Transport in mammals

A-Level Biology · Vocabulary in context

Word	Example
blood vessel /blʌd ˈvesl/	An artery, a vein and a capillary are each a **blood vessel**.
heart /hɑːt/	Your **heart** beats about 70 times a minute.
double circulation /ˈdʌbl ˌsɜːkjʊˈleɪʃn/	Humans have a **double circulation**.
circulatory system /ˌsɜːkjʊˈleɪtəri ˈsɪstəm/	The **circulatory system** carries blood around the body.
pulmonary circulation /ˈpʌlmənəri ˌsɜːkjʊˈleɪʃn/	In **pulmonary circulation**, blood goes from the heart to the lungs and back.
systemic circulation /sɪˈstemɪk ˌsɜːkjʊˈleɪʃn/	In **systemic circulation**, blood goes from the heart to the rest of the body and back.
artery /ˈɑːtəri/	An **artery** carries blood away from the heart.
arteriole /ɑːˈtɪəriəʊl/	An **arteriole** is a small artery that controls how much blood reaches the tissues.
capillary /kəˈpɪləri/	A **capillary** has walls only one cell thick, so things pass through easily.
venule /ˈvenjuːl/	A **venule** is a small vein that collects blood from the capillaries.
vein /veɪn/	A **vein** carries blood back to the heart.

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pulmonary artery /ˈpʌlmənəri ˈɑːtəri/	The **pulmonary artery** carries blood to the lungs.
oxygen /ˈɒksɪdʒn/	Your cells need **oxygen** to release energy.
pulmonary vein /ˈpʌlmənəri veɪn/	The **pulmonary vein** brings blood back from the lungs.
aorta /eɪˈɔːtə/	The **aorta** is the largest artery.
vena cava /ˈviːnə ˈkɑːvə/	The **vena cava** brings blood back from the body.
muscle /ˈmʌsl/	Your heart is made of **muscle**.
elastic /ɪˈlæstɪk/	A rubber band is **elastic**: it goes back to its shape.
lumen /ˈluːmen/	Blood flows through the **lumen** of the vessel.
recoil /rɪˈkɔɪl/	The stretchy artery wall **recoils** after each heartbeat and keeps the blood moving.
valve /vælv/	A **valve** in the vein stops blood flowing backwards.
endothelium /ˌendəʊˈθiːliəm/	The **endothelium** is the thin, smooth layer of cells on the inside of every blood vessel.
collagen /ˈkɒlədʒn/	**Collagen** is a strong protein in skin, bone and tendons.
red blood cell /red blʌd sel/	A **red blood cell** has no nucleus, so it has more room for haemoglobin.
monocyte /ˈmɒnəʊsaɪt/	A **monocyte** leaves the blood and becomes a macrophage.

Word	Example
neutrophil /'nju:trəfɪl/	A **neutrophil** is a white blood cell that eats bacteria.
lymphocyte /'lɪmfəsaɪt/	A **lymphocyte** is a white blood cell that makes antibodies or kills infected cells.
lymph	Extra tissue fluid drains into tubes and becomes **lymph**.
solvent /'sɒlvənt/	Water is the **solvent** in salt water.
specific heat capacity /spə'sɪfɪk hi:t kə'pæsɪti/	Water has a high **specific heat capacity**, so it warms up slowly.
plasma /'plæzmə/	**Plasma** is the yellow liquid part of blood.
tissue fluid /'tɪʃu: 'flu:ɪd/	**Tissue fluid** is the liquid around the cells, formed from blood plasma.
hydrostatic pressure /ˌhaɪdrə'stætɪk 'preʃə/	High **hydrostatic pressure** in the phloem pushes the sap along.
oedema	**Oedema** is swelling caused by too much tissue fluid.
haemoglobin /ˌhi:mə'gləʊbɪn/	**Haemoglobin** in red blood cells carries oxygen.
oxygen dissociation curve /'ɒksɪdʒn dɪˌsəʊsɪ'eɪʃn kɜ:v/	The **oxygen dissociation curve** shows how much oxygen haemoglobin holds at each oxygen level.
saturation /ˌsætʃə'reɪʃn/	In the lungs, haemoglobin reaches about 98% **saturation** with oxygen. 98%
partial pressure /'pɑ:ʃl 'preʃə/	The **partial pressure** of oxygen in air is about 21 kPa. 21 kPa
carbon dioxide /'kɑ:bən daɪ'ɒksaɪd/	We breathe out **carbon dioxide**.

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Word	Example
Bohr shift /'bəʊə ʃɪft/	In the **Bohr shift**, more carbon dioxide makes haemoglobin let go of oxygen more easily.
enzyme /'enzaɪm/	The **enzyme** speeds up the reaction.
carbonic anhydrase /kɑ:'bɒnɪk 'ænhaɪdreɪz/	**Carbonic anhydrase** in red blood cells quickly turns carbon dioxide and water into carbonic acid.
hydrogencarbonate ion /'haɪdrəʊdʒenˌkɑ:bɒneɪt 'aɪɒn/	Most carbon dioxide travels in the blood as the **hydrogencarbonate ion**, HCO_3^-. HCO_3^-
chloride ion /'klɔ:raɪd 'aɪɒn/	A **chloride ion**, Cl^-, has a negative charge. Cl^-
chloride shift /'klɔ:raɪd ʃɪft/	In the **chloride shift**, chloride ions move into red blood cells as hydrogencarbonate ions move out.
haemoglobinic acid /ˌhi:məˌgləʊ'bɪnɪk 'æsɪd/	When haemoglobin picks up hydrogen ions, it becomes **haemoglobinic acid**.
carbaminohaemoglobin /ˌkɑ:bəˌmɪnəʊˌhi:mə'gləʊbɪn/	Some carbon dioxide joins haemoglobin to form **carbaminohaemoglobin**.
atrium /'eɪtrɪəm/	Blood enters the heart through an **atrium**.
ventricle /'ventrɪkl/	The left **ventricle** pumps blood to the body.
cardiac muscle	The heart is made of **cardiac muscle**, which contracts without tiring.
coronary arteries /'kɒrənəri 'ɑ:təriz/	The **coronary arteries** supply the heart muscle with blood.

Word	Example
septum /ˈseptəm/	The **septum** is the wall between the left and right sides of the heart.
semilunar valve	A **semilunar valve** stops blood flowing back from the artery into the heart.
cardiac cycle /ˈkɑːdiæk ˈsaɪkl/	One **cardiac cycle** is one full heartbeat.
systole /ˈsɪstəʊl/	During **systole**, the heart muscle squeezes and pushes blood out.
diastole /ˈdaɪəstəʊl/	During **diastole**, the heart relaxes and fills with blood.
AV valve	Each **AV valve** stops blood flowing back from a ventricle into an atrium.
sinoatrial node /sɪˈnəʊtrɪəl nəʊd/	The **sinoatrial node** is the heart's pacemaker: it starts each beat.
atrioventricular node /ˌeɪtrɪˌəʊvənˈtrɪkjʊlə nəʊd/	The **atrioventricular node** holds the signal back for a moment before passing it on.
Purkyne tissue /ˈpɜːkaɪn ˈtɪʃuː/	**Purkyne tissue** carries the signal quickly down through the walls of the ventricles.
myogenic /ˌmaɪəʊˈdʒenɪk/	Heart muscle is **myogenic**: it beats by itself without a signal from a nerve.

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