



FACULTY OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

What is the function of the circulatory system?

- Use blood to carry nutrients and oxygen to all tissues in the body
- Use blood to remove carbon dioxide and waste products from tissues in the body

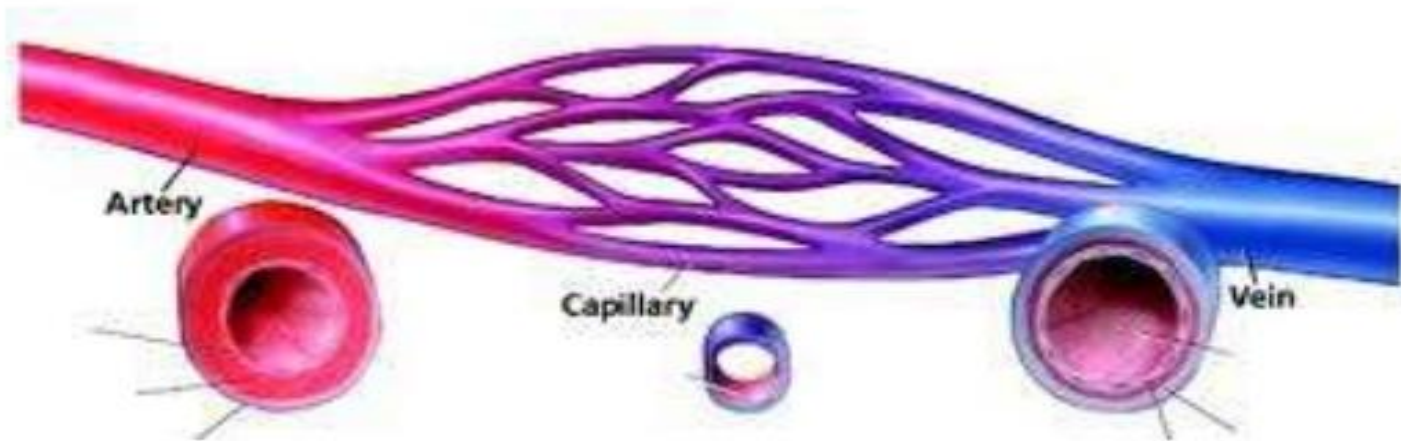


What is the path that blood follows?

1. Heart (pumps blood)
2. Arteries (carrying oxygen)
3. Capillaries (gives oxygen and nutrients to tissues, absorbs carbon dioxide and waste)
4. Veins (carrying carbon dioxide)
5. Heart
6. Lungs (O_2 diffused into blood, CO_2 diffuses out)
7. Heart, then arteries again (carrying oxygen)

What are veins?

- Blood vessels that carry blood TOWARDS the heart.
- Carry carbon dioxide (unless they are coming back from the lungs)



What are capillaries?

- Tiny networks of blood vessels, connecting arteries and veins
- Found in all tissues of the body
- Where gas exchange of O_2 and CO_2 happens
- So small that blood cells pass in single file



What diffuses in and out of capillaries in the tissues of the body?

- All over the body (arms, legs, etc.), there are capillaries. In these capillaries:
 - Oxygen (O_2) diffuses OUT from the blood into the tissue
 - Carbon dioxide (CO_2) diffuses IN to the blood from the tissue
 - Nutrients diffuse OUT from the blood into the tissue
 - Waste products diffuse IN to the blood from the tissue

What types of cells are found in the blood?

- Red blood cells carry oxygen. A protein called hemoglobin on the red blood cells carries the oxygen.
- White blood cells are involved in the immune system; they protect you from disease.

How does the circulatory system work together with the respiratory system?

- In the lungs, capillaries wrap around alveoli, so that oxygen can diffuse into the blood, and carbon dioxide can diffuse out of the blood.

How does the circulatory system work together with the digestive system?

- In the small intestines, capillaries are found inside the villi, so that nutrients can diffuse from the small intestines into the blood.

