Cardiovascular System

-The functions of the cardiovascular system (3)
-Structure of the cardiovascular system
-Structure of arteries, capillaries, and veins
-Vascular shunting
-Components of blood (RBC, WBC, platelets, plasma)

	Arteries	Veins	Capillaries
Characteristics	Carry blood away from the heart. Carry oxygenated blood (apart from pulmonary artery). Thick walls, elastic, carry blood at high pressure.	Carry blood towards the heart. Carry deoxygenated blood (apart from the pulmonary vein). Thinner walls than arteries and less elastic, carry blood at a lower pressure.	1cell thick walls to allow for quick gaseous exchange. Low blood pressure in capillaries.
Importance in sport	Carry blood away from the heart to the working muscles that need oxygen.	Carry deoxygenated blood back to the heart for it to be pumped to the lungs and be re-oxygenated.	Allow for gaseous exchange – oxygenated blood delivered to the working muscles.

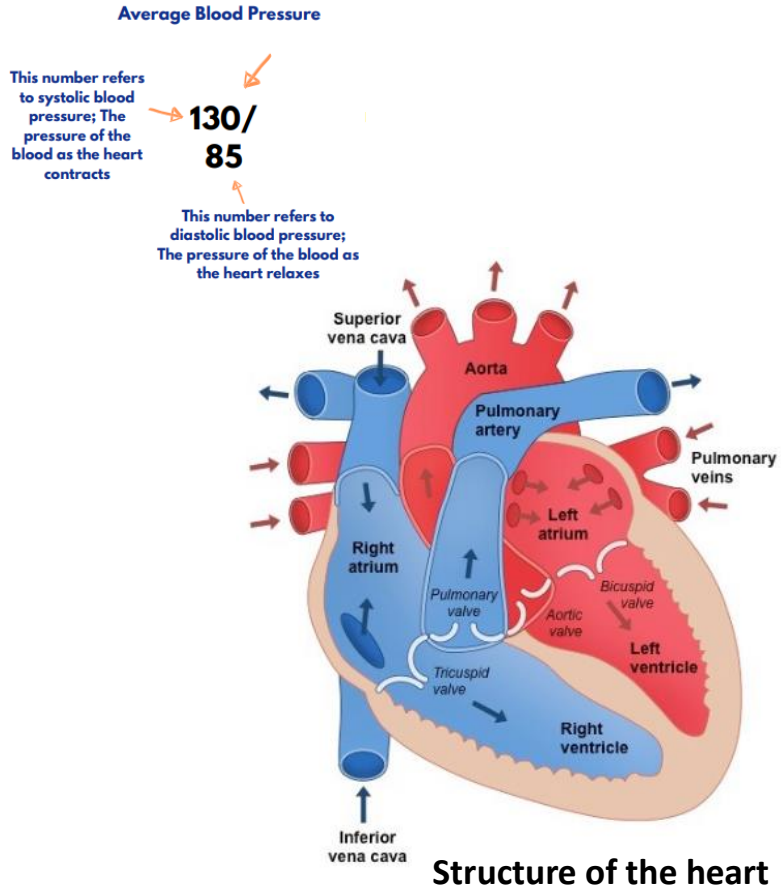
Functions of the Cardiovascular System

- Regulate temperature (vasodilation/vasoconstriction)
- Clot the blood (platelets)
- Transport of nutrients (oxygen, carbon dioxide, water)

Vasodilation: vein increases in size to allow for increased blood flow (increase in the size of the lumen)
Vasoconstriction: vein decreases in size to restrict blood flow (decrease in the size of the lumen)

Vascular Shunting: ***Redistribution of blood***
During exercise…
-Blood flow is increased to active areas (working muscles)
-Blood flow is decreased to inactive areas (digestive system)
-Vasodilation (increase in size of lumen) allows for increased blood flow to active areas.
-Vasoconstriction (decrease in size of lumen) allows for decreased blood flow to inactive areas.

Components of the blood:
White blood cells (WBC): Fight infection.
Red blood cells (RBC): Carry oxygen.
Platelets: Clot the blood.
Plasma: Helps transport nutrients, regulate temperature.



Structure of the heart

Pulmonary Circuit: Moves blood between heart and lungs.
Systemic Circuit: Moves blood between heart and rest of body.