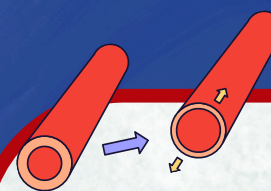
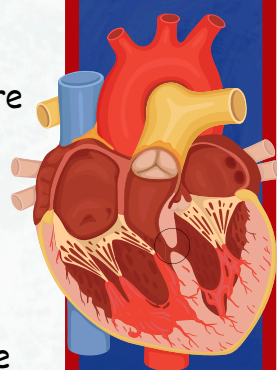
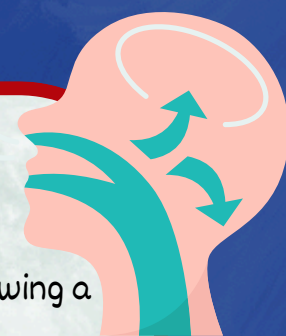
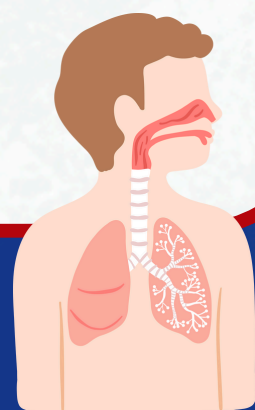




Key Terms - Applied Anatomy and Physiology Part 1

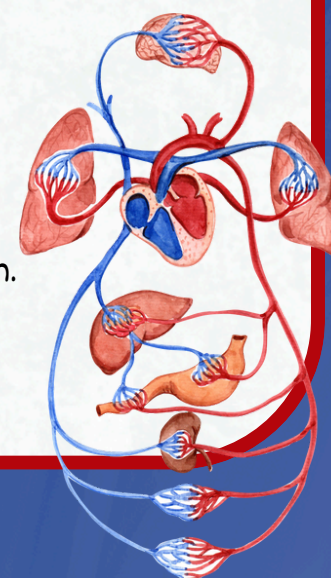
Respiratory System

- Tidal Volume** – Volume of air breathed in or out per breath.
- Inspiratory Reserve Volume** – Volume of air that can be forcibly inspired following a normal breath.
- Expiratory Reserve Volume** – Volume of air that can be forcibly expired following a normal breath.
- Residual Volume** – Volume of air that remains in the lungs after maximum expiration.
- Minute Ventilation** – Volume of air breathed in or out per minute.
- Diffusion** – The movement of a substance from an area of high concentration to an area of low concentration.
- Partial Pressure** – The pressure of an individual gas when it exists amongst a mixture of gases.
- Concentration Gradient** – The process of particles moving through a solution or gas from an area with a higher number of particles to an area with a lower number of particles.
- Stretch Receptors** – A sensory receptor that responds to the over-expanding of the lungs.
- Inspiratory Centre** – Located in the medulla oblongata and responsible for breathing (inspiration).
- Expiratory Centre** – Located in the medulla oblongata and responsible for breathing (expiration).
- Myoglobin** – An oxygen binding protein found in muscle tissue.
- Haemoglobin** – An oxygen binding protein found in red blood cells.
- Oxyhaemoglobin** – Found when oxygen combines with haemoglobin.
- Mitochondria** – The part of the cell where respiration and energy production occur
- Dissociation Curve** – A graphical representation of the rate at which oxygen separates from haemoglobin and diffuses into the muscle cells.
- Bohr Shift** – The shift to the right that the dissociation curve makes during exercise.
- Arteriovenous Oxygen Difference** – The difference between the pressure of the oxygen in the arteries and veins.
- Partial Pressure** – The pressure of an individual gas when it exists amongst a mixture of gases.



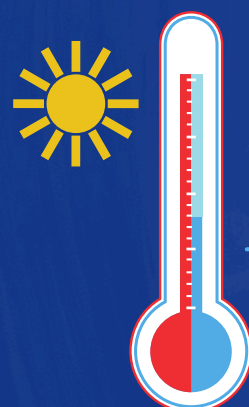
Cardiovascular System

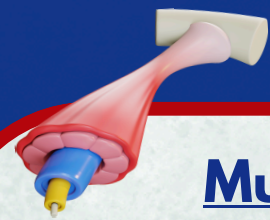
- Stroke Volume** – The volume of blood pumped out of the ventricles during each contraction.
- Cardiac Output** – The volume of blood pumped out of the ventricles per minute ($HR \times \text{Stroke Volume}$).
- Sympathetic Nervous System** – Part of the ANS and can activate an increase in HR.
- Parasympathetic Nervous System** – Part of the ANS and can activate a decrease in HR.
- Vascular Shunting** – The redistribution of blood flow around the body.
- Myogenic** – The heart's ability to create its own contraction.
- Chemoreceptors** – Responsible for detecting a change in CO_2 /Lactic Acid/Blood Acidity.
- Baroreceptors** – Responsible for detecting a change in blood pressure.
- Proprioceptors** – Responsible for detecting a change in muscle movement.
- Plasma** – The liquid part of blood.
- Myoglobin** – An oxygen binding protein found in muscle tissue.
- Venous Return** – The flow of the blood back to the heart via the veins and specifically the vena cava.
- Starling's Law** – Stroke volume increases due to an increase in venous return.
- Cardiac Systole** - The contraction of the cardiac muscle.
- Cardiac Diastole** - The relaxation of the cardiac muscle.



Environmental Effects on Body Systems

- Thermoregulation** - Maintaining internal core temperature.
- Thermoreceptors** - Sensory receptors that detect a change in temperature and relay info to the brain.
- Hypothermia** - Significantly raised body temperature.
- Cardiovascular Drift** - Upward drift in heart rate linked to increased body temperature.
- Acclimatisation** – When an athlete gradually adapts to an environmental change.



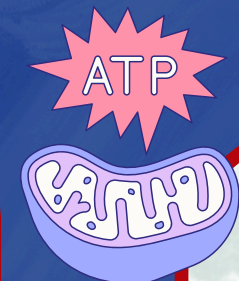
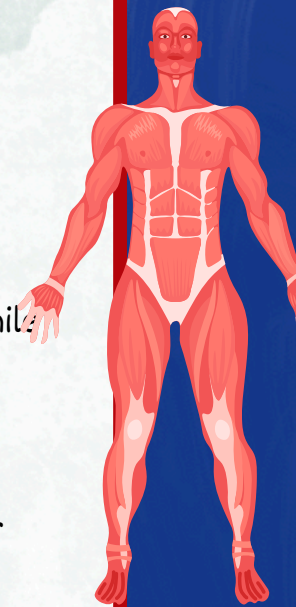


Key Terms - Applied Anatomy and Physiology

Part 2

Musculo-skeletal System

- Sagittal Plane** – Divides the body into a left and right section.
- Frontal Plane** – Divides the body into a front and back section.
- Transverse Plane** – Divides the body into a top and bottom section.
- Transverse Axis** - From hip to hip.
- Longitudinal Axis** - Vertical line - top to bottom.
- Sagittal Axis** - Stabs through the body.
- Articulating Bones** – Where two or more bones meet to allow movement at a joint.
- 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).
- Dorsi-Flexion** - Flexing the toes so that they move closer to the shin.
- Plantar-Flexion** - Extending the toes down, away from the shin.
- Adduction** - Movement of a body part toward the body's midline.
- Abduction** - Movement of a body part away from the body's midline.
- Antagonistic Pair** - Two muscles working together. One contracts while the other relaxes.
- Agonist** - Muscle or group responsible for the movement.
- Antagonist** - Acts to produce the opposite action of the agonist.
- Fixator** - A muscle that stabilises one part of the body while another part moves.
- Isometric Contraction** - Where a muscle contracts but the length of the muscle does not change (therefore it doesn't move).
- Eccentric Contraction** - Occurs when the muscle lengthens due to a greater opposing force.
- Concentric Contraction** - Occurs when the muscle shortens, therefore generating force.
- Neurotransmitter** - A chemical substance released at the end of a nerve fibre by a nerve impulse. It diffuses across the synapse (gap) to transfer the impulse to another fibre.



Energy For Exercise

- Glycolysis** – The process in which glucose is converted to pyruvate to produce energy.
- Krebs Cycle** – A series of cyclical chemical reactions that take place in the mitochondria.
- Electron Transport Chain** – A series of chemical reactions that take place in the cristae of the mitochondria.
- Mitochondria** – The working organelles that keep the cells full of energy.
- Beta-Oxidation** – The breakdown of fatty acids in order to provide ATP.
- ATP** – An organic chemical that provides energy in living cells.
- The Energy Continuum** - The sequence which covers the type of respiration required during exercise.
- EPOC** – Excess post-exercise oxygen consumption. The amount of oxygen taken on during recovery above the resting rate.
- VO2 Max** - The maximum volume of oxygen that can be consumed by the working muscles per minute.
- Sarcoplasm** - The cytoplasm within the muscle cell which stores PC, glycogen and myoglobin.
- Creatine Kinase** - An enzyme which catalyses the breakdown of PC.
- Phosphocreatine** - A high-energy compound stored in the muscle cell and broken down for ATP resynthesis.
- ATPase** - An enzyme which catalyses the breakdown of ATP.
- ADP** - A compound formed by the removal of a phosphate bond from ATP.
- PFK** - An enzyme which catalyses the breakdown of glucose (glycolysis).
- LDH** - An enzyme which catalyses the conversion of pyruvic acid into lactic acid.
- OBLA** - The onset of blood lactate accumulation, when lactate levels rise significantly and fatigue occurs.
- Buffering Capacity** - The ability of hydrogen ions to neutralise the effects of lactic acid in the blood.
- Lipase** - An enzyme which catalyses the breakdown of triglycerides into Free fatty acids.
- FFAs** – Free fatty acids which provide a huge fuel store, producing more acetyl-CoA and a higher energy yield. They require 15% more oxygen to metabolise.
- Oxygen Deficit** - The volume of oxygen that would be required to complete an activity entirely aerobically.
- Gluconeogenesis** - Formation of glucose/glycogen from pyruvic acid.
- Partial Pressure** - The pressure exerted by an individual gas in a mixture of gases.
- Erythropoietin** - A hormone responsible for RBC production.

