

A-Z glossary

Additional resource

TERM	DESCRIPTION
A	
Accelerometer	Similar to a pedometer or step counter, a hip mounted motion sensor that can be used to objectively measure activity levels.
ACE inhibitor	A type of drug or medication that are mainly used to treat high blood pressure and/or heart failure. ACE stands for angiotensin converting enzyme. These drugs inhibit or block the action of this enzyme and cause a relaxation of blood vessels and reduce the water reabsorbed by the kidneys (reducing the volume of water resorbed reduces the blood pressure).
Angina	Chest pains caused by a reduced blood flow (ischaemia) and therefore lack of oxygen to the heart, due to a narrowing of the coronary arteries. It commonly results in chest pains when the heart has to work harder e.g. With exercise. Stable angina is a type of angina where symptoms are brought on by physical, mental or emotional exertion, but resolve quickly with rest. Unstable angina is a type of angina where symptoms may start unexpectedly, without exertion or stress.
Angiography / angiogram	An investigation to look at the blood vessels that supply the heart muscle by injecting a dye into the coronary arteries that can be seen on an X-ray.
Aorta	The largest artery in the body, exiting the left ventricle of the heart to transport oxygenated blood to the body.

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Arrhythmia	An irregular heartbeat
Arteriole	A small artery, carrying blood from the heart towards the body's tissues.
Artery	A blood vessel that carries blood from the heart towards the body's tissues. The artery wall contains a layer of smooth muscle that can contract and relax.
Association study	A genetic study of a large number of people with or without a disease, to compare genetic variations between the 2 groups.
Atheroma	A large atherosclerotic lesion in an artery with a lipid-filled necrotic core covered by a fibrous cap.
Atherosclerosis	An inflammatory process where cholesterol is deposited in the arteries and they later become hardened (athero= fatty; sclerosis= hardened).
Atrium / atria	The upper chambers of the heart.
B	
Blood pressure	The physical pressure exerted by the blood on the blood vessels. It is transiently increased by the contraction of the heart forcing the blood through the vessels (systole). See systole and diastole.
Blood vessel	The tubes or pipes that distribute blood around the body.
Blood	The fluid that fills the blood vessels, consisting of liquid plasma and the blood cells suspended in it (red blood cells, white blood cells and platelets). It transports oxygen, carbon dioxide, salts, sugars and proteins around the body.
Body mass index (BMI)	A calculation to classify a person on the basis of their weight whilst taking into account their height. $BMI = \text{weight (in kg)} / \text{height (in metres)}^2$. A healthy BMI is considered to be between 20 and 25.

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Bradycardia / bradyarrhythmia	A slow heartbeat.
C	
Calcium channel blocker	A type of drug or medication used to treat a variety of cardiovascular conditions. Calcium plays a role in the contraction of muscle cells, including the smooth muscle that surrounds blood vessels, and the heart muscle. Blocking this action allows the blood vessels to relax and thus lowers blood pressure and also reduces the force of the heartbeat.
Capillary	The tiny blood vessels where oxygen leaves the blood and enters the tissues, and carbon dioxide leaves the tissues to enter the blood.
Carbon dioxide	A by-product of energy production within cells that needs to be removed via the blood, to be exhaled from the lungs.
Cardiac output	The volume of blood pumped by the heart per minute. Cardiac output = heart rate x stroke volume.
Cardiovascular disease	Diseases or conditions that affect the cardiovascular system (heart and circulatory system).
Carotid body	An area rich in neurons within the carotid artery (in the neck), whose role is to monitor levels of oxygen, carbon dioxide and acidity (pH) of blood.
Cerebrovascular disease	Diseases or conditions that affect the blood vessels that supply the brain. Stroke is an example of cerebrovascular disease.
Cholesterol	A specific type of lipid (fat molecule) that is an essential part of human plasma membranes (the outer wall of every cell in our body). It is also vital for the synthesis of several hormones, vitamin D and bile acids. However, particularly high levels of cholesterol (specifically LDL cholesterol) have been associated with an increased risk of cardiovascular disease.

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Chordae tendinae	The fibrous cords that attach the heart valves to the papillary muscles to prevent the valves from turning inside out when the heart contracts.
Circulatory system	The network of blood vessels that distribute blood around the body.
Coagulation cascade	A cascade or chain reaction that leads to the conversion of liquid blood to a gel. Triggered by damage to the blood vessel, one enzyme activates the next, which activates the next and so on, ultimately leading to the conversion of fibrinogen to chains of fibrin.
Coagulation	The process where the blood converts from liquid to a gel due to the polymerisation of fibrinogen to chains of fibrin i.e. part of blood clotting.
Co-morbidity	A medical condition that is often associated with another condition.
Connective tissue	A thin layer of tissue, made of protein such as collagen that wraps around cells and tissues, encasing them and providing support.
Control value	A baseline (normal) reading for comparison to the test reading.
Coronary arteries	The small arteries that supply the heart muscle with blood and oxygen, enabling the heart to function.
Coronary artery bypass graft (CABG)	A surgical operation where a blockage in a coronary artery is bypassed by attaching another blood vessel above and below the blockage.
Coronary heart disease	Diseases that cause a narrowing of the small coronary arteries that supply the heart muscle with blood and oxygen, commonly by a build-up of fatty deposits (atherosclerosis). This can result in either angina or a heart attack.

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Correlation	An association or relationship between 2 factors e.g. There is a correlation between age and likelihood of developing a cardiovascular disease.
D	
Deep vein thrombosis (DVT)	The inappropriate formation of a thrombus or clot within a vein, usually in the veins of the legs.
Deoxygenated	Containing less, or no, oxygen.
Depolarisation	Referring to electrical conduction of nerve impulses, where the inside of the cell becomes less negative (more positive). Waves of depolarisation make the heart muscle contract.
Diabetes	A disease caused by either a lack of insulin production, or a reduced sensitivity to insulin, which results in high blood glucose (sugar) levels. Long term high glucose levels are damaging to many tissues including the heart and blood vessels.
Diastole	The phase of the cardiac cycle where the heart muscle relaxes enabling the heart to fill with blood. Diastolic pressure is the pressure exerted by the blood on the arteries when the heart is relaxed. A normal value for adults is about 80mmHg.
Differentiation	The process by which cells become more specialised for a specific role or function.
Diffusion	The passive (no energy required) process of substances moving from areas of high concentration to areas of lower concentration. A diffusion gradient is a concentration range from higher to lower concentration.
Dilation / dilatation	The widening of a blood vessel.
Diuretic	A type of drug or medication that is often used to treat a variety of cardiovascular conditions. They increase the volume of liquid lost through urination, reducing blood pressure and the workload of the heart.

E

Echocardiogram	An ultrasound scan of the heart to investigate structures within the heart such as the heart muscle, chambers or valves.
Ejection fraction	The amount, or percentage, of blood in the left ventricle that is pumped out with each contraction.
Electrocardiogram (ECG)	A device that records the electrical activity of the heart to investigate the heart rhythm.
Embolism	Where part of a thrombus or clot breaks off to travel in the blood until it becomes stuck in a smaller blood vessel.
Endothelium / endothelial cells	A type of cell that lines structures such as blood vessels.
Enzyme	A specialised protein that helps chemical reactions to occur faster.
Epidemic	A state or condition (e.g. Obesity, infection) affecting many people within an area at approximately the same time.

F

Fibrillation	An erratic or uncoordinated heart beat that is unable to sufficiently pump blood.
Fibrinogen	A plasma protein with an important role in haemostasis. The coagulation cascade leads to the conversion of fibrinogen to chains of fibrin to transform the liquid blood to gel, and fibrinogen is also able to stick platelets together enabling them to plug damage in blood vessels.
Fissure	A crack or tear in tissues.

G

Genetic variance	Variations in the genetic code that alter things like the amount of a protein produced, where and when it is produced, or its activity.
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Genome wide association study	A genetic association study carried out for genetic variants across the whole genome simultaneously usually involving many subjects to enable the specific diseases to be traced to variations or mutations.
Genome	The entire genetic make-up of an organism.
Glyceryl trinitrate (GTN)	A chemical or medication used to dilate the blood vessels and thus relieve the symptoms of angina.
H	
Haemoglobin	The protein found inside red blood cells that carries oxygen around the body.
Haemorrhage	An external or internal bleed.
Haemorrhagic stroke	A type of stroke (lack of blood and oxygen to the brain) caused by haemorrhage (bleeding) from the blood vessels that supply the brain. A bleed inside of the bony skull has nowhere to go and so the fluid squashes the delicate brain tissue, preventing the flow of blood in the compressed tissues.
Haemostasis	The physiological process to prevent blood loss upon injury (haem= blood; stasis= to slow down).
Heart attack	See myocardial infarction.
Heart failure	The failing (insufficiency) of the heart as a mechanical pump due to either acute damage or chronic overwork.
Heart rate	The number of beats of the heart per minute. Also known as pulse rate.
Heart	A four chambered organ that pumps blood around the body.
High density lipoprotein (HDL)	A protein-fat particle found in plasma that removes cholesterol from the tissues to the blood and then to the liver. Low levels of HDL are associated with an increased risk of cardiovascular disease.

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Hydrogenated	The chemical process of converting unsaturated fats (tend to be more liquid) to saturated fats (tend to be more solid).
Hypertension	A condition of high blood pressure (usually over several readings). Usually defined by a systolic pressure of 140mmHg or more and/or a diastolic pressure of 90mmHg or more.
Hypertrophy	An increase in size of a structure or organ e.g. Hypertrophy of the heart.
Hypotension	A condition of low blood pressure.
I	
Incidence	A measure of the number of times a disease or condition arises in a population over a set period of time i.e. The number per 100,000 people who develop cardiovascular disease in 2014.
Inflammation	A process carried out by the body to defend or protect itself, for example after an injury. It is often characterised by redness, heat, swelling and pain.
Ischaemia	Reduced blood flow to a tissue or part of the body, typically resulting in reduced oxygen levels in that tissue or area of the body.
L	
Linkage study	A genetic study that follows a single family, looking at diseases as they develop in that family.
Low density lipoprotein (LDL)	A protein-fat particle found in the plasma that carries cholesterol derived from the liver, in the blood, to the body's tissues. High levels of LDL are associated with an increased risk of cardiovascular disease.
Lymph node	An organ containing specialised white blood cells that filter the lymph (fluid that drains from the body's tissues).

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Lymph	The clear fluid that drains from the body's tissues, in lymphatic vessels, to re-join the blood circulation near the heart.
Lymphatic vessels	The tubes or pipes that carry lymph.
Lysosomes	Small acidic structures within most cell types that break down and dispose of cellular waste.
M	
Macrophages	A type of white blood cell that sits in the tissues rather than the blood, and has a role in clearing up cell debris and invading bacteria.
Modifiable	Something that can be changed e.g. Modifiable risk factors can be changed through lifestyle choices.
Monocytes	A type of white blood cell with a role in clearing up cell debris. In the blood these cells are quiescent / peaceful, but they leave the blood and enter tissues where they become macrophages (more aggressive clear-up cells).
Morbidity	Living with a condition or disease.
Mortality	Dying of a condition or disease.
Myocardial infarction	A heart attack. Chest pain caused by a reduced blood flow (ischaemia) and therefore lack of oxygen to the heart due to a blockage of a coronary artery by a thrombus. This may lead to irreparable damage to heart tissue which can be fatal.
N	
Necrotic core	An area of a tissue where the cells have died in an unorganised way, triggering inflammation.
Non-modifiable	Something that cannot be changed e.g. Non-modifiable risk factors such as age cannot be changed.
O	

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Obesity	Abnormal or excessive fat accumulation that presents a risk to health.
Oedema	Swelling due to accumulation of fluid.
Oxygen	An essential substance for each cell in the body to produce energy to function. Oxygen breaks down sugar by the action of specialised proteins (enzymes) converting them to energy with the by-products of carbon dioxide and water.
Oxygenated	Containing oxygen.
P	
Papillary muscle	A small muscle inside the heart that tenses the chordae tendinae that hold the atrioventricular heart valves closed.
Peripheral arterial disease	A narrowing of the arteries that supply the legs.
Plasma	The straw coloured liquid part of blood that contains several substances such as salts, sugars and proteins.
Platelet	The smallest of the blood cells with a role in preventing blood loss after injury and in wound healing. When activated (i.e. following damage to a blood vessel) platelets bind together to form a thrombus.
Polymerisation	The linking together of individual chemicals into a polymer or chain e.g. Fibrinogen becomes polymerised to make chains of fibrin that turns liquid blood to jelly.
Prevalence	A measure of the number of cases of a disease in the population at any given time i.e. The percentage of people who have cardiovascular disease in 2014.
Private genes	Specific variations of genes that occur in individual families.
Prognosis	The likely outcome or outlook.

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Prolapse	The bulging out of a structure e.g. A prolapsed heart valve no longer forms a tight seal but bulges under the pressure of the heart contracting.
Prophylactic	Preventative.
Protease	An enzyme that breaks down proteins.
Pulmonary circulation	The network of blood vessels in the lungs that enables the blood to collect oxygen from the air in the lungs, and to off-load carbon dioxide.
Q	
QRISK Cardiovascular Disease Risk Calculator	One such computer programme that can be used to calculate a person's risk of developing cardiovascular disease over the next 10 years.
R	
Rare genes	Specific variations of genes that occur in 1:400 to 1:1,000,000 people.
Red blood cell	A type of blood cell with a role in transporting oxygen and carbon dioxide. It is coloured red by haemoglobin, the protein that carries oxygen.
Replicate	A repeat e.g. The experiment had 3 replicates.
Repolarisation	Referring to electrical conduction of nerve impulses, where the inside of the cell returns to a negative value after depolarisation.
Risk factors	Things that are associated with an increased risk of a condition or event occurring.
S	
Saturated fats / fatty acids	Fats that have no carbon-carbon double bonds. Saturated fats tend to be solid at room temperature.

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Sedentary behaviour	Sustained bouts of sitting or lying down.
Septum	The wall that divides the left and right sides of the heart.
Sinoatrial node	A group of specialised heart cells in the right atrium that initiates the wave of nervous impulse that triggers the heart to contract. It is also known as the pacemaker.
Smooth muscle cells	A type of cell that can contract, but without any conscious input of thought e.g. In the lining of the gut and some blood vessels
Sphingomyelinase	An enzyme that causes LDL to aggregate (or clump together).
Sphygmomanometer	A device used to measure blood pressure.
Statins	A type of drug or medication used to lower blood cholesterol levels.
Stenosis	The narrowing of an opening e.g. A stenotic heart valve has become narrowed.
Stent	A short hollow tube inserted into a narrowed blood vessel to hold it open.
Stethoscope	A device used to listen to internal sounds of the body.
Stratify	Group the data according to criteria such as age or gender.
Stroke volume	The volume of blood pumped per contraction of the heart. $\text{Stroke volume} = \text{cardiac output} / \text{heart rate}$.
Stroke	A reduced blood flow (ischaemia), and therefore lack of oxygen, to the brain caused by either a blockage of the blood vessels that supply the brain (by a thrombus), or a bleed (haemorrhage) of these blood vessels.
Systemic circulation	The network of blood vessels supplying all the body except the lungs.

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Systole	The phase of the cardiac cycle where the heart muscle contracts enabling the heart to pump blood around the body. Systolic pressure is the pressure exerted by the blood on the arteries as the heart contracts. A normal value for adults is about 120mmHg.
T	
Tachycardia / tachyarrhythmia	A fast heartbeat.
Thrombin	An enzyme involved in both coagulation and platelet activation making it a strong activator of blood clotting. It exists in the body in an inactive form, and is activated as a result of the coagulation cascade.
Thrombosis	The pathological process of blood clot formation. The formation of blood clots at an inappropriate time or place, usually within a blood vessel i.e. In the absence of an external injury.
Thrombotic stroke	A type of stroke (lack of blood and oxygen to the brain) caused by a blockage of the blood vessels that supply the brain by a thrombus (clot).
Thrombus	A blood clot that is formed to prevent the loss of blood following injury.
Trans-fatty acids	An unnatural form of unsaturated fat that can be generated during the process of hydrogenation (conversion of unsaturated fats to saturated fats).
Tunica externa / tunica adventitia	<ul style="list-style-type: none">• The outer layer of a blood vessel, made of connective tissue.• Tunica intima• The inner layer of a blood vessel, made of endothelial cells and a layer of connective tissue (the sub-endothelial matrix).

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Tunica media	The middle layer of a blood vessel, made of smooth muscle cells and connective tissue.
Tunica	A layer or coat.
U	
Unsaturated fats / fatty acids	Fats that have carbon-carbon double bonds. Unsaturated fats tend to be liquid at room temperature. Mono-unsaturated fats have 1 double bond. Polyunsaturated fats have two or more double bonds.
V	
Valvular disease	Disease of any of the four heart valves. Can be either stenosis (narrowing) or regurgitant/prolapsed (leaky).
Vein	A blood vessel that returns blood from the body's tissues towards the heart, using valves to prevent backflow.