

Circulatory systems Define the circulatory system.	The heart Name the structures of the mammalian heart.
The heart Which vessels carry blood away from, and to, the heart?	The heart Supplement What happens to the valves when the ventricles contract?
The heart Three ways to monitor the heart?	The heart How do you calculate heart rate from a 15-second pulse count?
The heart Effect of exercise on heart rate?	The heart Supplement Why does heart rate rise during exercise?

Muscular wall, septum, left and right ventricles, left and right atria, one-way valves, coronary arteries.

A system of blood vessels with a pump and valves to ensure one-way flow of blood.

Atrioventricular valves close and semilunar valves open, so blood leaves through the arteries.

Arteries carry blood away from the heart; veins return it to the heart.

Multiply the number of beats by 4 to give beats per minute.

ECG, pulse rate and listening to the sounds of the valves closing.

Muscles respire faster, so more oxygen and glucose are delivered and carbon dioxide is removed faster.

Heart rate increases during exercise and returns to the resting rate during recovery.

The heart **Supplement**

What is coronary heart disease?

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Risk factors for CHD?

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How can diet and exercise reduce the risk of CHD?

Blood vessels

Artery: wall, lumen, valves?

Blood vessels

Vein: wall, lumen, valves?

Blood vessels **Supplement**

Why are artery walls thick?

Blood

List the components of blood.

Blood

How do red and white blood cells differ in appearance?

Diet, lack of exercise, stress, smoking, genetic predisposition, age and sex.

Blockage of the coronary arteries by fatty deposits, reducing blood flow to the heart muscle.

Thick wall, narrow lumen, no valves.

Less saturated fat reduces fatty deposits; exercise strengthens the heart and helps control body mass.

Blood is at high pressure; thick muscular, elastic walls withstand it.

Thin wall, wide lumen, valves present.

Red cells have no nucleus and are pale in the middle; white cells have a stained nucleus.

Red blood cells, white blood cells, platelets and plasma.

Blood

Function of red blood cells?

Blood

Functions of white blood cells and plasma?

Blood **Supplement**

Roles of blood clotting?

White cells: phagocytosis and antibody production. Plasma: transports cells, ions, nutrients, urea, hormones and carbon dioxide.

Transport oxygen; haemoglobin combines with the oxygen.

Prevents blood loss and the entry of pathogens.