

## Circulatory system- Blood vessels

Blood needs a good carrier to carry the blood around the body. These carriers are small tubes which is known as **blood vessels**

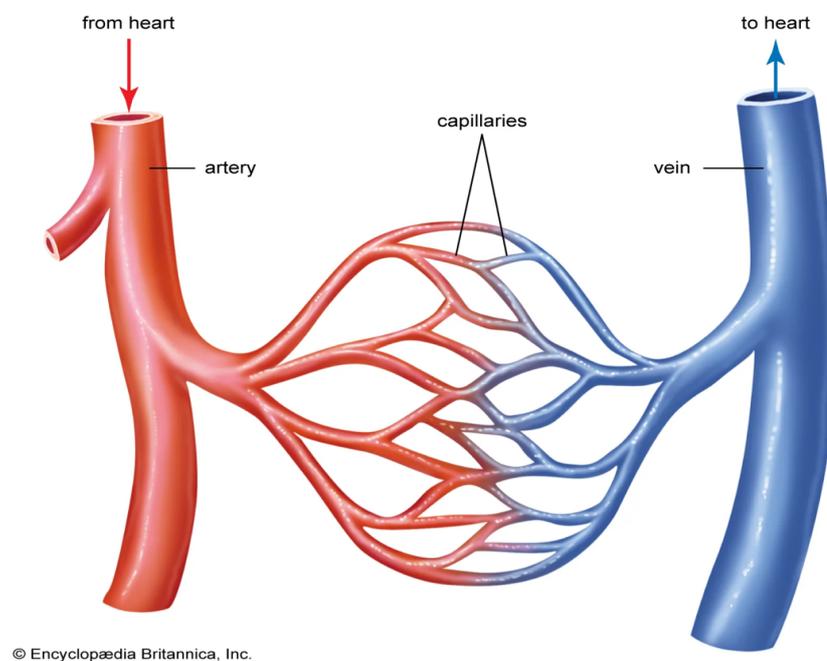
### Types of blood vessels

- The body contains three different types of blood vessels:

**1- Arteries:** transport blood away from the heart (usually at high pressure)

**2- Veins:** transport blood to the heart (usually at low pressure)

**3- Capillaries:** links arteries to veins within the tissues of the body



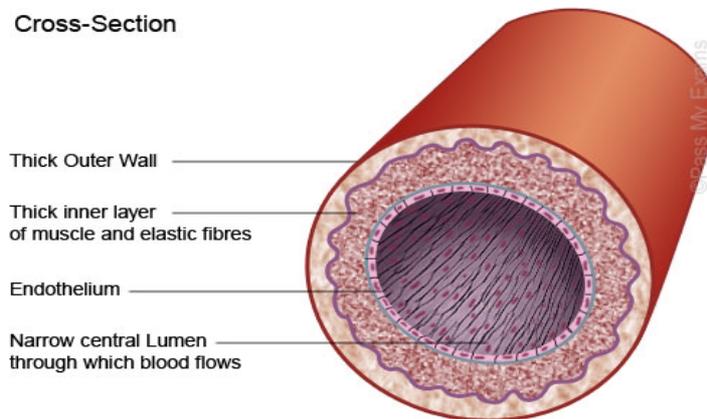
**1- Arteries :****➤ Structure of artery ( Single tube)**

a) These tubes contains thick layers of muscle to make them strong and elastic

b) there is the hole in the middle of artery called **Lumen that is small**

**➤ Function of artery:**

Heart pump the oxygenated blood with high pressure through arteries to body parts.

**2- Capillaries:****➤ Structure of capillaries:**

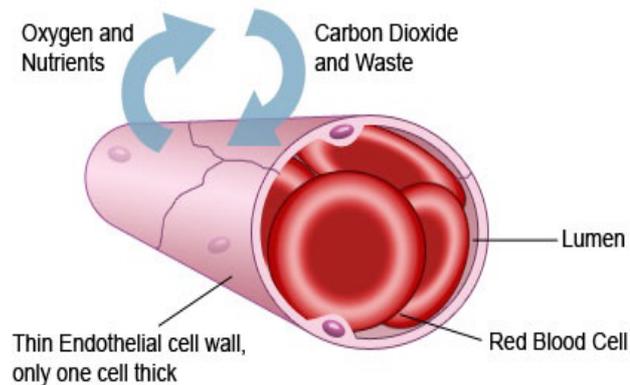
a) **Arteries** branch into capillaries

b) These tiny blood vessels have thin walls (permeable walls). Due to permeable walls substances easily diffuses in and out.

**➤ Function of capillaries:**

a) They supply Oxygen and nutrients from the blood into organs and tissues.

b) The capillaries also take waste products away from your tissues.



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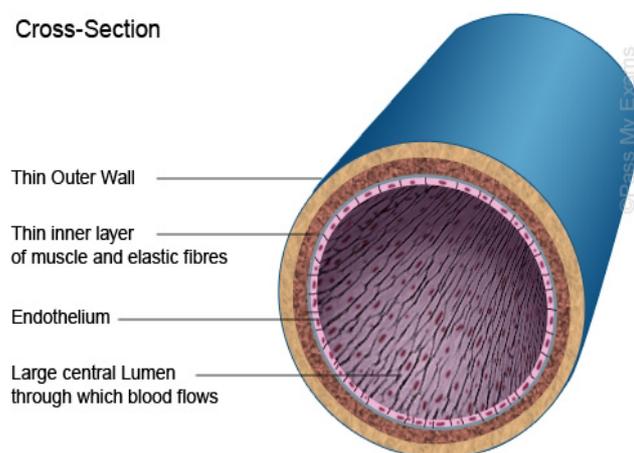
### 3-Veins:

► **Structure of veins:**

- capillaries joined up to form **Veins**
- The walls of veins are **thin** in comparison to arteries
- Veins have a **wide lumen**
- veins have **Valves** that prevent blood from flowing backwards keep blood flowing in **one** direction

► **Function of Veins:**

- These blood vessels carry blood **towards the heart** at low pressure
- Veins transport **deoxygenated** blood away from the body



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**Calculate the Rate of Blood flow****Formula:****Rate of blood flow= volume of blood / number of min**

**Q: 1464 ml of blood passed through an artery in 4.5 min  
calculate its rate of blood flow?**

**Solution:****Rate of blood flow= volume of blood / number of min**

$$= 1464 / 4.5 = \mathbf{325 \text{ ml/ min}}$$