

Definitions and Concepts for Edexcel (A) Biology A-level

Topic 1 - Lifestyle, Health and Risk

Topic 1 - Data collection and analysis

Accuracy: How close the data is to the correct or accepted value.

Causation: A relationship between two values or pieces of data where one influences the other.

Correlation: An observed relationship between two completely separate values or pieces of data.

Precision: How close the repeated values of an experiment are to each other.

Qualitative data: Data in the form of non-numerical qualities and characteristics.

Quantitative data: Data in the form of measurable numbers and statistics.

Reliability: The ability to get consistent and repeatable results.

Validity: How well the data measures what it is supposed to.

Topic 1 - Energy, carbohydrates and fats

Amylopectin: A branched polysaccharide made up of alpha glucose monomers joined by α -1,6 glycosidic bonds that makes up starch along with amylose.

Amylose: An unbranched polysaccharide made up of alpha glucose monomers joined by α -1,4 glycosidic bonds that makes up starch along with amylopectin.

Body mass index (BMI): A method of measuring a person's weight with respect to their height to calculate whether they are of a healthy weight or not.

Condensation reaction: A type of reaction that joins two molecules together with the formation of a chemical bond involving the elimination of a molecule of water.

Disaccharide: Molecules formed by the condensation of two monosaccharides.

Ester bond: A type of bond formed by a condensation reaction which joins each of the fatty acid tails to the glycerol molecule in a triglyceride.

Glycogen: A highly branched polysaccharide made of alpha glucose monomers that is used as the main storage of energy in humans and animals.

Glycosidic bond: A bond between two monosaccharides formed in a condensation reaction.

High-density lipoproteins (HDL): A dense molecule made of proteins and lipids that is used to remove cholesterol from tissues and transport it to the liver for excretion.

Hydrolysis: Breaking a chemical bond between two molecules involving the use of a water molecule.

Low-density lipoproteins (LDL): A lower density molecule made of proteins and lipids that is used to transport cholesterol around the body to different tissues which can cause cholesterol buildup in blood vessels.

Monosaccharide: The individual sugar monomers from which larger carbohydrates are made.

Polysaccharide: Molecules formed by the condensation of many monosaccharides.

Saturated fatty acid: A type of fatty acid molecule containing only single bonds between the carbon atoms.

Starch: A polysaccharide made of alpha glucose monomers that is used as the main storage of energy in plants.

Triglyceride: A type of lipid formed from a molecule of glycerol joined by ester bonds to three fatty acid molecules.

Triglyceride: A type of lipid formed from a molecule of glycerol joined by ester bonds to three fatty acid molecules.

Unsaturated fatty acid: A type of fatty acid molecule containing at least one double bond in the carbon chain.

Waist-to-hip ratio: A comparison of the size of a person's waist to their circumference of their hips which can be used to determine a person's health risk.

Topic 1 - Heart disease

Anticoagulants: A class of drug used to stop blood from forming clots and used as a treatment for CVD.

Antihypertensives: A class of drug that is used as a treatment for high blood pressure (hypertension).

Atherosclerosis: A disease caused by a buildup of fatty deposits within arteries which narrows them and can restrict blood flow.

Cardiovascular disease (CVD): A term used to describe a group of diseases related to the heart and blood vessels.

Coagulation: The process of blood turning into a gel and forming a clot, often in response to a broken blood vessel to prevent blood loss.

Risk factor: A factor that increases the likelihood of a person developing a disease.

Statins: A class of drug that is used to lower cholesterol levels in the blood.

Topic 1 - Mass transport

Dipole: A molecule which has an unequal distribution of electrons which causes atoms in the molecule to have partial charges.

Mass transport: The bulk transport of substances to all parts of an organism using mass flow.

Solvent: A substance which solutes can dissolve in to form a solution.

Topic 1 - The cardiovascular system

Aorta: The main artery that carries oxygenated blood away from the heart at high pressure.

Arteriole: A smaller type of blood vessel that connects arteries with capillaries.

Artery: A type of blood vessel that carries blood at high pressure away from the heart.

Atrial systole: The phase in the cardiac cycle following diastole where the atria contract and force the blood into the ventricles.

Atrium: A type of chamber in the heart which receives blood directly from a vein and passes it on to a ventricle.

Capillary: A very small blood vessel with thin walls and a small diameter used for substance exchange in tissues.


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Cardiac diastole: The phase in the cardiac cycle following ventricular systole where the atria and ventricles are both relaxed and blood flows into the atria.

Coronary artery: The main artery that supplies the heart tissue with blood.

Left atrium: The chamber in the heart that receives oxygenated blood from the pulmonary vein and passes it on to the left ventricle.

Left ventricle: The chamber in the heart that receives oxygenated blood from the left atrium and pumps it out of the heart to the rest of the body.

Pulmonary artery: The main artery that carries deoxygenated blood from the heart to the lungs for reoxygenation.

Pulmonary vein: The main vein that carries oxygenated blood away from the lungs and back to the heart.

Right atrium: The chamber in the heart that receives deoxygenated blood directly from the vena cava and passes it on to the right ventricle.

Right ventricle: The chamber in the heart that receives deoxygenated blood from the right atrium and pumps it out of the heart to the lungs for reoxygenation.

Vein: A type of blood vessel that carries blood at lower pressure into the heart from other parts of the body.

Vena cava: The main vein that carries deoxygenated blood into the right atrium of the heart.

Ventricle: A type of chamber in the heart which receives blood from the atrium above it and pumps it out of the heart.

Ventricular systole: The phase in the cardiac cycle following atrial systole where the ventricles contract and force the blood out of the heart and around the body.

Venule: A smaller type of blood vessel that connects capillaries with veins.