

CIRCULATION

# THE CIRCULATORY SYSTEM

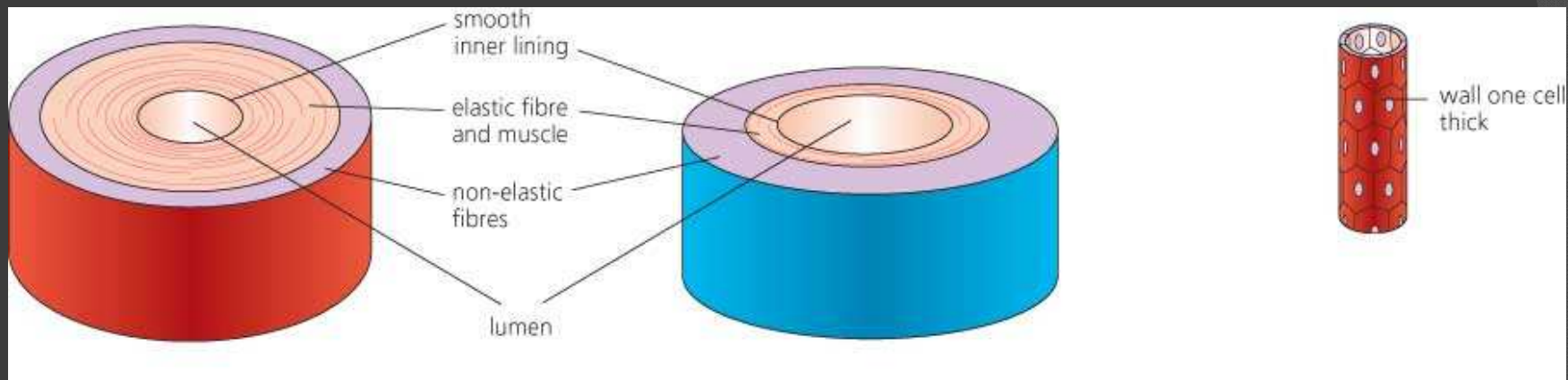
# Objectives

- Identify, label and explain the functions of different blood vessels
- Identify and explain the functions of cells, platelets and plasma
- Understand the main functions of blood

# Starter

- Discuss the graphs we have produced for the effects of exercise on the heart, and recovery time

# Arteries, Veins and Capillaries



# Arteries

- ⦿ Thick elastic walls to cope with the high pressure of the blood
- ⦿ Rich in O<sub>2</sub> and food
- ⦿ Arteries and arterioles can become larger – vasodilate
- ⦿ ... and smaller – vasoconstrict
- ⦿ Blood can be encouraged to enter some places and shut off from others
- ⦿ During exercise very little blood goes to the stomach but a lot goes to the working muscles – vascular shunt

# The Differences between Arteries and Veins

## VEINS

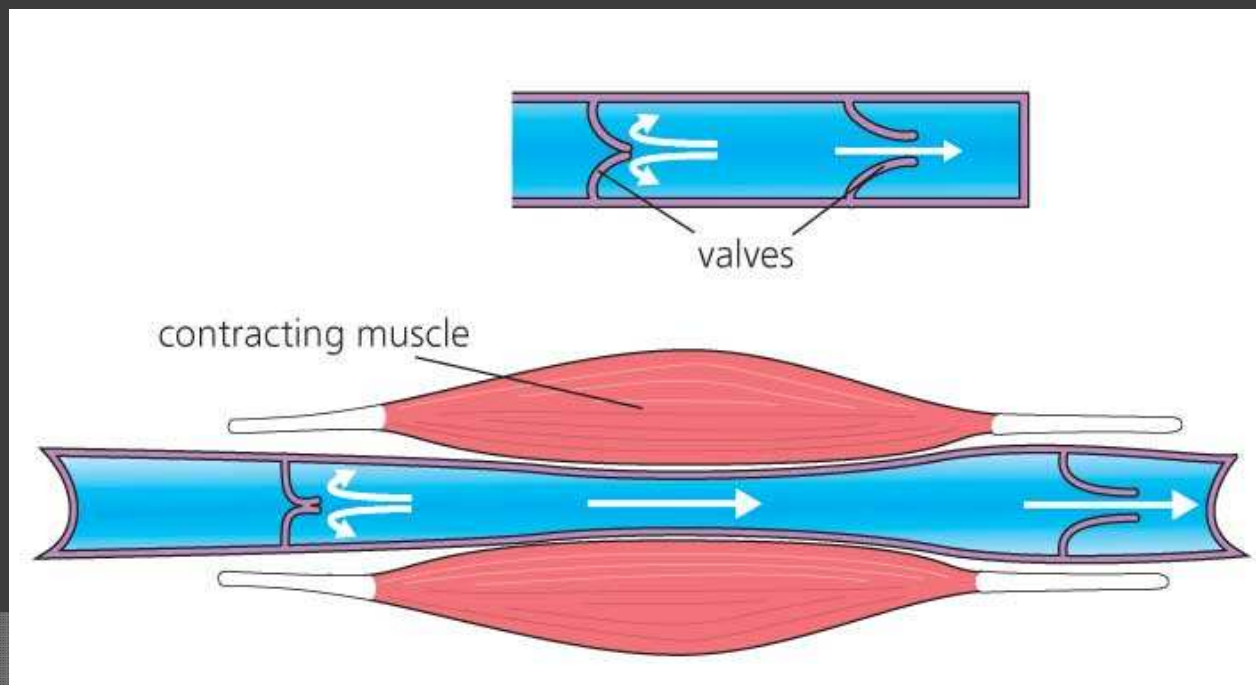
- Have Valves
- Lead to the heart
- Rarely pulsate
- Blood flows under low pressure
- Thin muscle and elastic tissue
- Mainly carry Deoxygenated blood

## ARTERIES

- Do not have valves
- Go away from the heart
- Pulsate
- Blood flows under high pressure
- Thick muscle and elastic tissue
- Mainly carry Oxygenated blood

# Veins

- Blood is flowing slowly when it reaches the veins
- Valves make sure that the blood does not flow backwards



# Capillaries

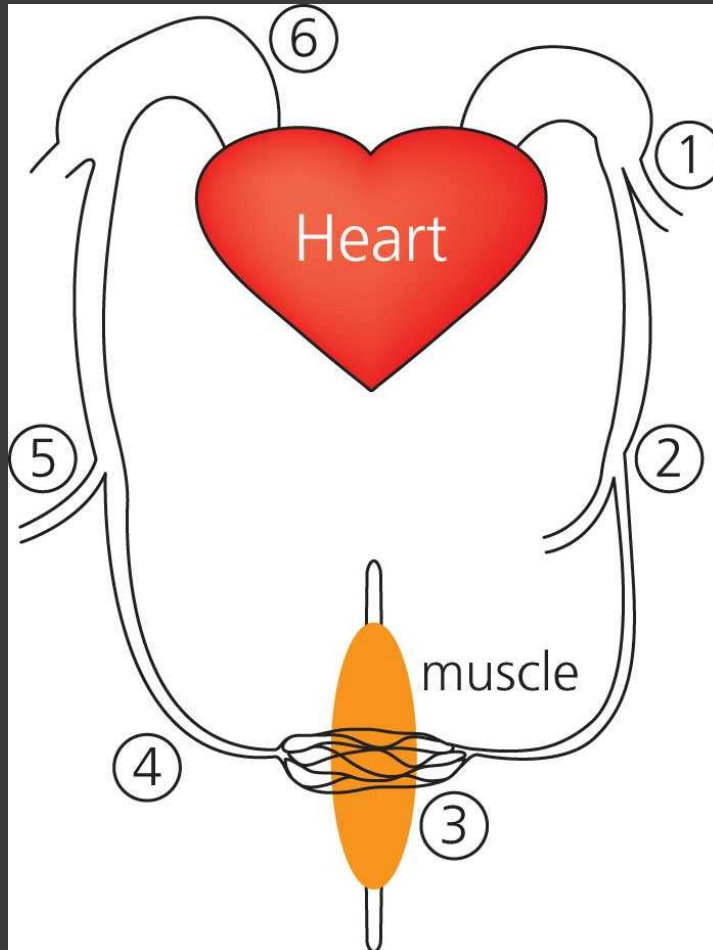
- Exchange between the blood and body tissues can only occur in the capillaries
- Food (e.g. glucose) from the digestive system or the liver is carried in the plasma
- Oxygen from the lungs is carried in the red blood cells
- Waste from the cells is carried in the plasma
- CO<sub>2</sub> from respiration is carried in the plasma



# Exchange in the capillaries

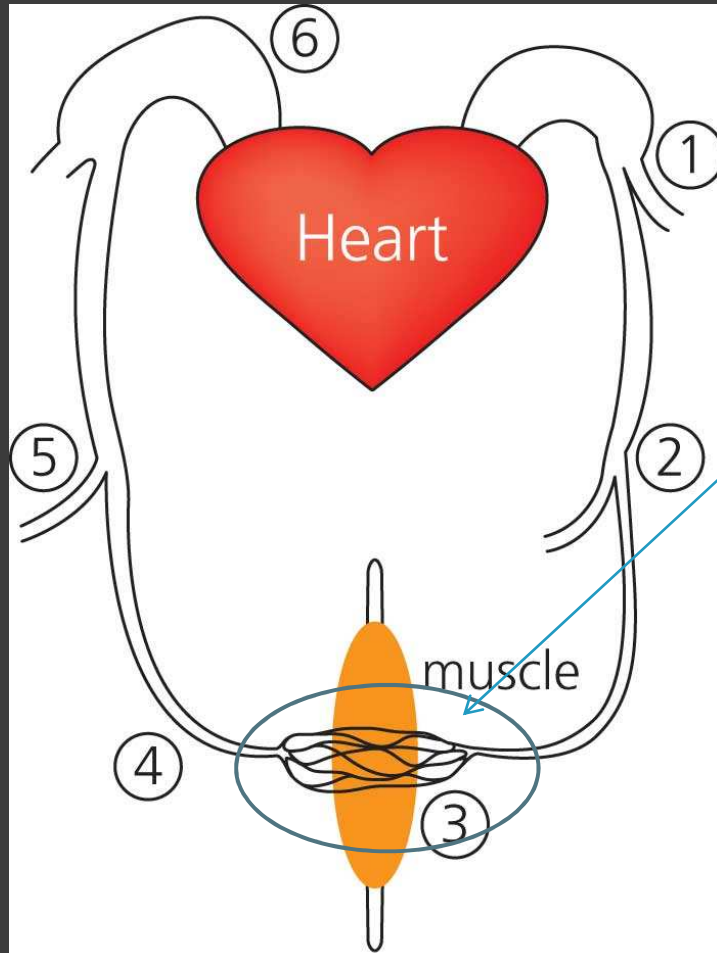
- Diagram to be handed out

# Blood Vessels



1. The biggest artery – aorta – divides into smaller arteries
2. Arteries divide into arterioles
3. Arterioles divide into tiny capillaries
4. Capillaries join together to form slightly larger venules (small veins)
5. Venules join to form veins
6. Largest vein enters the heart – vena cava

# Arteries, veins and capillaries



- Diagram to be handed out

# Tasks

- ⦿ Make notes on what happens when you get too hot and too cold (p61)
- ⦿ Answer questions 1 - 7