



These are the key terms from Chapter 1. Try cutting them out and then matching the key terms with their definitions, or asking friends and family to test you. They could give you the key term and ask you to provide the definition, or give you the definition and ask you to provide the key term.

Aerobic work	Working at a moderate intensity so that the body has time to use oxygen for energy production and can work for a continuous period of time. For example, long-distance events, for the duration of a match.
Agonist	The muscle within the pair that, at a given time, is contracting to pull on the bone and produce movement.
Anaerobic work	Working at a high intensity without oxygen for energy production. The work period will be short in duration, because the energy is limited. For example, sprinting up the wing in a football match.
Antagonist	The muscle within the pair that, at a given time, is relaxing to allow movement to occur.
Antagonistic muscle pair	A pair of muscles that work together to produce movement. As one muscle contracts (agonist), the other relaxes (antagonist). For example, the biceps and triceps. The triceps relaxes to allow the biceps to contract to flex the arm at the elbow. Roles are reversed to extend the arm at the elbow.
Aorta	The artery that carries blood from the heart to the rest of the body.
Arteries	Blood vessels that carry oxygenated blood from the heart to muscles and organs.
Atria	This is the plural for “atrium”. There are two atria in the heart. These are the upper chambers of the heart where blood enters.

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Bicuspid valve	A one-way gate that separates the left atrium from the left ventricle.
Capillaries	Blood vessels that wrap around muscles and organs so that gaseous exchange can take place.
Carbohydrate	Fuel for aerobic and anaerobic activity. Carbohydrate sources include rice, pasta and bread.
Cardiac equation	$\text{stroke volume} \times \text{heart rate} = \text{cardiac output}$ ($\text{SV} \times \text{HR} = \text{Q}$)
Cardiac muscle	The muscle of the heart, which pumps blood around the body.
Cardiac output (Q)	The volume of blood pumped out of the heart per minute, measured in litres per minute (l/min).
Cardiovascular system	The heart, blood vessels and blood.
Classifications of bone	The bone classification tells you a lot about its structure. A bone's classification will also link closely to its major functions.
Classifications of joints	There are four main classifications of joint: pivot joints, hinge joints, ball and socket joints and condyloid joints. Each type of joint has a specific range of movement.
Contraction	A muscle contracts when it is activated and tension is created. Muscles shorten and pull when they contract; they don't push.
Deoxygenated blood	Blood containing a low concentration of oxygen.

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Diffusion	The term used to describe how molecules move from an area of higher concentration to an area of lower concentration in an attempt to reach a balance.
Duration	How long something lasts.
Energy	The capacity to do work.
Exhale	We exhale air when we breathe out. The process of exhaling is called "exhalation".
Fat	Fuel for aerobic activity. Sources of fat include butter and oil.
Fatty acids	Fats are converted into fatty acids, which are used as fuel in energy production.
Frequency (f)	The number of breaths taken per minute, measured in breaths. It is also referred to as your "rate of breathing".
Functions of the cardiovascular system	The three functions of the cardiovascular system are transport, clotting and temperature regulation.
Functions of the skeleton	The skeleton performs five important functions. These are: protection of vital organs, muscle attachment, joints for movement, blood cell production, and mineral storage.
Gaseous exchange	Once the alveoli in the lungs have filled with air, gaseous exchange takes place. Oxygen moves from the air in the alveoli into the blood in the capillaries, while carbon dioxide moves from the blood in the capillaries into the air in the alveoli.
Glucose	Carbohydrates are converted into glucose, which is used as a fuel in energy production.

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Heart rate (HR)	The number of heart beats per minute, measured in beats per minute (bpm).
Inhale	We inhale air when we breathe in. The process of inhaling is called "inhalation".
Intensity	How relatively powerful something is.
Involuntary muscle	The muscle involved in digestion and vascular shunting.
Lactate accumulation	The name given to the process of lactic acid accumulating within the blood and muscles due to increased work intensity. For example, when moving from aerobic to anaerobic exercise.
Lactic acid	A by-product of energy production, which is formed when the body is exercising anaerobically at high intensity. A build up of lactic acid results in muscle fatigue.
Ligament	Connective tissue that attaches bone to bone at joints. Its role is to prevent dislocation.
Lumen	The internal diameter of a blood vessel.
Minute ventilation	The amount of air inhaled or exhaled per minute, measured in litres (l).
Movement types	Names used to identify directions of movement at joints. These include flexion, extension, adduction, abduction, rotation, circumduction, plantar-flexion and dorsi-flexion.
Muscle fatigue	A reduction in a muscle's ability to produce force.

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Muscle fibre types	Every voluntary muscle in the body contains thousands of muscle fibres. The different fibre types are type I, type IIa and type IIx.
Musculo-skeletal system	The name given to the combined body system that involves your muscles and your skeleton.
Oxygenated blood	Blood containing a high concentration of oxygen.
Plasma	The liquid element of blood that allows it to flow.
Platelets	These clot blood at the site of a wound.
Pulmonary artery	The artery that carries deoxygenated blood from the heart to the lungs.
Pulmonary vein	The vein that carries oxygenated blood from the lungs to the heart.
Quantitative data	Data that focuses on measuring things; it involves numbers.
Range of movement	Different joints allow different movements to take place. Joints that can perform many different types of movements have a large range of movement.
Red blood cells	These cells contain haemoglobin, which carries oxygen.
Respiratory equation	$\text{tidal volume} \times \text{frequency} = \text{minute ventilation (TV} \times \text{f} = \text{VE)}.$

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Semi-lunar valves	One-way gates at the entrance to the aorta and pulmonary artery, which prevent the backflow of the blood into the heart.
Stroke Volume (SV)	The amount of blood pumped out of the heart per beat, measured in millilitres per heart beat (ml/beat).
Tendon	Connective tissue that attaches muscle to bone. Its role is to transfer the effort created by a contracting muscle to the bone, resulting in the movement of that bone.
Tidal volume (TV)	The amount of air inhaled or exhaled per breath, measured in millilitres (ml). It is also referred to as "depth of breathing".
Tricuspid valve	A one-way gate that separates the right atrium from the right ventricle.
Type I muscle fibres	These are also known as slow twitch muscle fibres. Type I muscle fibres are suited to low intensity aerobic work such as marathon running because they can be used for a long time without fatiguing.
Type IIa muscle fibres	These are fast twitch fibres. They are suited to lengthy anaerobic work, such as an 800 m race, and can be improved through endurance training to increase their resistance to fatigue.
Type IIx muscle fibres	These are fast twitch muscle fibres. They are used in anaerobic work and can generate much greater force than the other muscle fibre types, but they fatigue quickly. They are beneficial to 100 m sprinters. In the past, this type of muscle fibre has been referred to as "type IIb".
Vascular shunting	A process that increases blood flow to active areas during exercise by diverting blood away from inactive areas. This is achieved by vasoconstriction and vasodilation.
Vasoconstriction	The narrowing of the internal diameter (lumen) of a blood vessel to decrease blood flow.
Vasodilation	The widening of the internal diameter (lumen) of a blood vessel to increase blood flow.

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Veins	Blood vessels that carry deoxygenated blood from muscles and organs to the heart.
Vena cava	The large vein entering the right atrium of the heart that carries deoxygenated blood back from the body to the heart. There is an inferior vena cava and a superior vena cava.
Ventricles	There are two ventricles in the heart. These are the lower chambers of the heart from where blood exits.
Vital capacity	The maximum amount of air exhaled following a maximum inhalation.
Voluntary muscle	Muscle involved in skeletal movement.
White blood cells	These blood cells fight infections and diseases.