

# **Essential Question:**

## **How do major organ systems work together in living organisms?**

Standards:

S7L2d. Explain that tissues, organs, and organ systems serve the needs cells have for oxygen, food, and waste removal.

S7L2e. Explain the purpose of the major organ systems in the human body (i.e., digestion, respiration, reproduction, circulation, excretion, movement, control and coordination, and for protection from disease).

# Activating Strategy:

Respiratory & Circulatory Activity – Have students record their at rest pulse. Then have students do jumping jacks beside their desk or outside for 2-3 minutes. After calling time have students record their pulse rate again. Ask the students to describe the activity and explain why they are breathing harder and their pulse rate is faster after the activity.



# Activating Strategy:

Look at the animated picture to the right.

What is the man doing?

What is coming out of his mouth? Why?

What is happening to his heart rate? Why?

What is the connection between his breathing harder and his heart rate increasing?



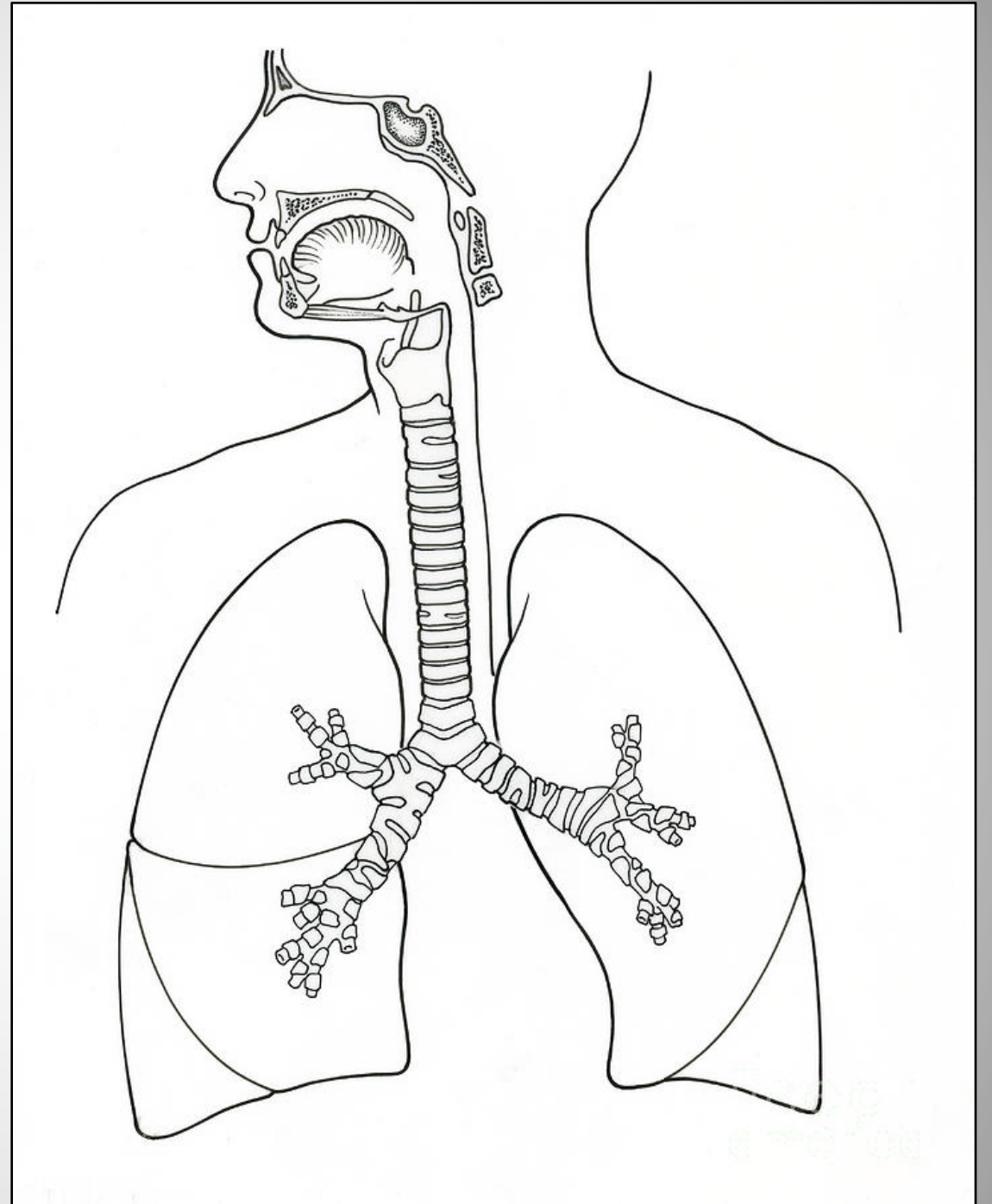
# Why do Professional Football players breath pure oxygen on the sideline?



# **Respiratory System**

# Respiratory System

The role of the Respiratory System is to take in oxygen and release carbon dioxide from the body.



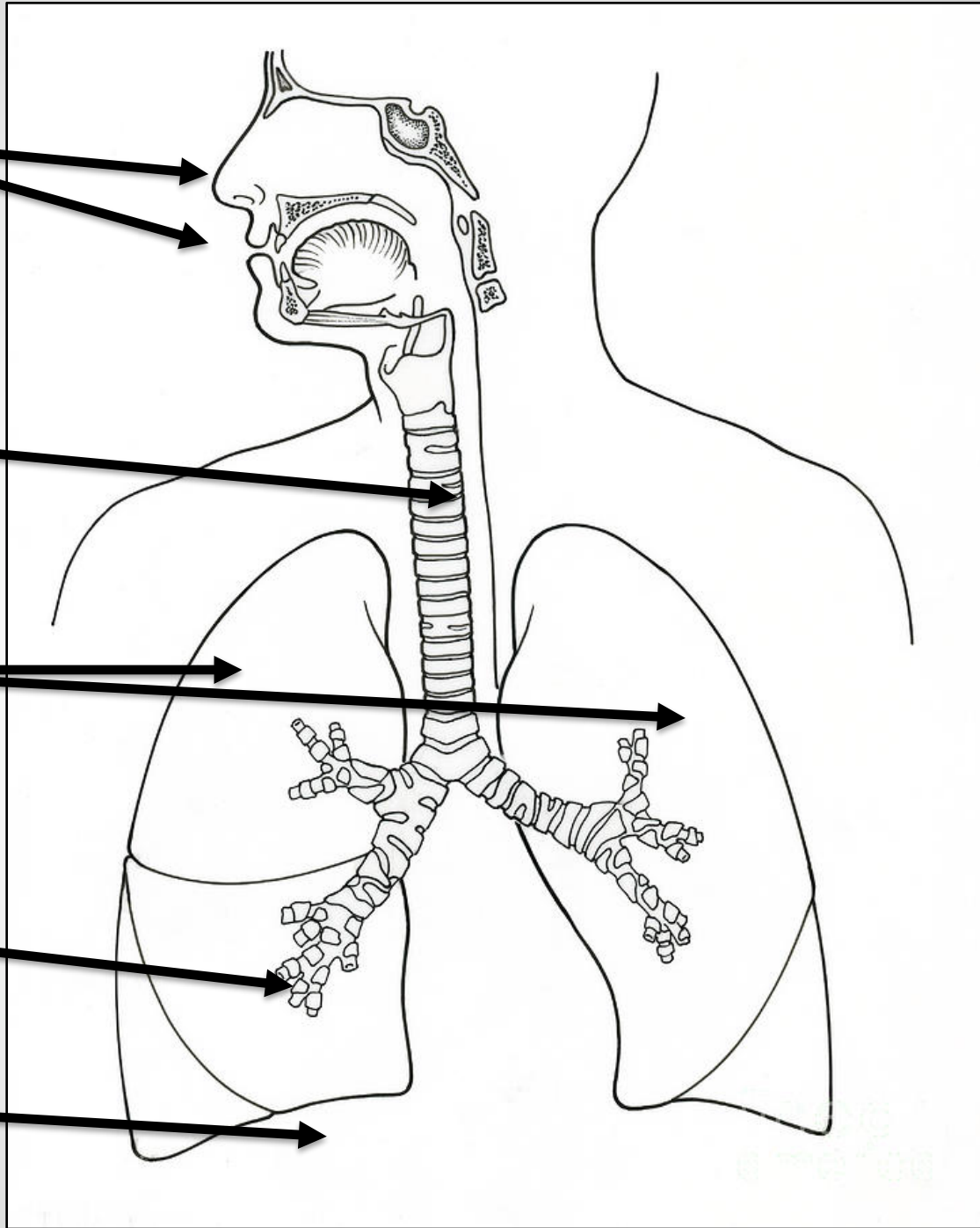
**Nose/Mouth**

**Trachea**

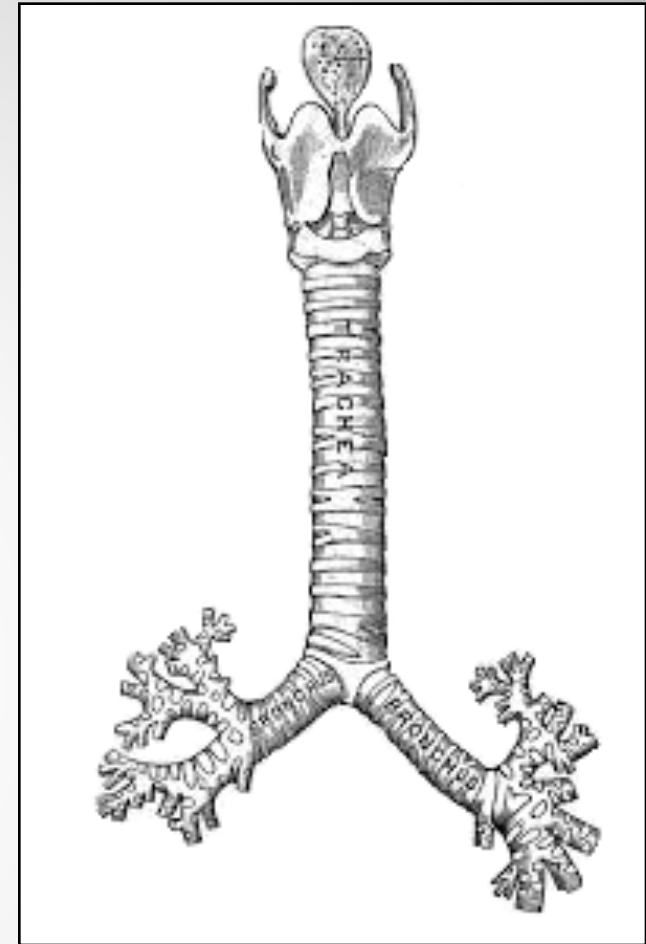
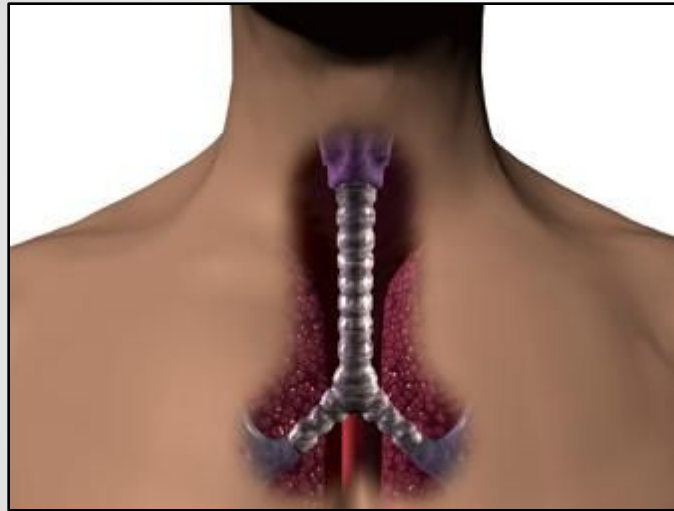
**Lungs**

**Alveoli**

**Diaphragm**



# Trachea

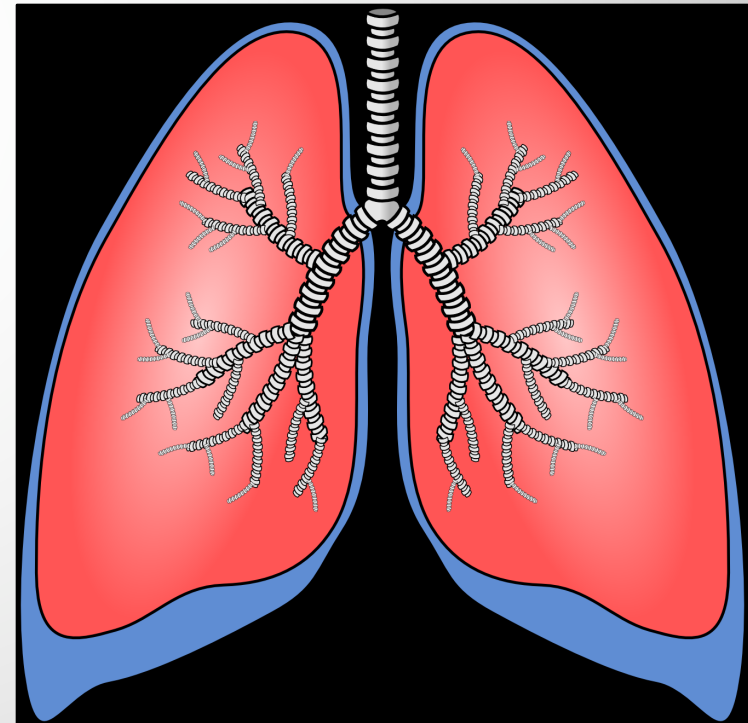


**connects the mouth and throat to the lungs (commonly known as the windpipe)**



# Lungs

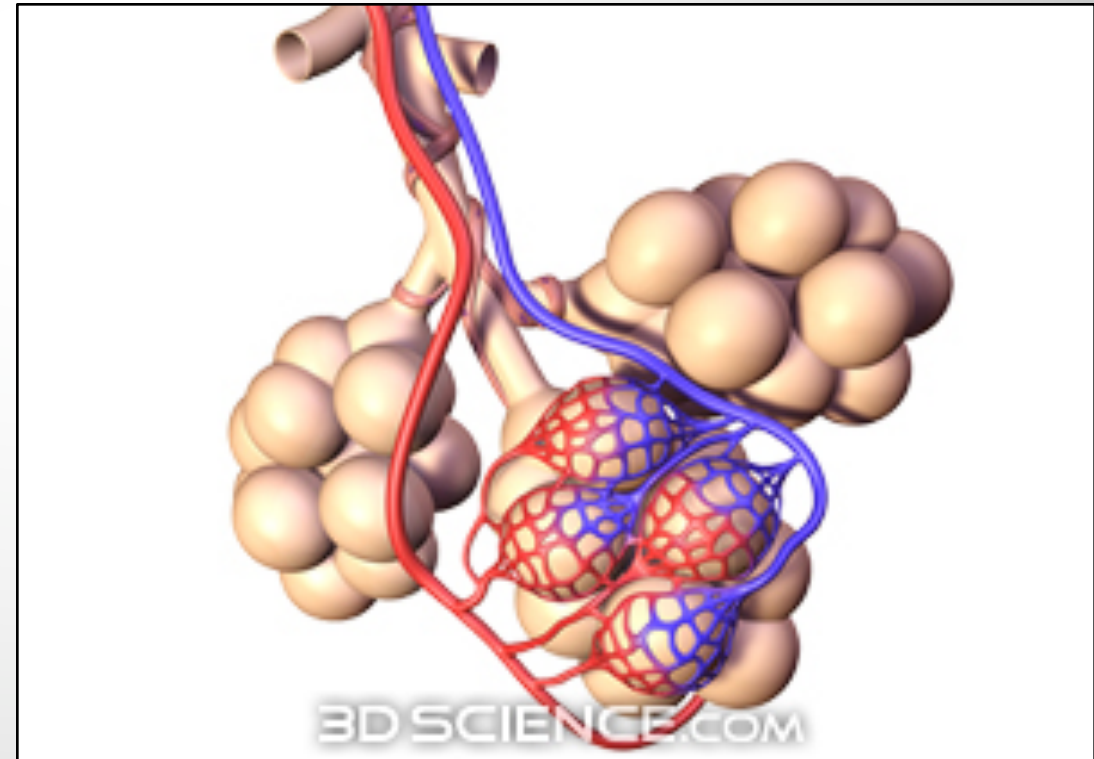
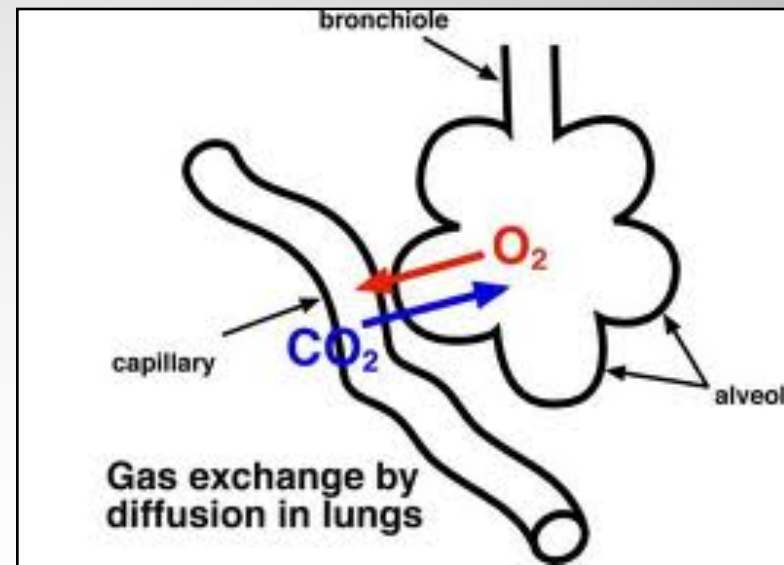
Take in oxygen  
and expel  
carbon dioxide  
as we breathe



# Alveoli

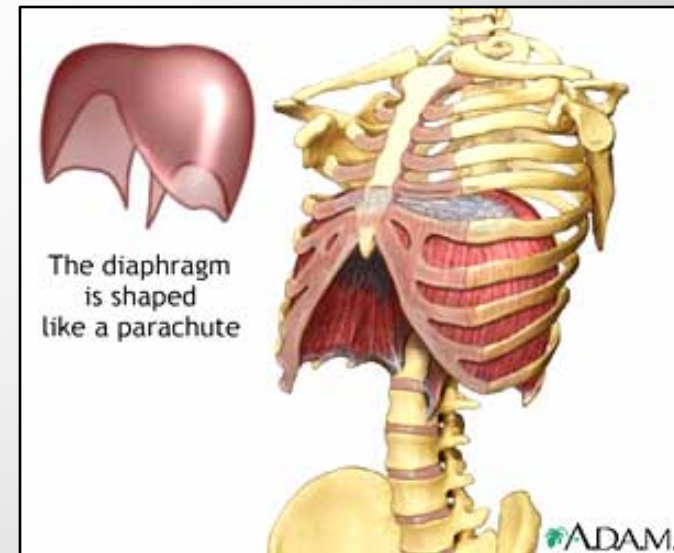
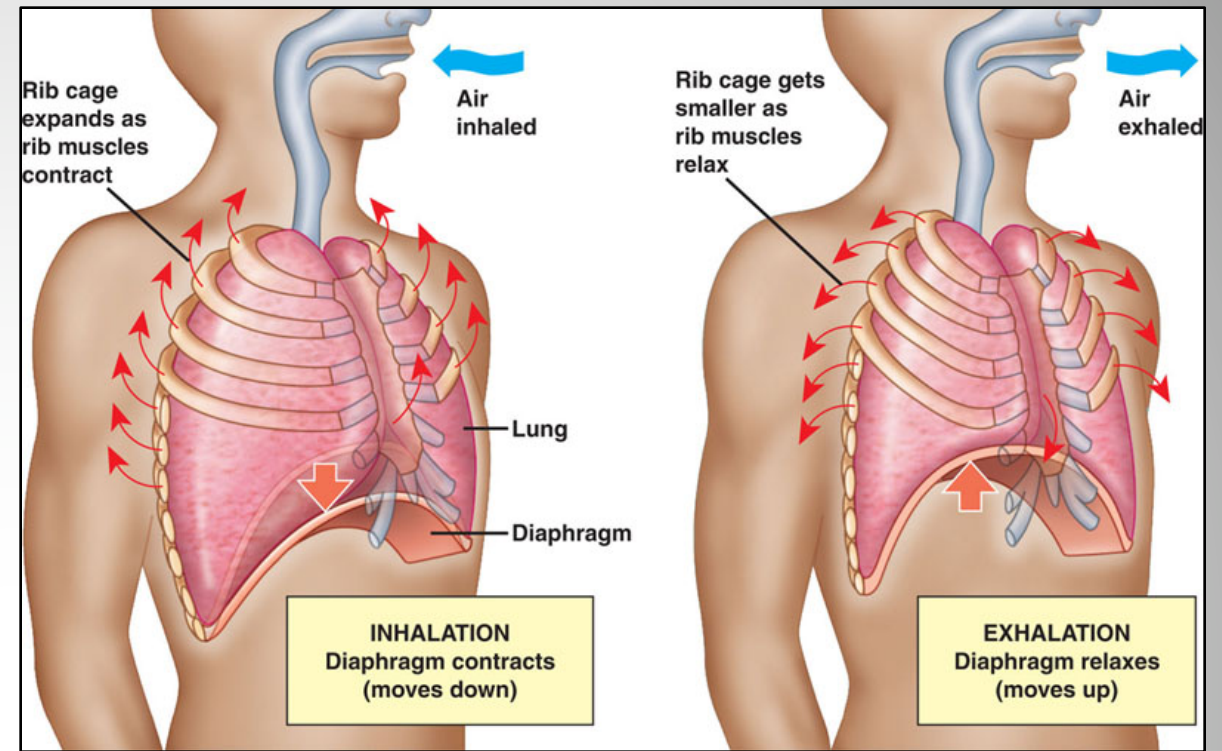
Where the  
exchange of  
oxygen and  
carbon dioxide  
occur in your  
blood

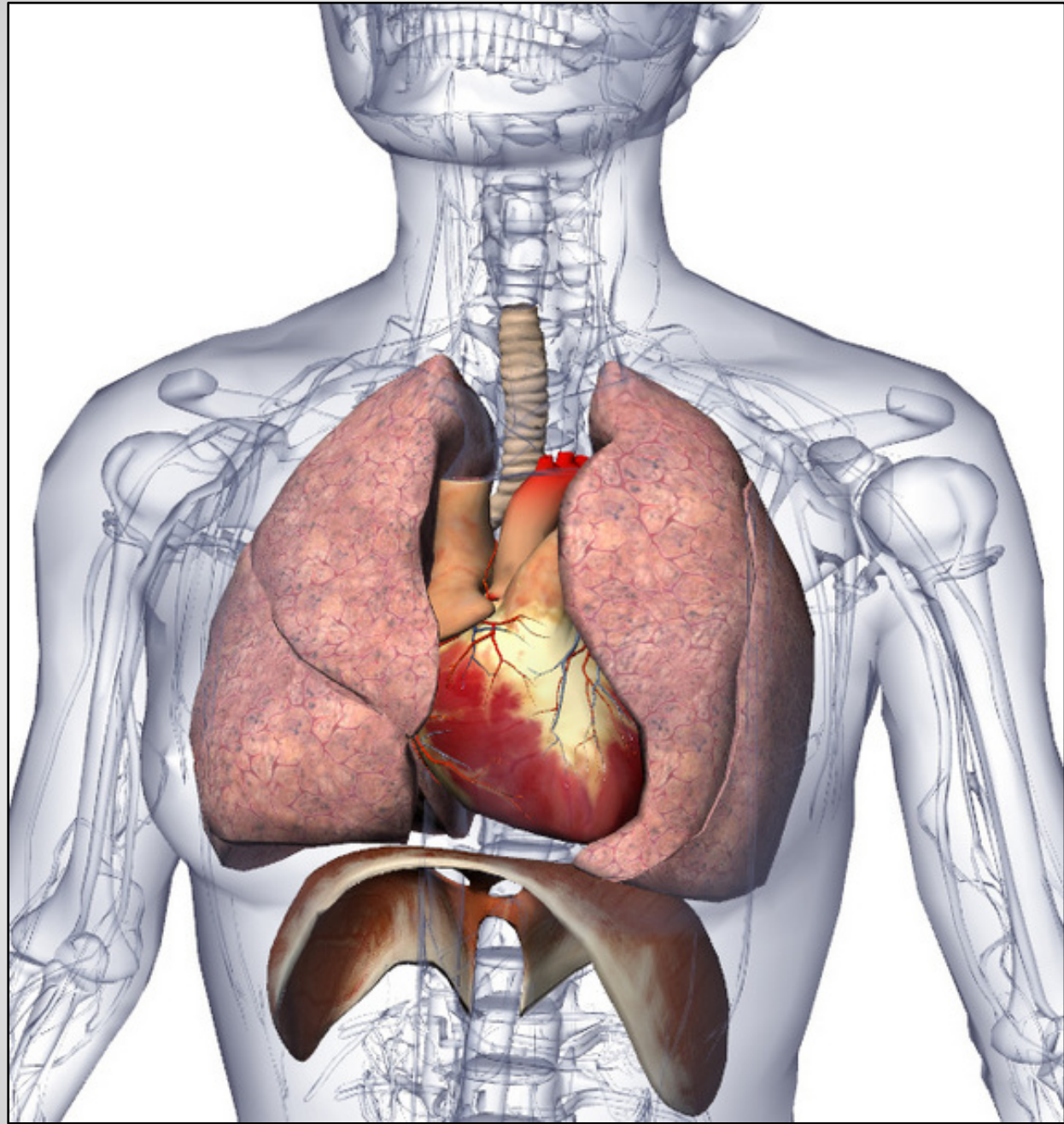
<http://www.youtube.com/watch?v=AJpur6XUiq4>



# Diaphragm

- a large dome-shaped muscle under the lungs
- diaphragm contracts downward, creating a vacuum that causes a rush of fresh air into the lungs





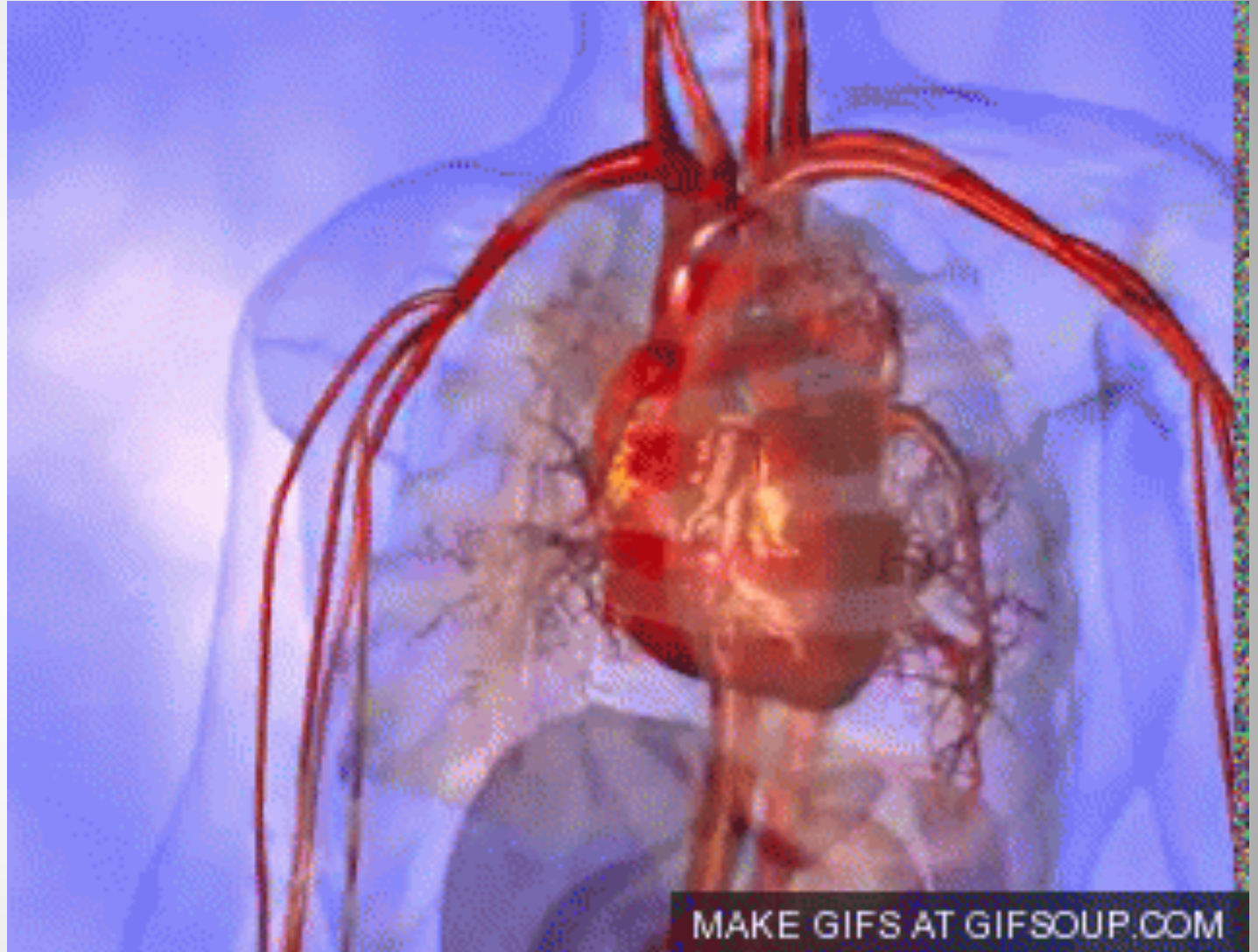


# Circulatory System

**Role:** responsible for the flow of blood, nutrients, oxygen and other gases, and hormones to and from cells

# Heart

pumps blood  
through the  
network of  
arteries and veins  
throughout the  
body



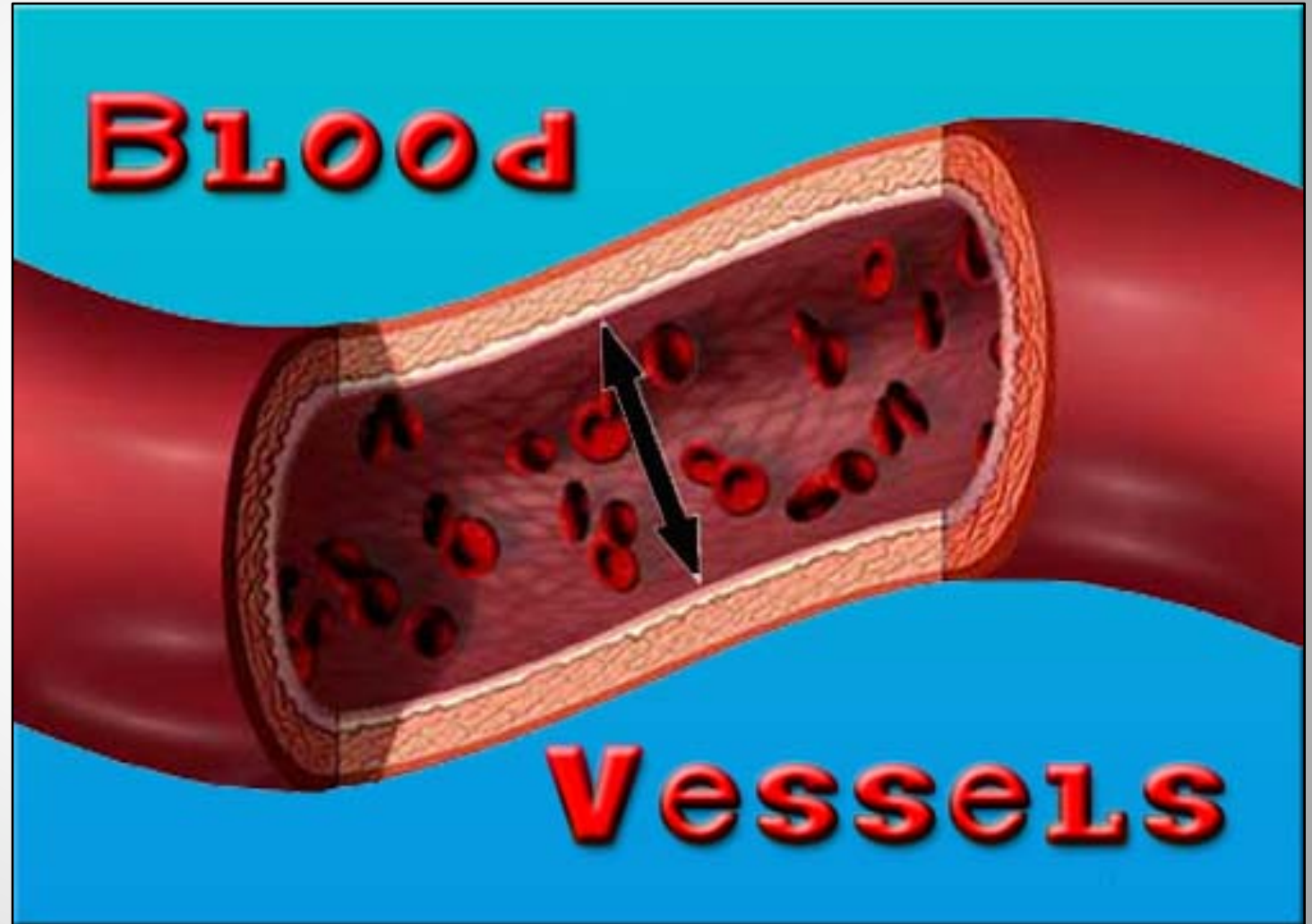




# Blood Vessels

**Tubular  
structures  
carrying blood  
through the body**

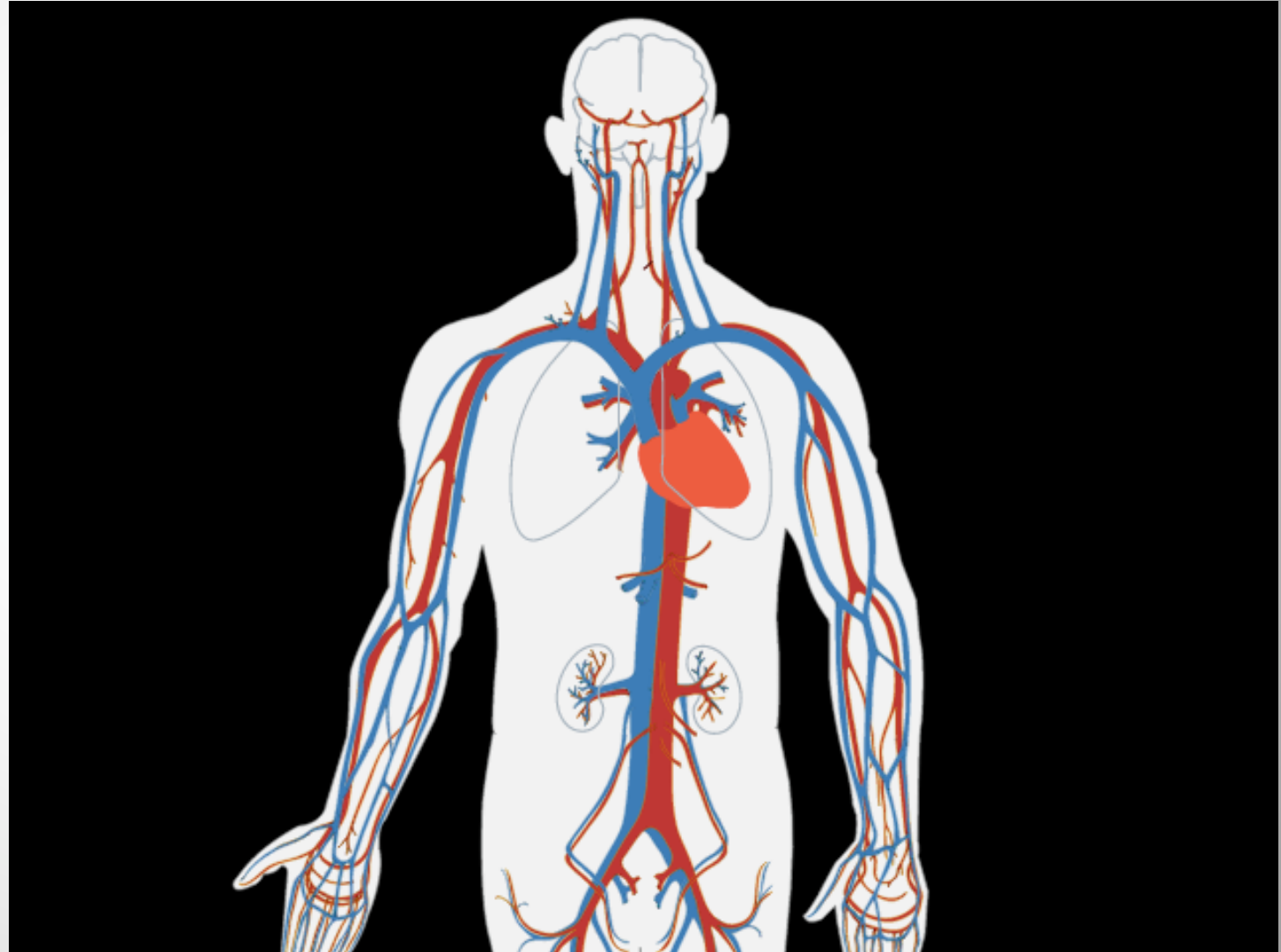
**Like the train  
tracks of your  
body**



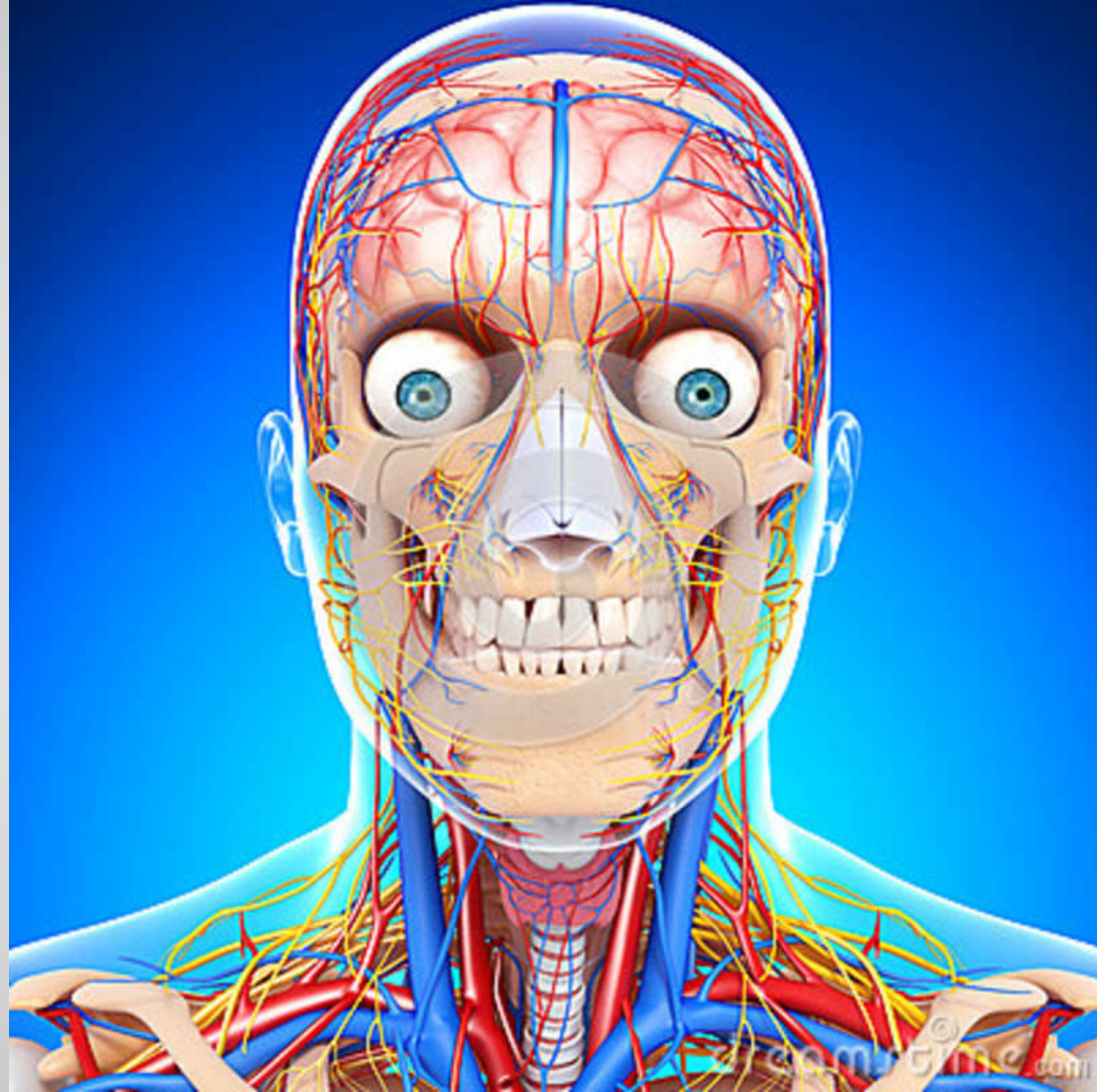
# Types of Blood Vessels

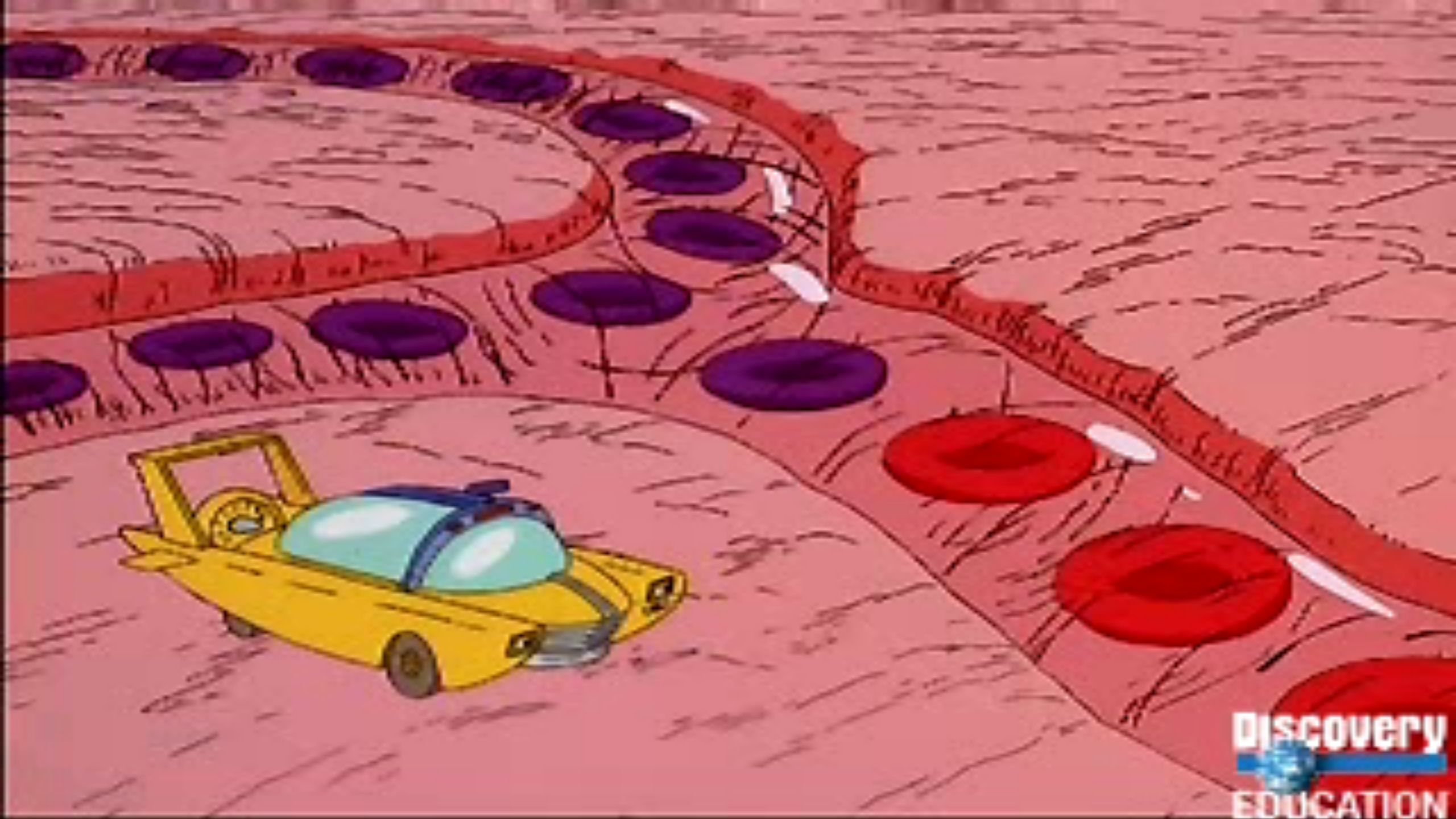
## Veins:

carry oxygen  
poor blood  
back to the  
heart (like a  
train carrying  
trash away)









**Summarizing Strategy: Identify the two main systems involved in the activity below and describe the effects of this activity on the two systems.**

