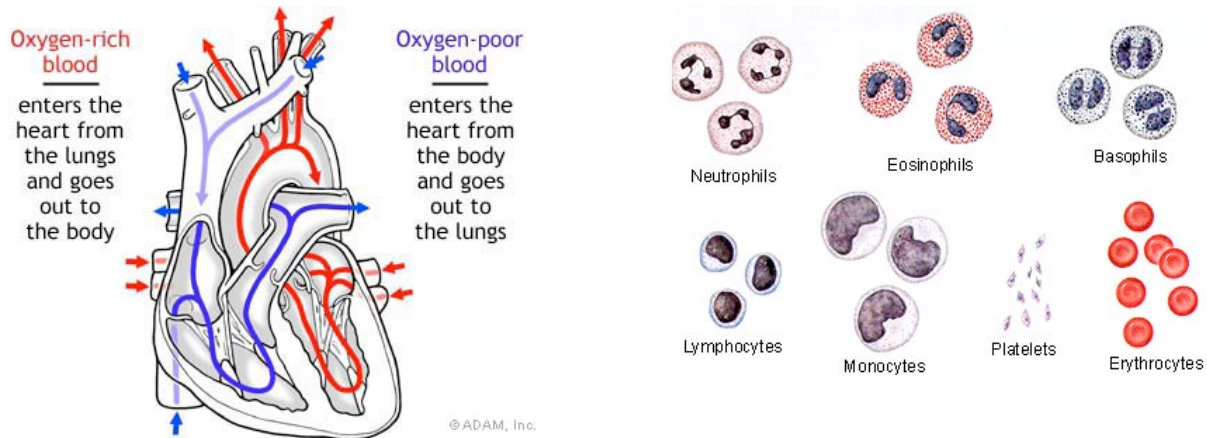


# HEART and (a little) BLOOD



Oxygen is vital to life as it provides fuel for all the body's functions. The heart's role is to pump oxygen-rich blood to every cell in the body. The blood vessels — a network of interconnecting arteries, arterioles, capillaries, venules, and veins — provide the pathway in which blood travels. Arteries are the passageways through which the blood is delivered, the largest of which is the aorta. The aorta branches off the heart and divides into many smaller arteries, which have muscular walls that adjust their diameter to increase or decrease blood flow to a particular body area. Capillaries are thin walled, highly branched vessels that feed the tissues and collect wastes to be carried back to the lungs, liver, or kidney for elimination. Capillaries empty into the venules, which in turn drain into the veins that lead back to the heart. Veins carry deoxygenated blood to the lungs to pick up more oxygen, and then back to the heart once again.

1. **Find a picture** of a heart with arrows showing blood flow, oxygenated and deoxygenated.
2. Why are the pulmonary arteries and veins unique?
3. Choose either coronary, systemic or pulmonary circulation and describe the path the blood takes. **Include a picture of the pathway you chose.**
4. Name the four coronary arteries that supply the heart tissue with blood. **Include a picture of the coronary arteries.**
5. Briefly explain how a heart attack could happen.
6. Briefly describe two ways doctors can cure a person who has experienced a heart attack. Give at least one specific example of how each is performed.
7. Explain why training for an endurance event can increase your cardiac output.
8. Briefly explain the make-up of blood.
9. Completely describe plasma, including percentage of blood volume and materials that may be found in it. **Include a picture of the components of blood.**
10. Why is saline used for treating dehydration rather than giving the person a glass of water?

Heart Pic: <http://health.nytimes.com/health/guides/specialtopic/physical-activity/exercise%27s-effects-on-the-heart.html>

Blood Cell Pic: <http://www.biosbcc.net/doohan/sample/htm/Blood%20cells.htm>

Blood Info: <http://www.ncbi.nlm.nih.gov/books/NBK22227/>

## Record Sheet

Names \_\_\_\_\_ and \_\_\_\_\_

1. Find a picture of a heart with arrows showing blood flow, oxygenated and deoxygenated. \_\_\_\_\_
2. Name the four coronary arteries that supply the heart tissue with blood.
3. Briefly explain how a heart attack could happen.
4. Explain why training for an endurance event can increase your chance of winning if you train at high altitudes.
5. Name and describe the three types of cells found in blood.
6. Briefly describe hemoglobin and how too much carbon monoxide can kill you.
7. Briefly name and describe a blood disorder.
8. Describe your blood if you are type O.
9. Describe your blood if you are type A.
10. Find a pie chart of the population and the amount of each blood type. \_\_\_\_\_

