Exits right ventricle            |                                   |
| Vein   | Vena cava        | Deoxygenated                     |                                   |
|        |                  | Carries blood to the lungs       |                                   |
|        |                  | Inferior and superior            |                                   |
|        |                  | Pocket valves                    |                                   |
|        | Vein             | Pulmonary vein                   | Low pressure blood                |
|        |                  |                                  | Deoxygenated                      |
|        |                  |                                  | Carries blood to the right atrium |
|        |                  |                                  | From the lungs                    |
| Vein   | Pulmonary vein   | Oxygenated                       |                                   |
|        |                  | Carries blood to the left atrium |                                   |

| Heart valve | Description                                   |
|-------------|---|
| Bicuspid    | Mitral valve                                  |
|             | Between the left atrium and left ventricle    |
|             | Prevents blood re-entering the left atrium    |
| Tricuspid   | Between the right atrium and right ventricle  |
|             | Prevents blood re-entering the right atrium   |
| Semilunar   | Pulmonary (right) and aortic (left)           |
|             | Prevents blood flowing in the wrong direction |

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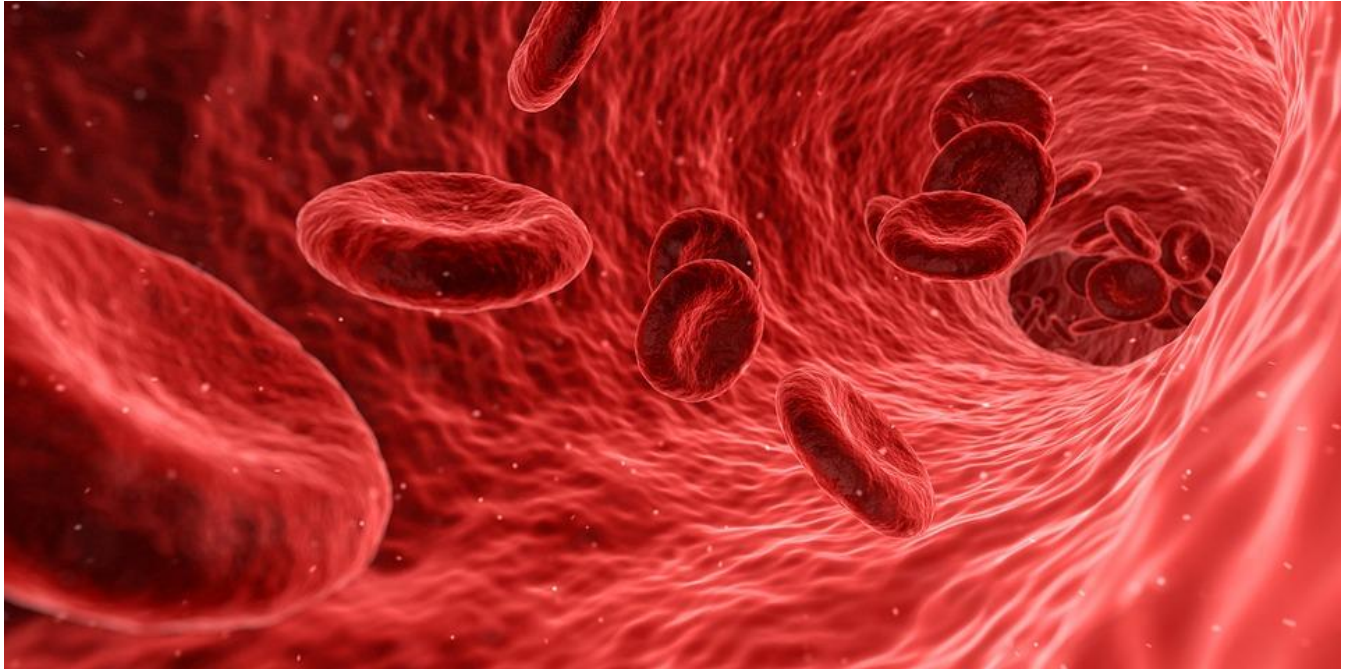


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## Section 6: Role of red blood cells



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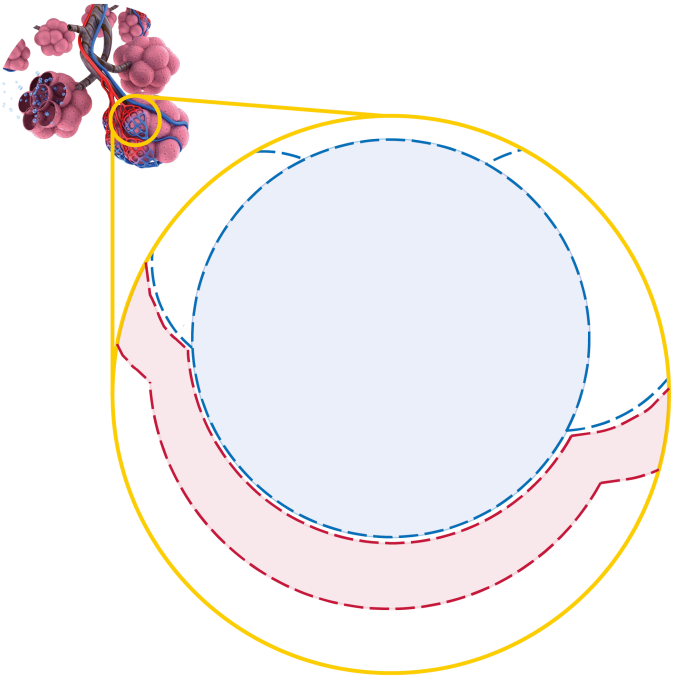
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# Section 7: Alveoli for gas exchange



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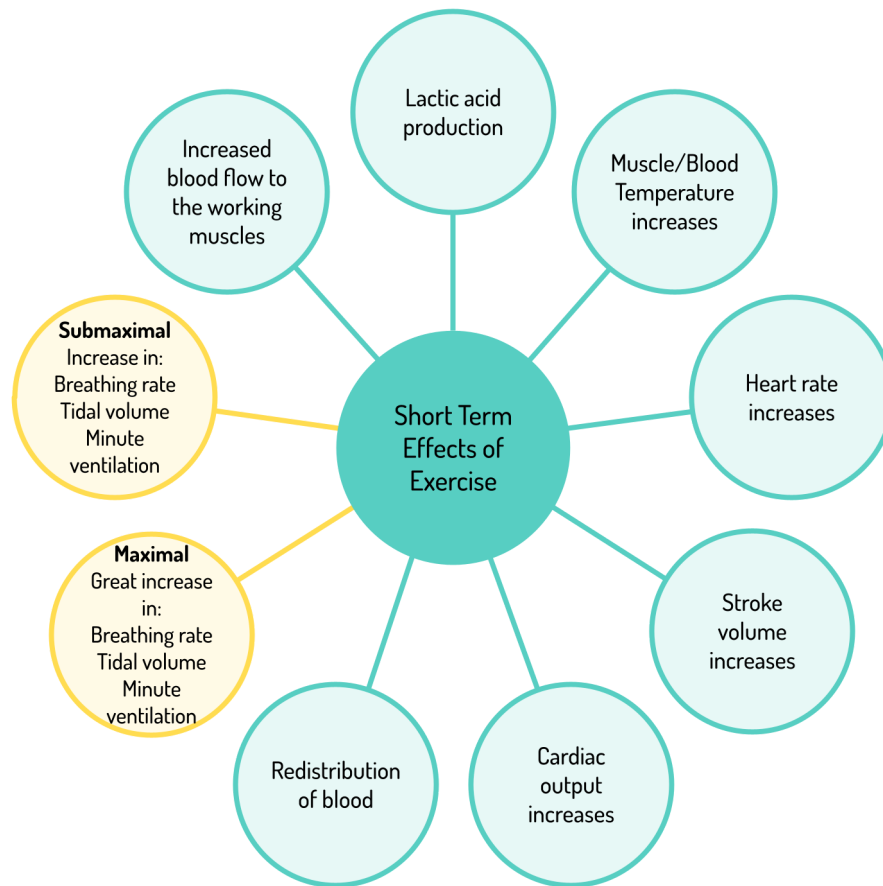
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# Section 8: Short-term effects of exercise



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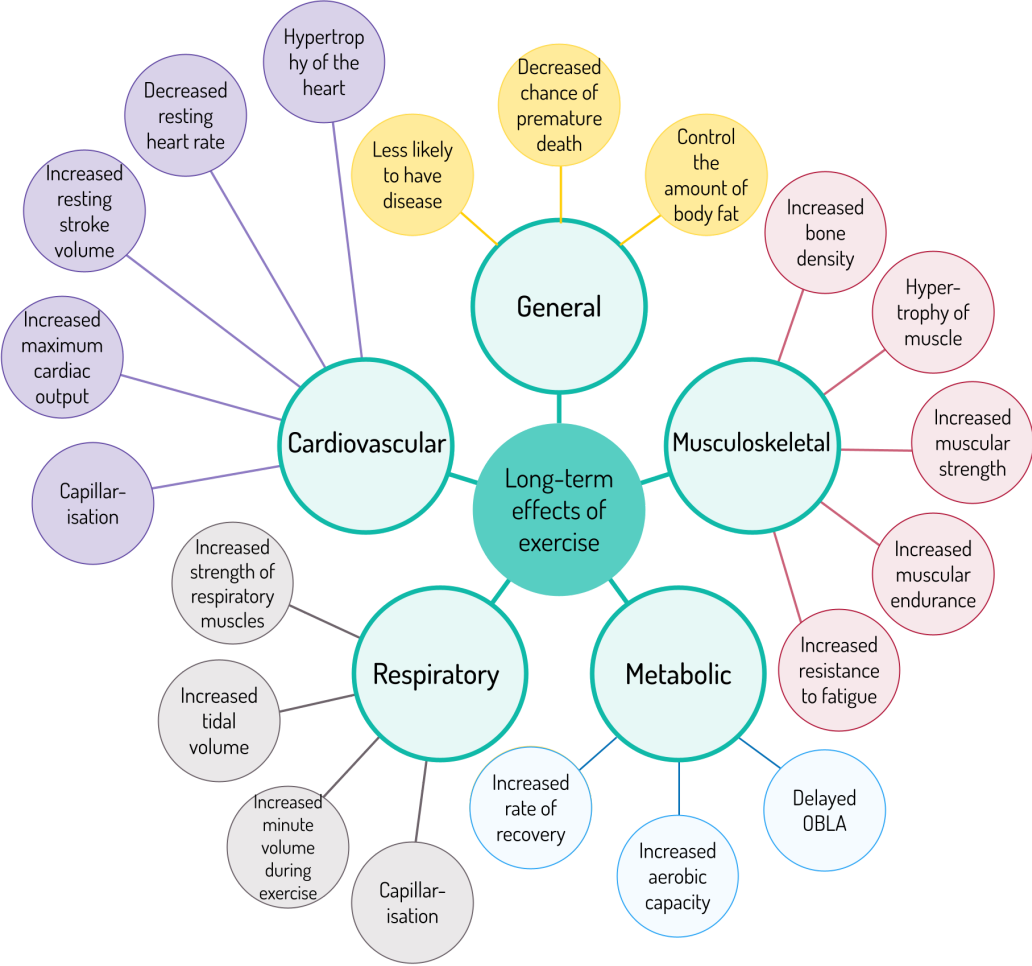
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# Section 9: Long-term effects of exercise



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# Section 10 & 11: Components of fitness & fitness tests

| Components of Fitness - CV endurance |  |
|--------------------------------------|--|
| Definition                           | Ability to continuously exercise without tiring  |
| Examples                             | Triathlete is able to swim, cycle and run continuously without fatigue and <b>work at higher intensities aerobically and prevent OBLA.</b> |
| <b>Cooper 12-minute run/walk</b>     | Measure out a known area/use running track.  |
|                                      | Participants need to keep moving around the area for 12 minutes.   |
|                                      | Result is how far they run/distance covered.   |
|                                      | Calculate metres travelled/measured in metres.   |
| <b>Multi-stage fitness test</b>      | Measure out a 20m track.   |
|                                      | Use a Multi stage fitness recording.   |
|                                      | Keep in time to the bleeps/Arrive at the line on or before the bleep.  |
|                                      | Wait for bleep before turning.   |
|                                      | Bleeps get faster.   |
|                                      | Test ends after two missed bleeps.   |
|                                      | Result is the last level and shuttle they reach.   |

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| Components of Fitness - Muscular endurance |   |
|--|---|
| Definition                                 | Ability of the muscles to repeatedly contract without rest  |
| Examples                                   | Olympic rower repeatedly contracts the biceps to flex the elbows and pull against the water without fatiguing <b>meaning they maintain their pace in the crucial last 100m.</b> |
| Press-up and Sit-up Test                   | Correct sit-up/press-up technique   |
|  | Time for 1 minute   |
|  | Count the number of sit-ups/Count the number of press-ups   |

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| Components of Fitness - Speed |   |
|-------------------------------|---|
| Definition                    | Ability to move the body quickly/<br>Distance divided by time   |
| Examples                      | Table tennis player moves rapidly to their left to reach a hard-hit loop shot <b>before the ball passes their paddle and wins the point for the opponent.</b> |
| 30m Sprint Test               | Select a sprinting area 60-80ms long  |
|                               | Measure a 30m distance  |
|                               | Rolling start/Accelerate before the start   |
|                               | Run as fast as you can/Run through the line   |
|                               | Time is recorded  |

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| Components of Fitness - Strength |   |
|----------------------------------|---|
| Definition                       | Ability of a muscle to exert force for a short period of time   |
| Examples                         | Weightlifter begins to raise a world record weight off the ground <b>by applying maximal muscular force to the bar with the upper and lower body.</b> |
| Grip strength dynamometer test   | Hold in dominant hand   |
|                                  | Start with your hand up   |
|                                  | Bring down to side/Squeeze the handle/Lower arm   |
|                                  | No swinging your hand   |
|                                  | Repeat three times  |
|                                  | Record the maximum force reading  |
| 1 Repetition Maximum (1RM)       | Select the body part/Select the muscle group/Test specific muscle   |
|                                  | Weight lifting technique for that body part   |
|                                  | Select a realistic weight   |
|                                  | Lift weight once  |
|                                  | Rest for 5 minutes  |
|                                  | Repeat with heavier weight  |
|                                  | Repeat the process until a weight is selected that cannot be lifted successfully for one rep  |
|                                  | Last weight you lifted successfully   |
|                                  | Usually measured in kilogram  |

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| Components of Fitness - Power |  |
|-------------------------------|--|
| Definition                    | Combination of strength and speed  |
| Examples                      | 100m sprinter applies maximal force to the block at the highest speed possible <b>to accelerate them ahead of their opponents in the race.</b> |
| Standing Jump test            | Stand with feet facing forwards  |
|                               | Without a run-up   |
|                               | Jump forwards as far as you can  |
|                               | Measure to the back of the heel  |
|                               | Distance in cm   |
| Vertical Jump test            | Reach up and make a mark/Slide ruler up  |
|                               | Jump up and touch the board/Jump up and mark chalk on the wall   |
|                               | Measure the distance between two marks in cm   |

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| Components of Fitness - Flexibility |   |
|-------------------------------------|---|
| Definition                          | RoM around a joint  |
| Examples                            | Hockey goalkeeper shows a wide range of movement in the shoulder <b>by hyperextending to save a slow-moving ball that has already looped over their head and is going into the net.</b> |
| Sit-and-reach test                  | Remove shoes  |
|                                     | Sit on floor with legs straight out   |
|                                     | Soles of feet on the box  |
|                                     | Reach forward with one hand on top of the other   |
|                                     | Stretch as far as possible  |
|                                     | Hold for two seconds  |
|                                     | No jerking movements  |
|                                     | Distance reached is measured in cm  |

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| Components of Fitness - Agility |   |
|---------------------------------|---|
| Definition                      | How quickly you can change direction under control without losing speed, balance or power |
| Examples                        | Netball player dodging left and right <b>to find space to receive the ball.</b>           |
| Illinois Agility test           | Mark out the course to the exact measurements required                                    |
|                                 | Start lying face down on the start line (prone position)                                  |
|                                 | Run the course as quickly as you can  |
|                                 | How fast you complete the course is recorded  |
|                                 | Measured in seconds   |

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| Components of Fitness - Balance |  |
|---------------------------------|--|
| Definition                      | Keeping CoM above base of support  |
| Examples                        | Skier leaning forward to keep their CoM above their skis <b>in order to Prevent a crash and to stay in the race.</b> |
| Stork Stand Test                | Hands on hips and one foot on inside knee of the opposite leg  |
|                                 | Participant raises their heel  |
|                                 | Hold balance for as long as possible   |
|                                 | If either heel of standing foot leaves the floor or other foot leaves the knee, balance is lost                      |
|                                 | The score is total time the participant held the balance successfully  |
|                                 | Measured in seconds  |

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| Components of Fitness - Coordination |   |
|--------------------------------------|---|
| Definition                           | Ability to repeat a pattern or sequence with fluency and accuracy   |
| Examples                             | High jumper arches their back whilst <b>simultaneously kicking their legs up in order to clear the bar with their lower body.</b> |
| Wall Throw test                      | Mark a line 2m from the wall  |
|                                      | Stand behind the line   |
|                                      | Underarm action throw the ball at the wall  |
|                                      | Throw the ball with one hand and catch with the other   |
|                                      | Count the number of successful catches  |
|                                      | In 30 seconds   |

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| Components of Fitness - Reaction Time |   |
|---------------------------------------|---|
| Definition                            | The length of time it takes a performer to respond to a stimulus/The time between the onset of the stimulus and the initiation of the response  |
| Examples                              | Basketball player reacts quickly to their opponents drive to the basket by <b>starting to push of their left foot so they can begin to move to their right to block the route to the basket and prevent 2 points.</b> |
| Reaction Time Ruler test              | Partner holds a ruler above the open hand   |
|                                       | The 0 cm mark must be directly between the thumb and index finger   |
|                                       | Drop the ruler with no warning  |
|                                       | Catch it as soon as possible  |
|                                       | The score is taken from where the top of the thumb hits the ruler   |
|                                       | Measured in cm  |

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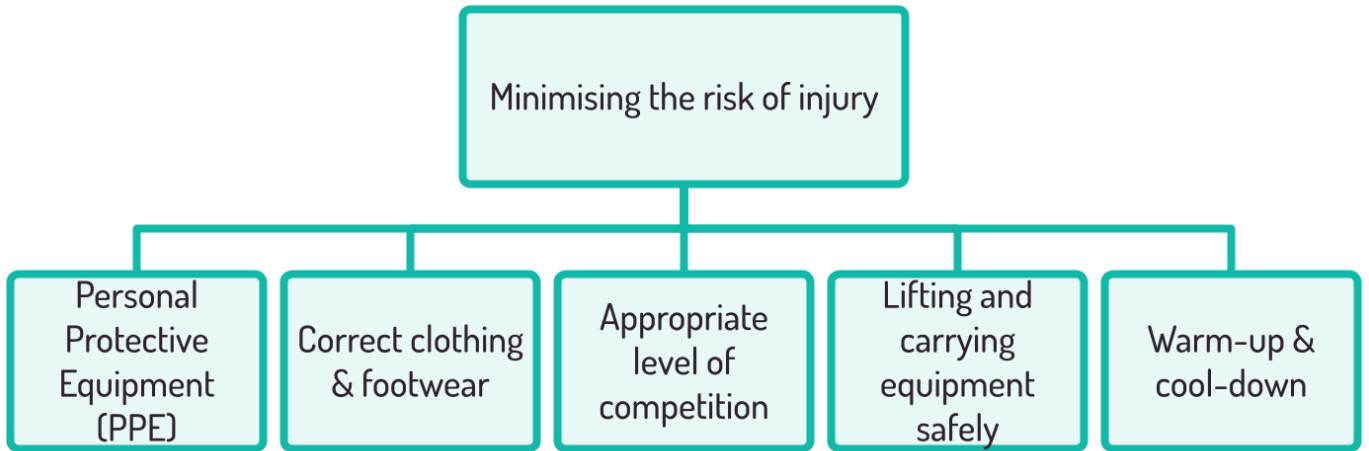


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# Sections 12 & 13: Injury prevention & potential hazards



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| Potential hazards 1                          |  |                                      |
|--|--|--------------------------------------|
| Sports hall                                  | Fitness centre   | Swimming pool                        |
| Hard flooring                                | Litter, bags left out  | Slippery floor & hard surface        |
| Litter, objects, equipment left out          | Overcrowded  | Loose fittings or equipment left out |
| Unsafe equipment                             | Lack of supervision of participants  | Too much chlorine                    |
| Wrong footwear                               | Correct technique or lack of induction session or incorrect use of equipment | Overcrowded                          |
| Overcrowded or clashes with other activities | Floor not clean or is slippery   | Poor behaviour of swimmers           |
| Poor lighting                                | Worn down exercise mats  | Depth of water - drowning            |
|  | Machines too close together  | Dirty water, debris, waste           |
|  | Participants overtrain   |                                      |
|  | Machines misused or more than one person on a machine                        |                                      |

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| *Potential hazards 2   |   |
|--|---|
| *Playing fields  | *Artificial outdoor surfaces                            |
| Surface is uneven or slippery or has debris  | Incorrect footwear or lack of astro trainers            |
| Lack of flood lights or poor lighting  | Grazes and burns from older surfaces                    |
| Distance from emergency support & availability of first aid  | Debris on the surface                                   |
| Wrong footwear, specifically for winter sports   | Surface has been under-watered or under-sanded          |
| Frozen pitch or waterlogged pitch  | Lack of run-off area before the fence                   |
| Poor weather &, in extreme cases, threat of lightning strike   | Incorrect lifting and carrying technique for goal posts |
|  | External hire might mean that equipment becomes damaged |
| *Not previously covered on any PPQ so be prepared to add details to these lists of hazards as mark schemes become available. |   |

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