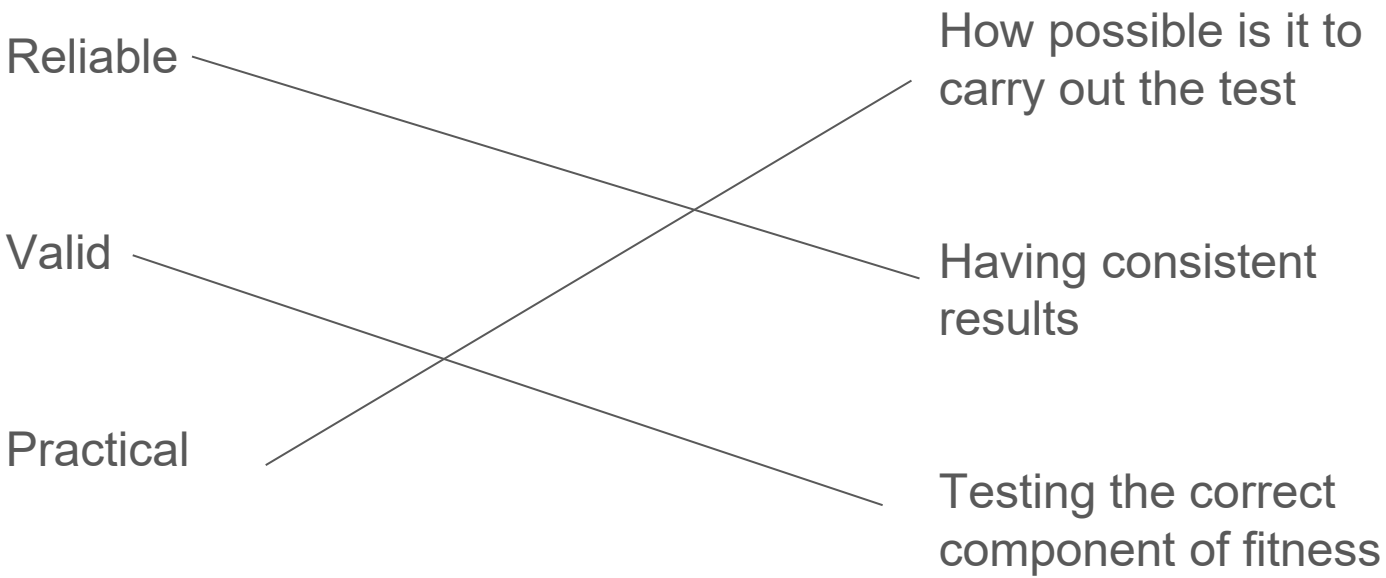
Effects to Exercise Revision

Starter Task –Match the definition to the key word



Check Point

State two factors that can affect reliability of fitness test results. (2 Marks)

Explain two pre-test Procedures that should be carried out before a fitness test is performed (4 Marks)

Check Point

Two factors affecting reliability:

- Calibration of equipment
- Standardised warm-up / test conditions
- Environmental factors (temperature, surface)
- Participant effort or motivation

Two pre-test procedures:

- Informed consent - participant agrees to take part
- Medical / PAR-Q screening to identify health risks
- Standardised warm-up to prepare the body
- Calibration of equipment to ensure accuracy

Carrying out Fitness Tests

Standard Procedure

- A set of instructions describing how to perform the test
- Lists all equipment needed
- Same procedure used every time by everyone
- Results can be compared to normative data

Accurate Recording

- Use the correct equipment for the test
- Record results in a data table immediately
- Use the correct units (e.g. bpm, cm, ml/kg/min)
- Repeat for reliability and average the results

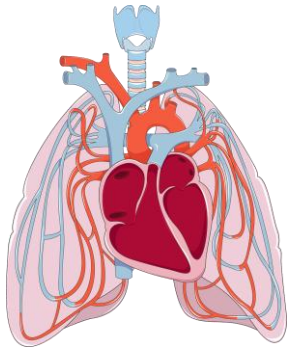
What are the Long term effects to our bodies when exercising?

Aerobic Endurance improves the Cardiorespiratory System

Cardiorespiratory System

Heart gets bigger and stronger - *Cardiac hypertrophy*

- Will contract more and have a higher stroke volume
- Stroke Volume - Pumps more blood around the body



Decreased Resting Heart Rate

- Stroke volume increases therefore needing to pump less

Effects to Exercise Revision

What are the Long term effects to our bodies when exercising?

Respiratory System

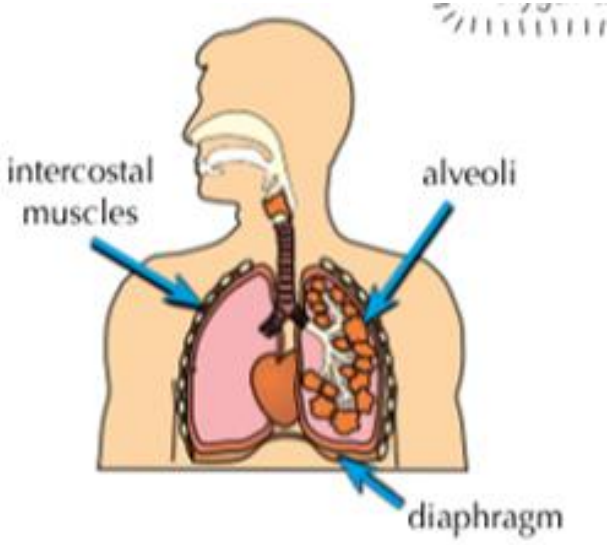
Increased strength of Respiratory Muscles

- Diaphragm and Intercostal muscles get stronger
- More efficient breathing

Increased capillarization of the Alveoli

- Creates new capillaries at the alveoli
- Increases the rate of gaseous exchange

More oxygen in the bloodstream



Check Point

State two long term effects of aerobic endurance training on the body systems (2 Marks)

Explain two ways in which aerobic endurance training can improve the cardiovascular system. (4 Marks)

Effects to Exercise Revision

Check Point

State two long-term effects (2 marks):

- Cardiac hypertrophy - heart gets bigger and stronger
- Decreased resting heart rate (bradycardia)
- Increased stroke volume
- Increased capillarisation of the alveoli
- Stronger respiratory muscles

Explain two cardiovascular improvements (4 marks) — for full marks, name the adaptation AND explain the effect:

- Cardiac hypertrophy: heart muscle thickens, contracts with more force, pumping more blood per beat
- Increased stroke volume: more blood delivered per beat, reduces how often the heart needs to beat
- Decreased RHR: heart works more efficiently at rest, sign of improved cardiovascular fitness

Effects to Exercise Revision

What are the Long term effects to our bodies when exercising?

Musculoskeletal System

Flexibility Training

- More synovial fluid - keeps joints moving smoothly
- Increase in flexibility in the ligaments and tendons
- Increase in length in muscle fibres

Effects to Exercise Revision

What are the Long term effects to our bodies when exercising?

Muscular System - *Muscular Endurance*

Increased capillarisation around muscle tissue

- Muscular endurance increases the amount of capillaries around the muscle
- Transfer oxygenated blood to muscles to release energy
- Remove waste products

Increased Muscle Tone

- Muscle tone - How much tension
- Upright and stable
- More balance and better posture

Effects to Exercise Revision

What are the Long term effects to our bodies when exercising?

Muscular System - *Muscular Strength and Power Training*

Muscle Hypertrophy

- Makes muscles thicker - hypertrophy
- Contract - tear - repair
- When healed - bigger and stronger

Increased bone density

- Denser they are the stronger they are
- Strength and power training causes stress - strengthen by adding minerals
- Stronger bones - less likely to fracture

Increased Tendon and Ligament Strength

- *Strength and power training increase strength of ligament and tendons*
- *Less likely to tear and cause injury*

Effects to Exercise Revision

What are the Long term effects to our bodies when exercising?

Muscular System - *Speed Training*

Increase tolerance to lactic acid

- Lots of energy in a short time
- Creates lactic acid - makes muscles tired
- Long term speed training makes muscles more tolerant to lactic acid - train more often higher intensity

Effects to Exercise Revision

Check Point

Peter has been carrying out regular muscular endurance training to improve his kayaking performance for the past few months.

Explain **one** possible adaptation to Peter's muscular system.

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[2]

Tamara carries out acceleration sprints each week as part of her training programme. Her muscles feel fatigued after each set of runs.

Explain why Tamara's muscles should feel less fatigued after each set of runs over time.

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[2]

Check Point

Q1 Peter has been carrying out regular muscular endurance training to improve his kayaking performance. Explain **one** possible adaptation to Peter's muscular system. [2]

Increased capillarisation - muscular endurance training causes more capillaries to develop around muscle tissue, increasing the delivery of oxygenated blood to the muscles and the removal of waste products (e.g. CO_2, lactic acid).

2M

Q2 Tamara carries out acceleration sprints each week. Her muscles feel fatigued after each set of runs. Explain why Tamara's muscles should feel less fatigued after each set of runs over time. [2]

Increased tolerance to lactic acid - speed/sprint training causes lactic acid to build up in the muscles.
Over time, muscles adapt to tolerate higher levels of lactic acid, raising the **lactate threshold** - so Tamara can work at higher intensities before fatigue sets in.

2M