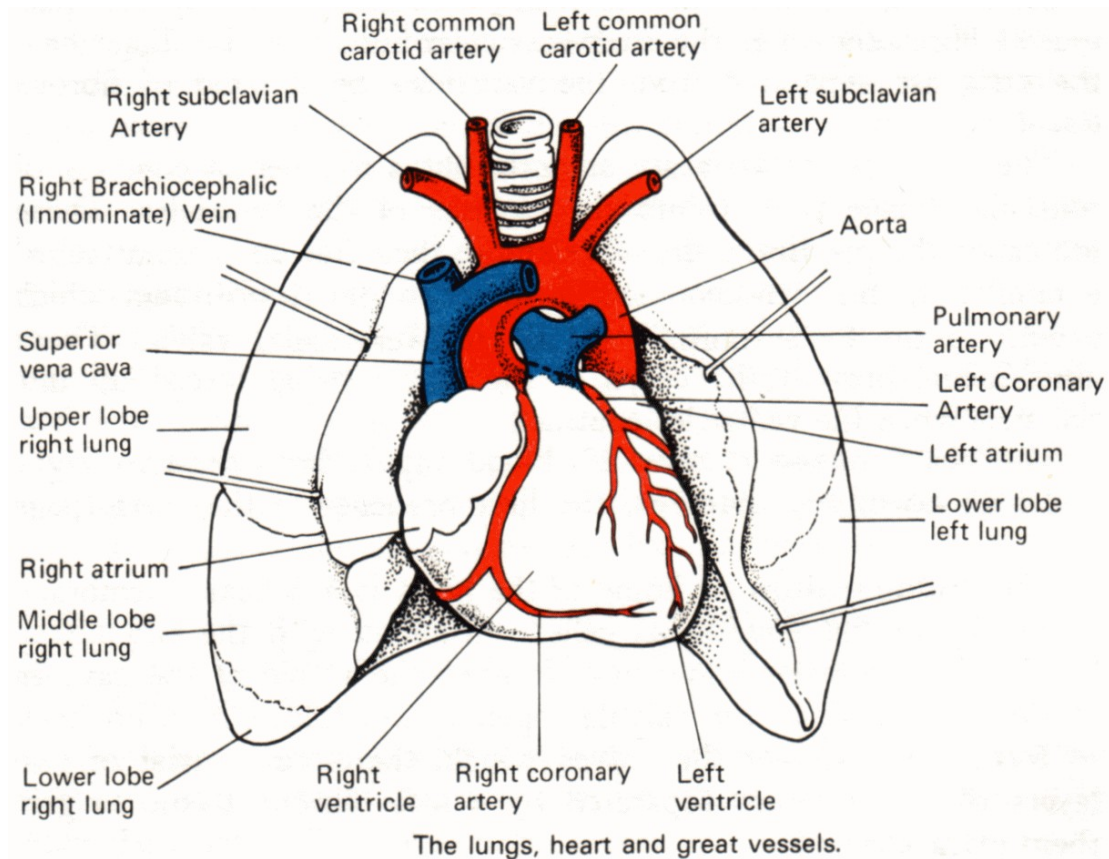


## HEART & LUNGS - CIRCULATION

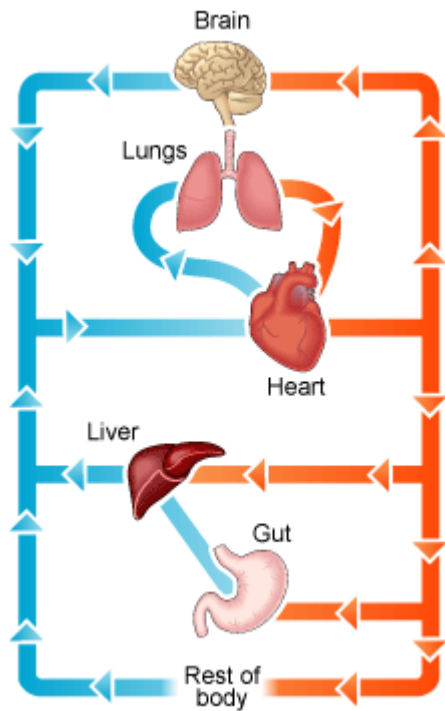


### DISSECTION

Flag label the major arteries and veins and parts of heart and lungs

The heart requires its own constant blood supply in order to keep beating and this is delivered through the coronary arteries. Genetic and lifestyle factors can lead to the coronary arteries becoming blocked, and an increased risk of heart disease.

## The circulatory system



The circulatory system

Heart disease

Page:

1. [1](#)
2. [2](#)
3. [3](#)
4. [4](#)
5. [5](#)
6. [6](#)
7. [7](#)

1. [Back](#)
2. [Next](#)

## Arteries and veins

The arteries carry blood from the heart, while veins return blood to it. With both, their structure is related to their function.

### Arteries

Blood in the arteries is under high pressure generated by the heart. The arteries have:

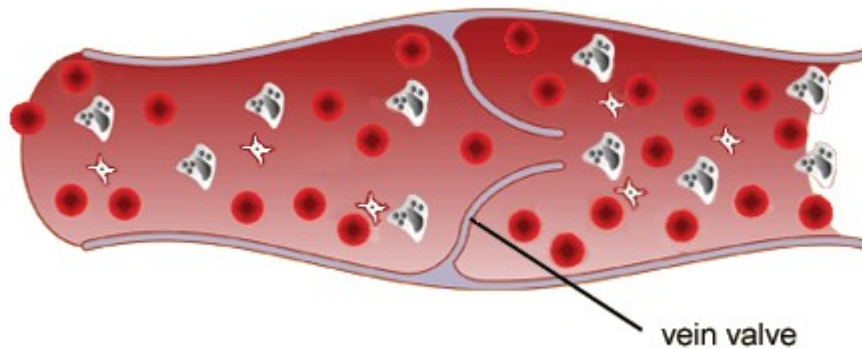
- thick outer walls
- thick layers of muscle and elastic fibres

# Veins

The blood in veins is under lower pressure than the blood in arteries. The veins have:

- thin walls
- thin layers of muscle and elastic fibres

Unlike arteries, veins have one-way valves in them to keep the blood moving in the correct direction.



Cross-section of a vein

# The heart

The heart is a muscular organ. It keeps beating at about 70 times per minute. You can see how it pumps the blood to the lungs and the rest of the body by studying this animation.

The muscle cells in the heart need a constant supply of oxygen and nutrients, and for their waste products to be removed. So the heart requires its own blood supply in order to keep beating.

Blood vessels called the **coronary arteries** supply blood to the heart muscles. If they become blocked, a **heart attack** can happen.

# Heart attacks

A heart attack can happen because:

1. Fatty deposits build up in the coronary arteries.
2. A blood clot can form on a fatty deposit.
3. The blood clot can block a coronary artery.
4. Some heart muscle cells do not get the oxygen and nutrients they need.
5. These cells start to die.

In the UK about 300,000 people have a heart attack every year.

## Causes of heart disease



Smoking can increase the risk of heart disease

Heart disease is not usually caused by micro-organisms. It is caused by:

- genetic factors, which show as a family history of heart disease
- lifestyle factors

Heart disease is more common in the UK than in non-industrialised countries, and many other industrialised nations. This is due to **lifestyle factors** including:

- smoking
- lack of regular exercise
- stress leading to a fast heart rate
- drinking a lot of alcohol
- poor diet

A lack of exercise and a diet that is high in salt and saturated fat cause people to:

- become overweight
- have high blood pressure
- have high levels of cholesterol in their blood

These factors contribute to an increased risk of heart disease.