

Key Terms - Applied Anatomy and Physiology

Skeletal System

Articulating Bones - Where two or more bones meet to allow movement at a joint.

Synovial Joint - An area where two or more bones meet, allowing a wide range of movement

Tendons - Fibrous tissues that join bone to muscle.

Ligaments - Strong, flexible fibre that connects bones to other bones.

Flexion - Movement decreasing the angle between body parts (bending).

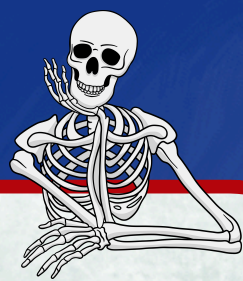
Extension - Movement increasing the angle between body parts (straightening).

Adduction - Movement of a body part toward the body's midline.

Abduction - Movement of a body part away from the body's midline.

Rotation - The action of rotating around an axis or centre.

Circumduction - Rotating 360 degrees around an axis.



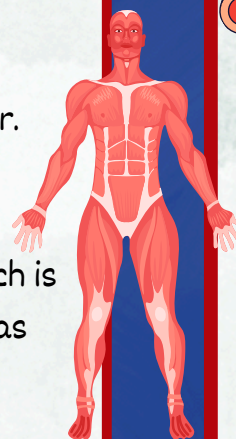
Muscular System

Antagonistic Pair - Two muscles working together. One contracts while the other relaxes.

Agonist - The muscle which is contracting. Also known as the 'prime mover'.

Antagonist - The muscle which is relaxing.

Fixator - A muscle which acts as the stabiliser and helps the agonist work effectively during movement.



Cardiovascular System

Cardiovascular system - The system formed by the heart, blood and blood vessels. AKA the circulatory system.

Blood Vessels - Responsible for transporting blood; arteries, veins and capillaries.

Systemic circulation - carries oxygenated blood away from the heart to the body, and returns deoxygenated blood back to the heart.

Pulmonary circulation - carries deoxygenated blood away from the right ventricle of the heart to the lungs, and returns oxygenated blood to the left atrium of the heart.

Arteries - Blood vessels that takes blood away from the heart.

Veins - Blood vessels that takes blood back to the heart.

Capillaries - Tiny blood vessels that link arteries with veins.

Vasodilation - When blood vessels get bigger (dilate), which cools you down.

Vasoconstriction - When blood vessels get smaller (constrict), which warms you up.

Vascular Shunt Mechanism - The process that increases blood flow to active areas during exercise by diverting blood away from inactive areas.

Red Blood Cells - Contain haemoglobin & are responsible for transporting oxygen around the body.

Respiratory System

Respiratory system - The system of organs and vessels that gets oxygenated blood to the body tissues.

Tidal Volume - The amount of air inspired and expired with each normal breath.

Respiration - The movement of air from outside the body into the cells within tissues.

Diaphragm - A dome-shaped muscle that separates the chest from the rest of the body.

Trachea - The tube that takes air into the body. AKA the windpipe.

Bronchus - Tube along which air passes from the trachea to the lungs.

Bronchioles - Smaller branches coming off the bronchi.

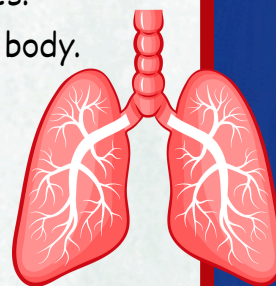
Alveoli - Tiny sacs at the end of the bronchioles, where gas exchange takes place.

Intercostal Muscles - Internal muscles that run between the ribs and help the chest to expand and shrink during breathing.

Haemoglobin - A Protein in red blood cells. Attaches to oxygen & transports it around the body.

Stroke Volume - The amount of blood pumped out of the heart per beat.

Cardiac Output - The volume of blood pumped per minute by each ventricle of the heart.



Effects of Exercise

Heart Rate - The number of times the heart beats each minute

Breathing Rate - The amount of breaths taken per minute

Breathing Depth - The amount of air taken in per breath

Aerobic Respiration - The process of releasing energy from glucose, using oxygen.

Anaerobic Respiration - The process of releasing energy from glucose, without oxygen.

Aerobic Exercise - Exercising at a moderate intensity, allowing the body to utilise oxygen for energy production.

Anaerobic Exercise - Exercising at a high intensity, not allowing the use of oxygen for energy production.

Lactic Acid - A toxic acid produced in muscles during anaerobic exercise. Causes muscle cramps.

Oxygen Debt - The amount of oxygen needed at the end of physical activity to break down any lactic acid.

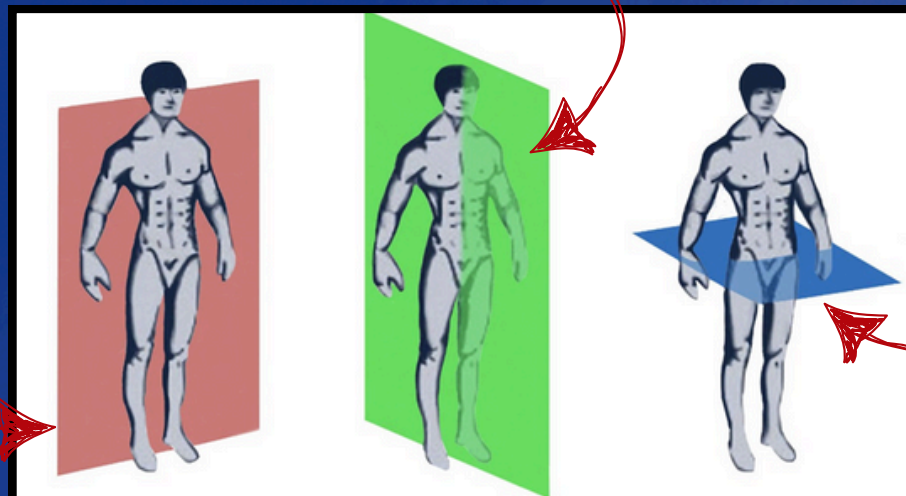
EPOC - Excess Post-Exercise oxygen consumption. This is when there is an increased rate of oxygen intake following activity - in order to pay back the oxygen debt.





Sagittal Plane

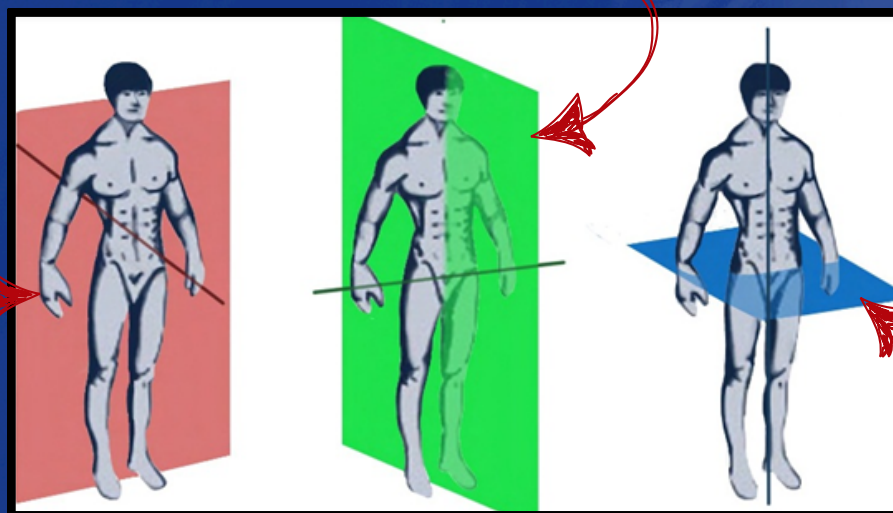
Frontal Plane



Transverse Plane

Transverse Axis

Sagittal Axis



Longitudinal Axis

Planes and Axes of Movement

Plane – An imaginary line dividing the body vertically into left and right sides

Axis – An imaginary line dividing the body vertically from front to back.

Sagittal Plane – Splits the body down the middle resulting in a left side and a right side.

Frontal Plane – Divides the body so that there are front and back sections.

Transverse Plane (AKA Horizontal Plane) – Divides the body across the middle (horizontally), giving a top section and a bottom section.

Transverse Axis – From hip to hip.

Longitudinal Axis – Vertical line – top to bottom.

Sagittal Axis – Stabs through the body.

Key Terms - Movement Analysis

Lever Systems

Fulcrum – The point around which the lever rotates.

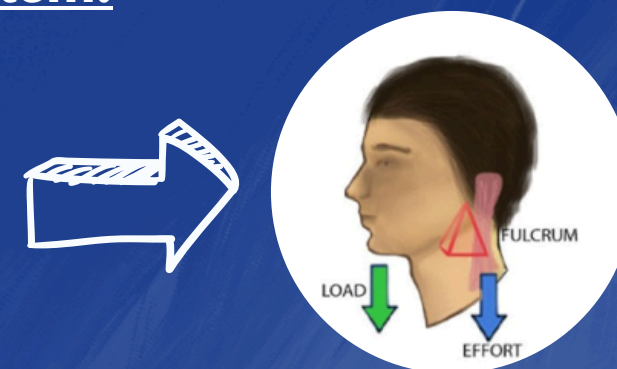
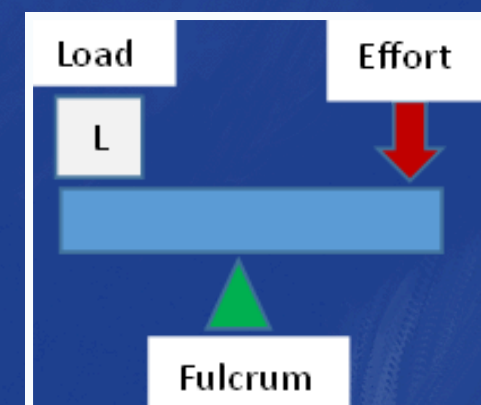
Load – The force of the thing that you want to move.

Effort – The force that is applied by the user of the lever system.

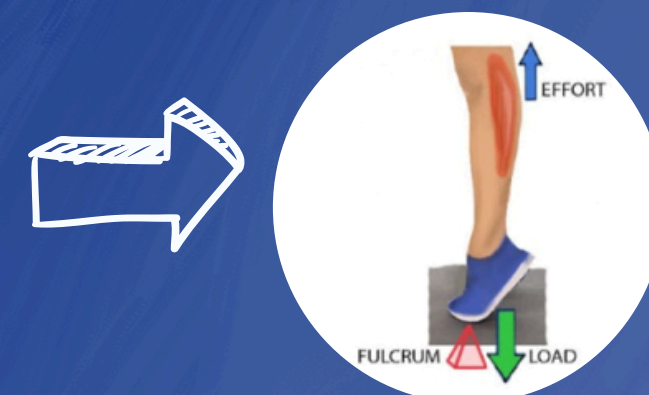
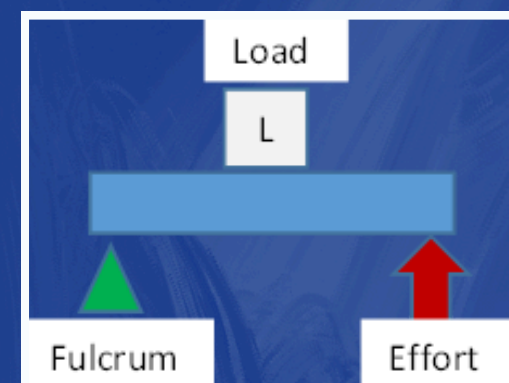
Mechanical Advantage – A large load can be lifted with relatively little effort.

Mechanical Disadvantage – Takes a lot of effort to lift a relatively small load.

First Class Lever System:



Second Class Lever System:



Third Class Lever System:

