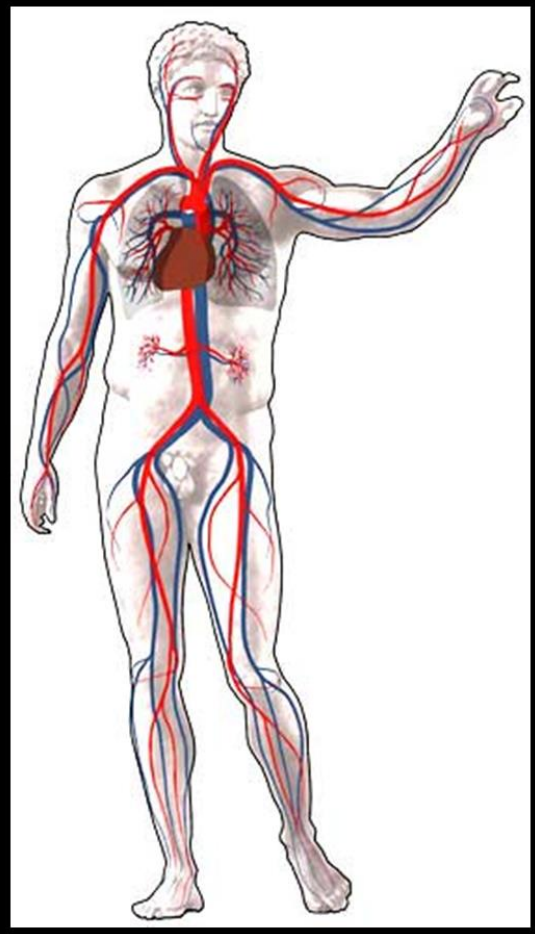
CARDIOVASCULAR SYSTEM

AKA Circulatory System
(they mean the same thing)

CARDIOVASCULAR SYSTEM

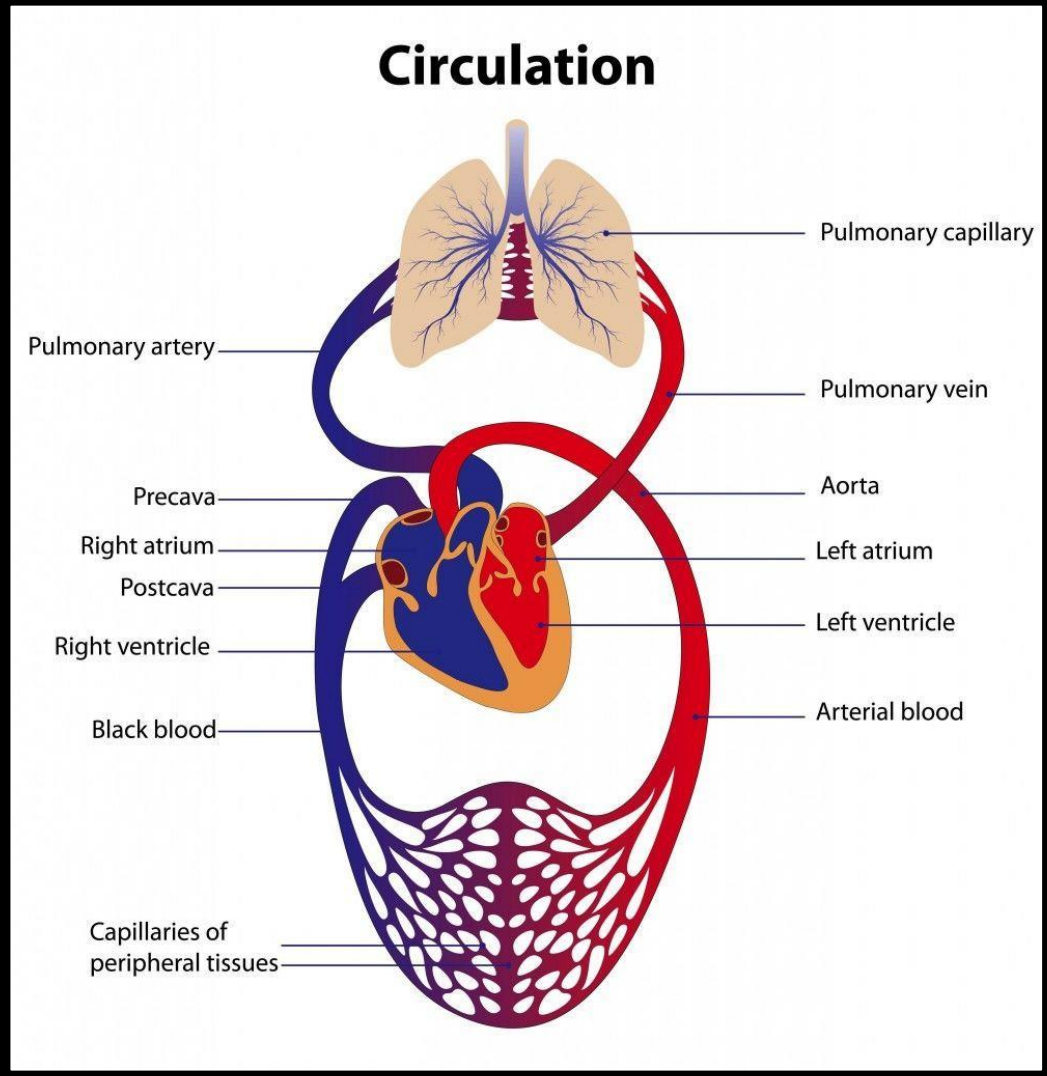
- **Made up of**:
  - Heart
  - Blood
  - Blood vessels

This system works to transport oxygen and nutrients to all tissues and organs in your body.



FUNCTIONS OF THE CARDIOVASCULAR SYSTEM

- Blood in the circulatory system delivers **oxygen** and **nutrients** to cells and removes waste materials (like **carbon dioxide**).
- This circulation is **one-way**!

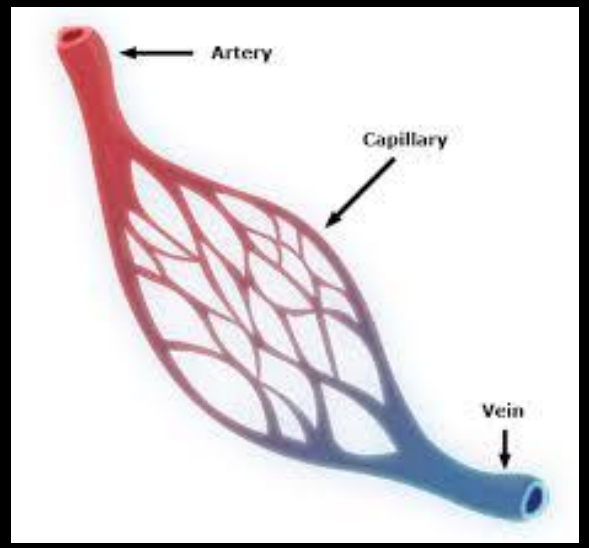


If something goes wrong with cardiovascular system

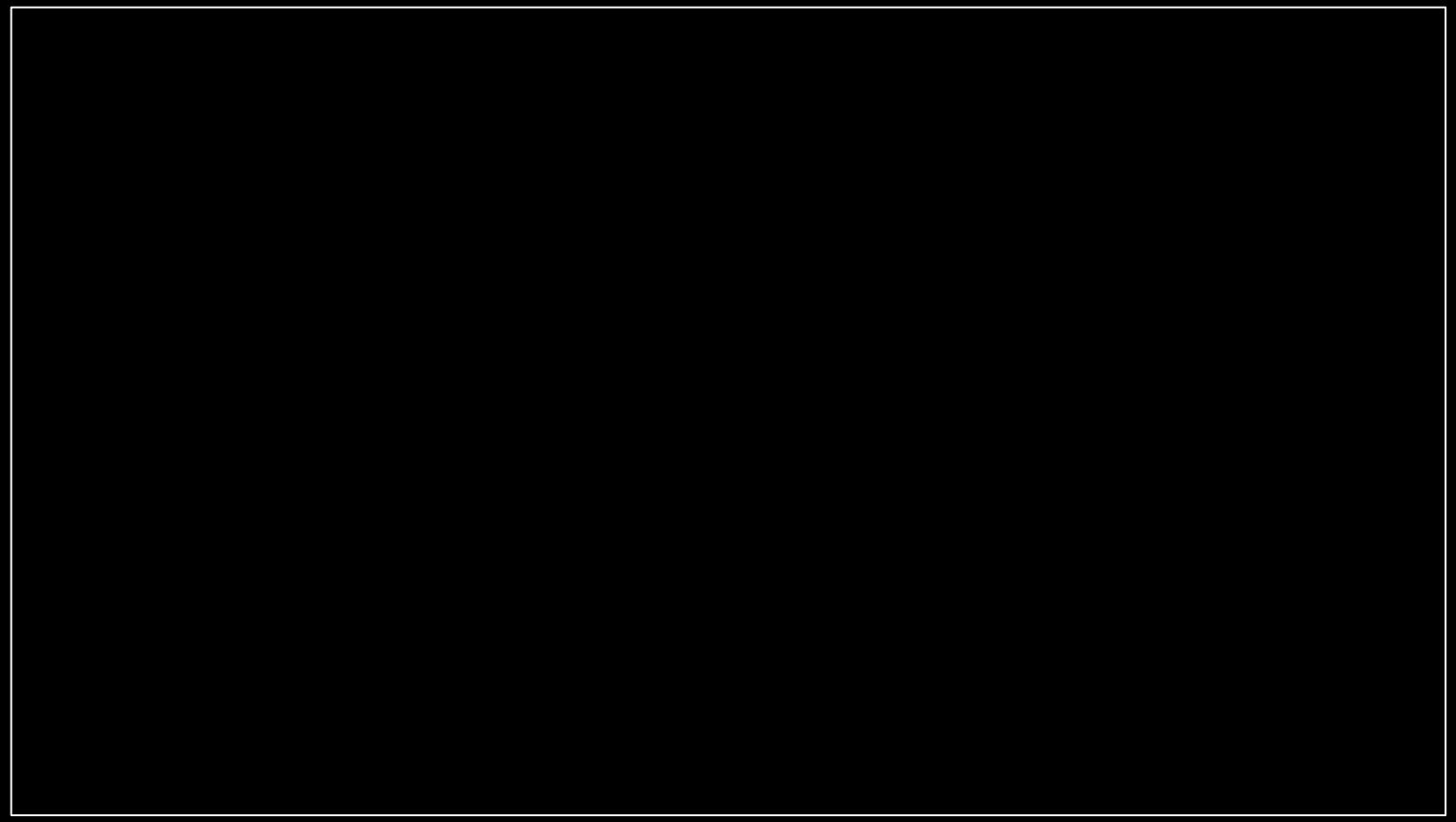
- The body cells don't get oxygen and nutrients so they die.
- If cells die, tissues die.
- If tissues die, then organs die.
- If organs die, the whole person dies!

TERMS ASSOCIATED WITH CARDIOVASCULAR SYSTEM

- **Arteries:** carry oxygenated blood away from the heart/lungs to all parts of the body.
- **Veins:** Carry waste products (carbon dioxide) back to heart/lungs.
  - **EXCEPTION!** Pulmonary artery and vein!!!
- **Capillaries:** Very, very small arteries with very, very thin walls. This is where nutrients, oxygen, and carbon dioxide actually enter/leave the blood.
- **Heart (cardiac) Valves**: Keep blood flowing in the correct direction.



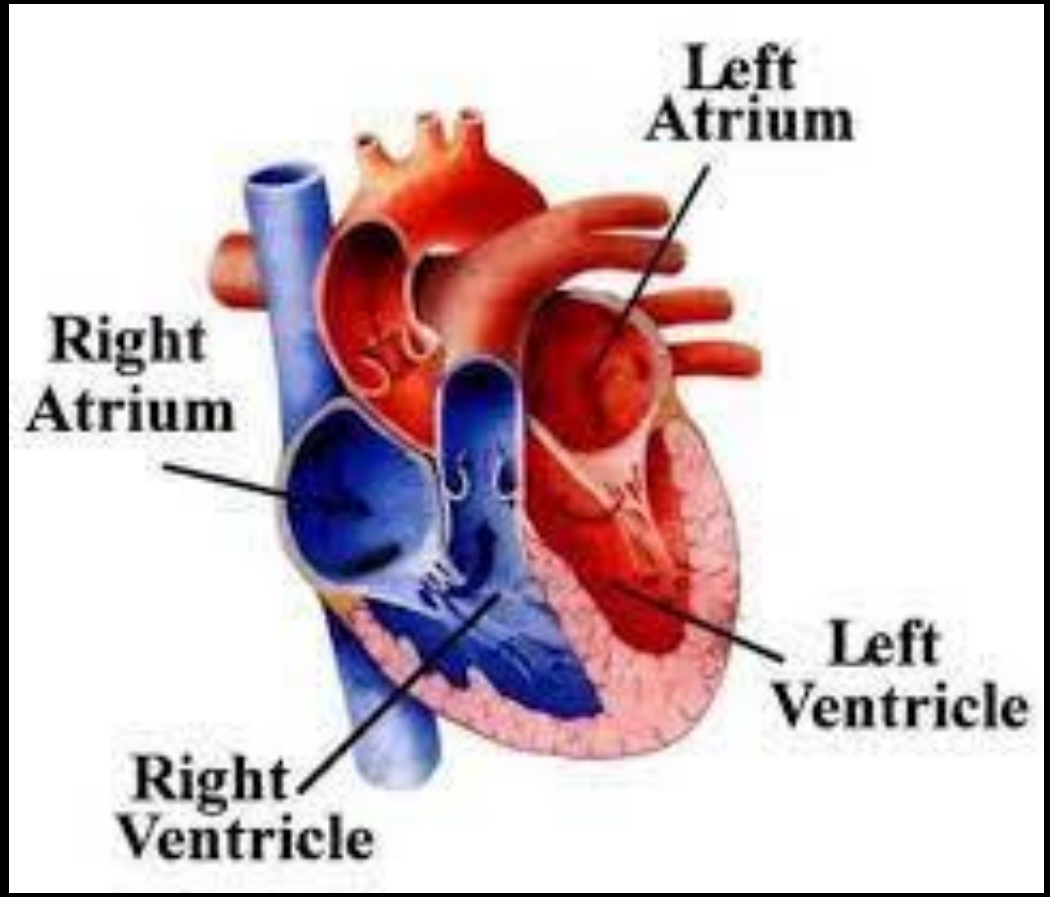
THE HEART AND HOW IT WORKS- MAYO CLINIC (3 MINUTES)



ANATOMY OF THE HUMAN HEART

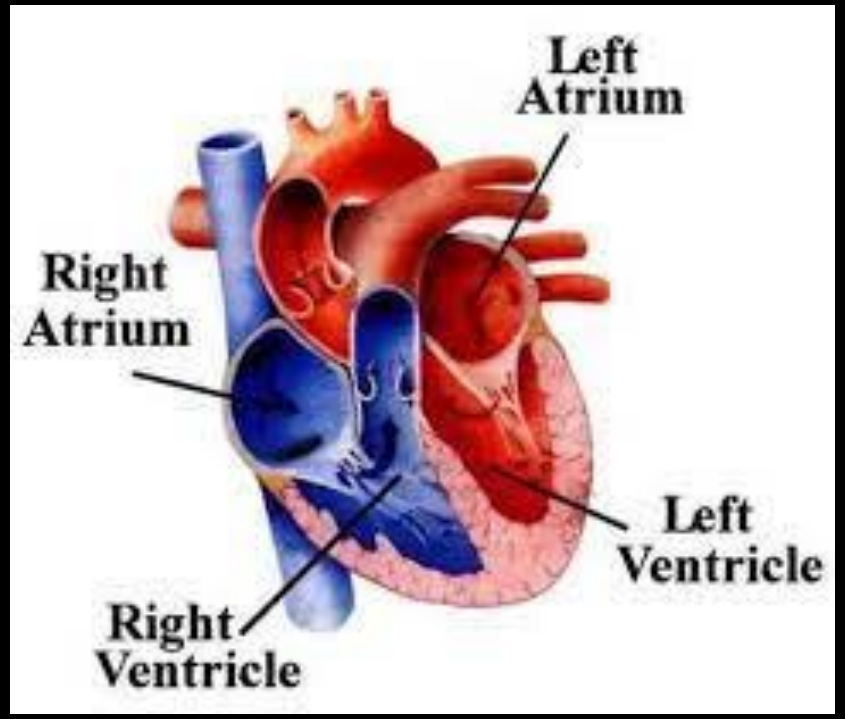
4 Chambers of the heart

- **Right Atrium**—receives oxygen poor blood from body
- **Right Ventricle**—pumps de-oxygenated blood to lungs
- **Left Atrium**—receives oxygen-rich blood from lungs
- **Left Ventricle**—pumps oxygen rich blood to body



What's the advantage to having 4 chambers in the heart?

- Very efficient
- Allows us to send our "dirty blood" to the cleaners (lungs) and our "clean blood" to the rest of the body without having to mix the two.

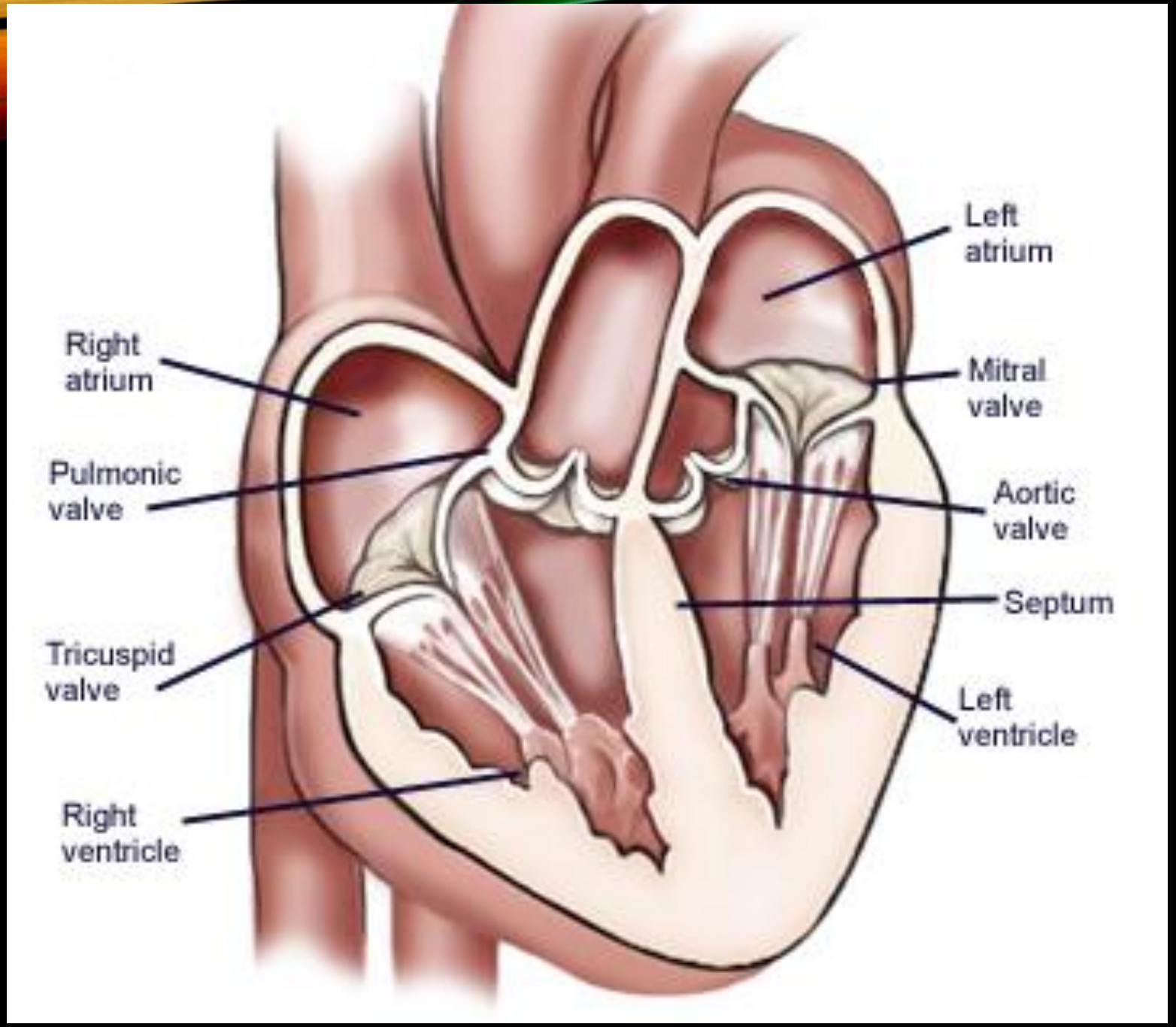


HEART ANATOMY -CONTINUED

- **Heart valves:**
  - heart has four valves
  - one for each chamber of the heart.
  - The valves keep blood moving through the heart in the right direction.

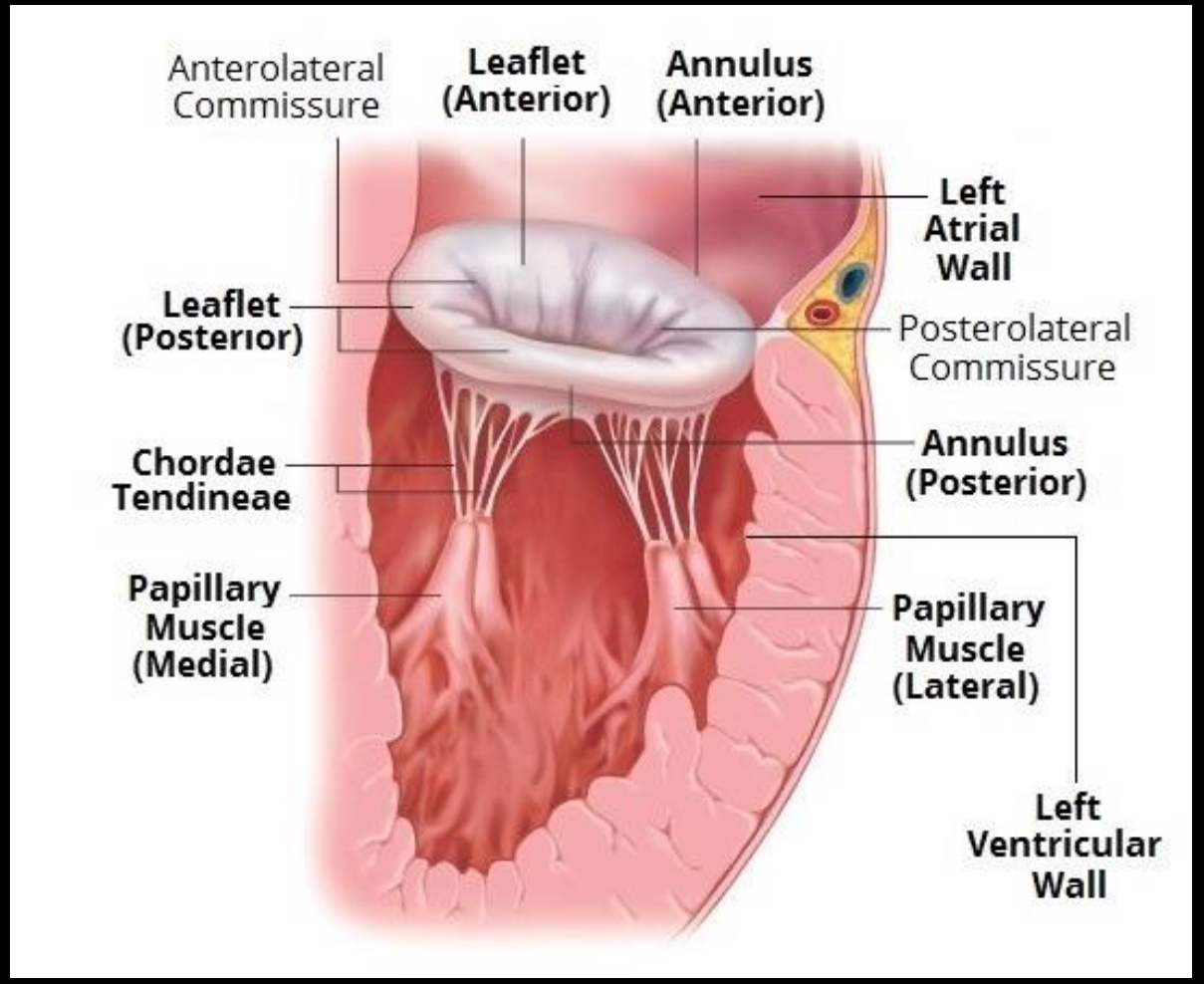
- **Mitral valve and Tricuspid valve** are located between the atria (upper heart chambers) and the ventricles (lower heart chambers).

- **Aortic valve and Pulmonic valve** are located between the ventricles and the major blood vessels leaving the heart.

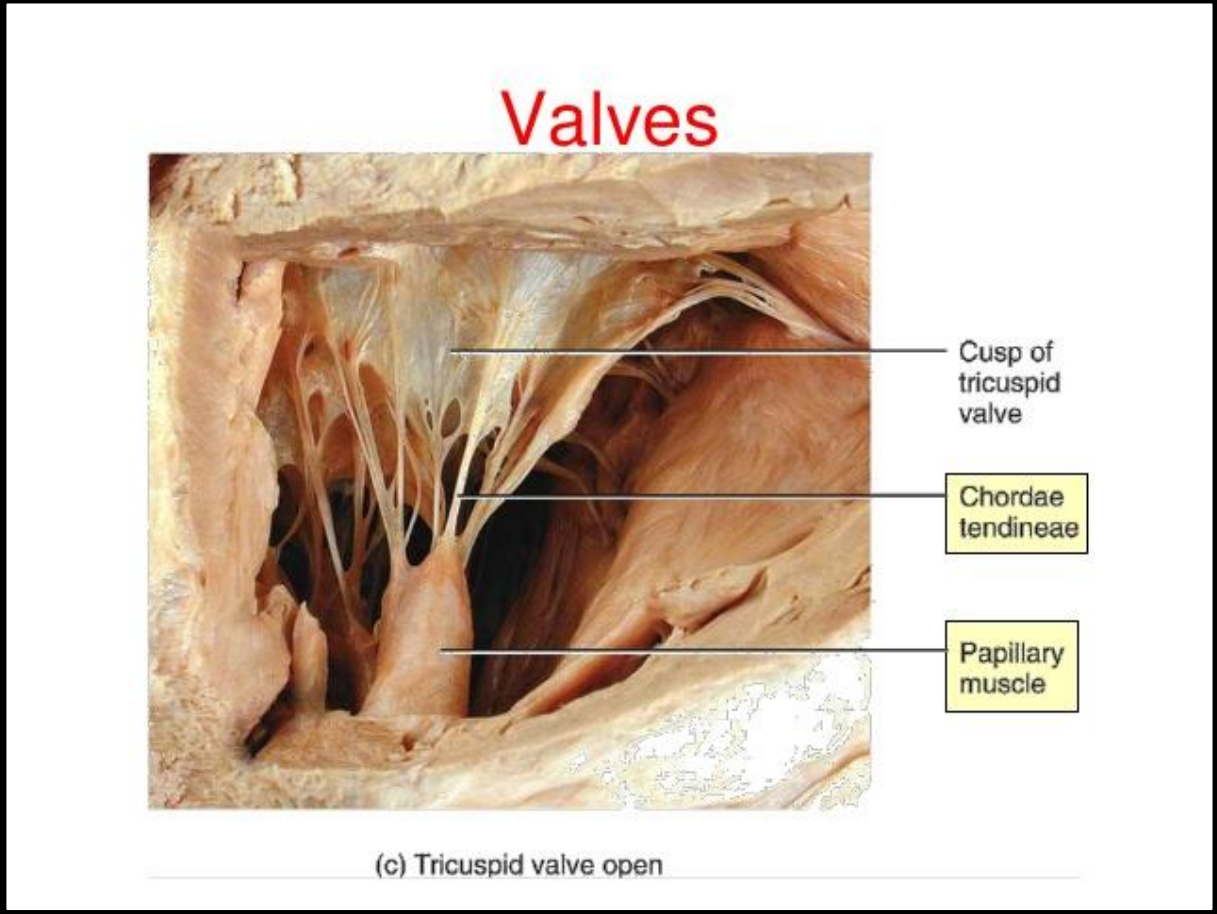

Left atrium
Right atrium
Mitral valve
Pulmonic valve
Aortic valve
Septum
Tricuspid valve
Left ventricle
Right ventricle

HEART ANATOMY-CONTINUED

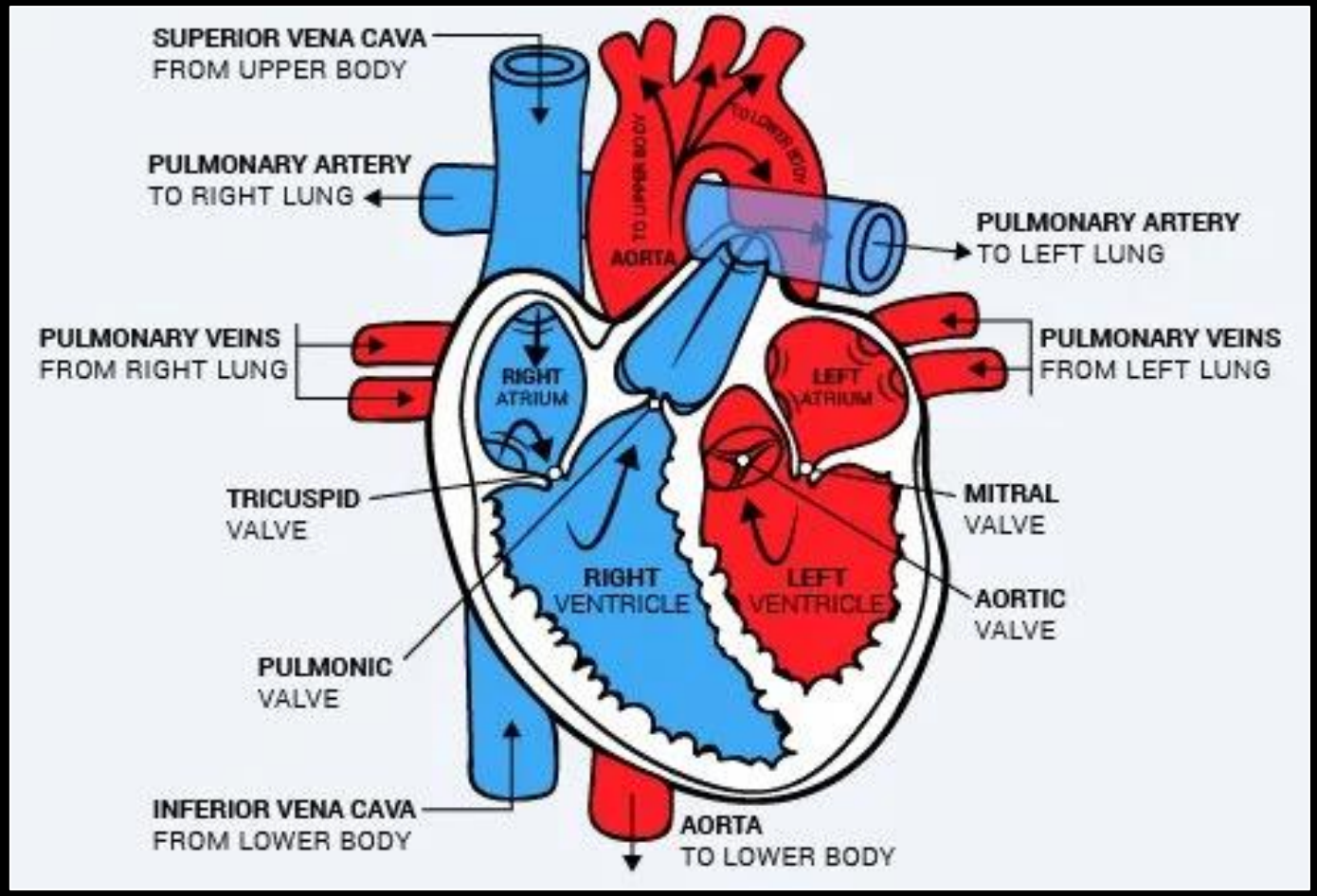
- **Chordae tendineae**:
  - known as the heart strings
  - Are tendon-resembling fibrous cords of connective tissue that connect the papillary muscles to the tricuspid valve and the mitral valve in the heart.



PICTURE OF A CADAVER TRICUSPID VALVE INCLUDING CHORDAE TENDINEA



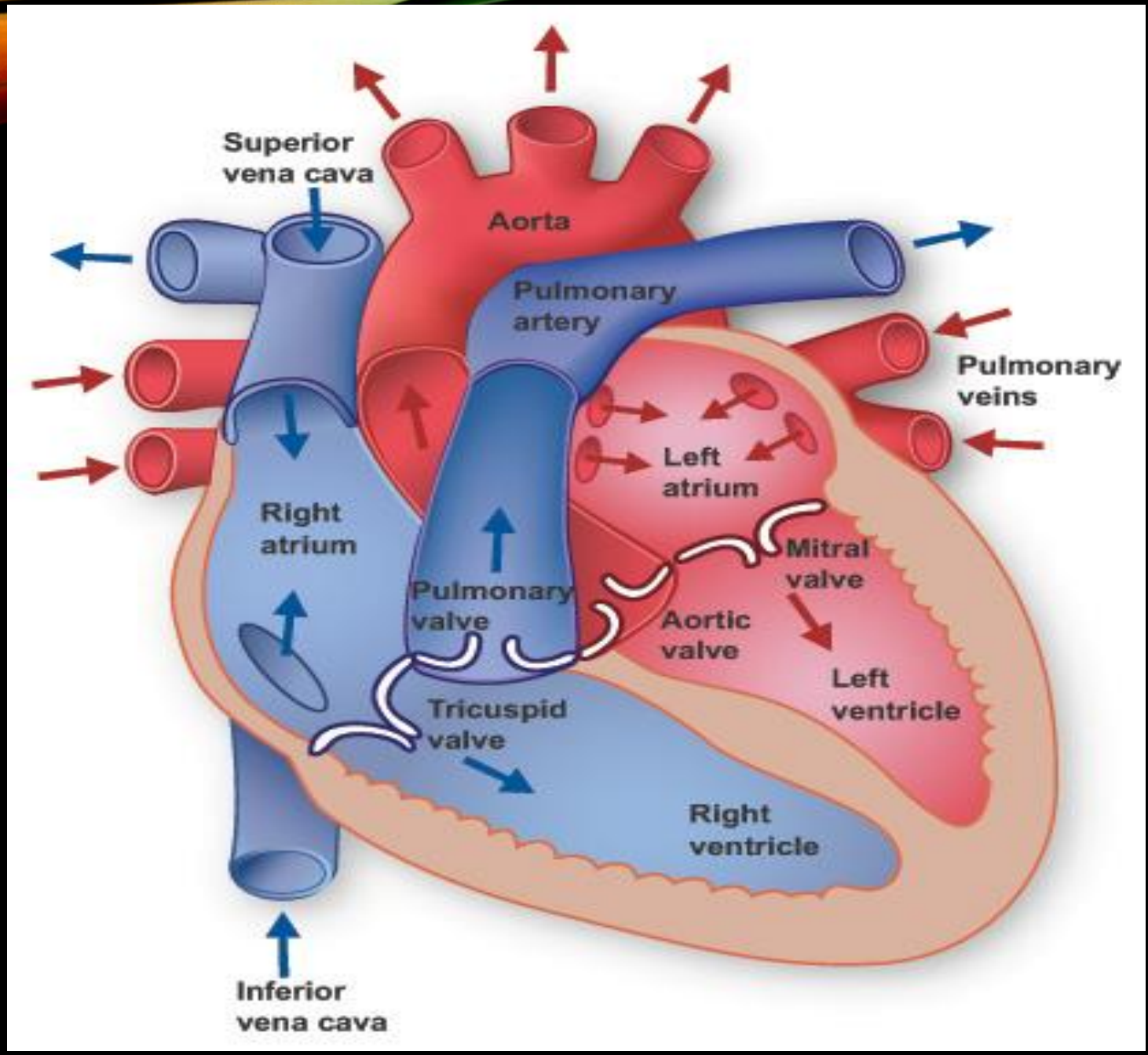
BLOOD FLOW THROUGH THE HEART



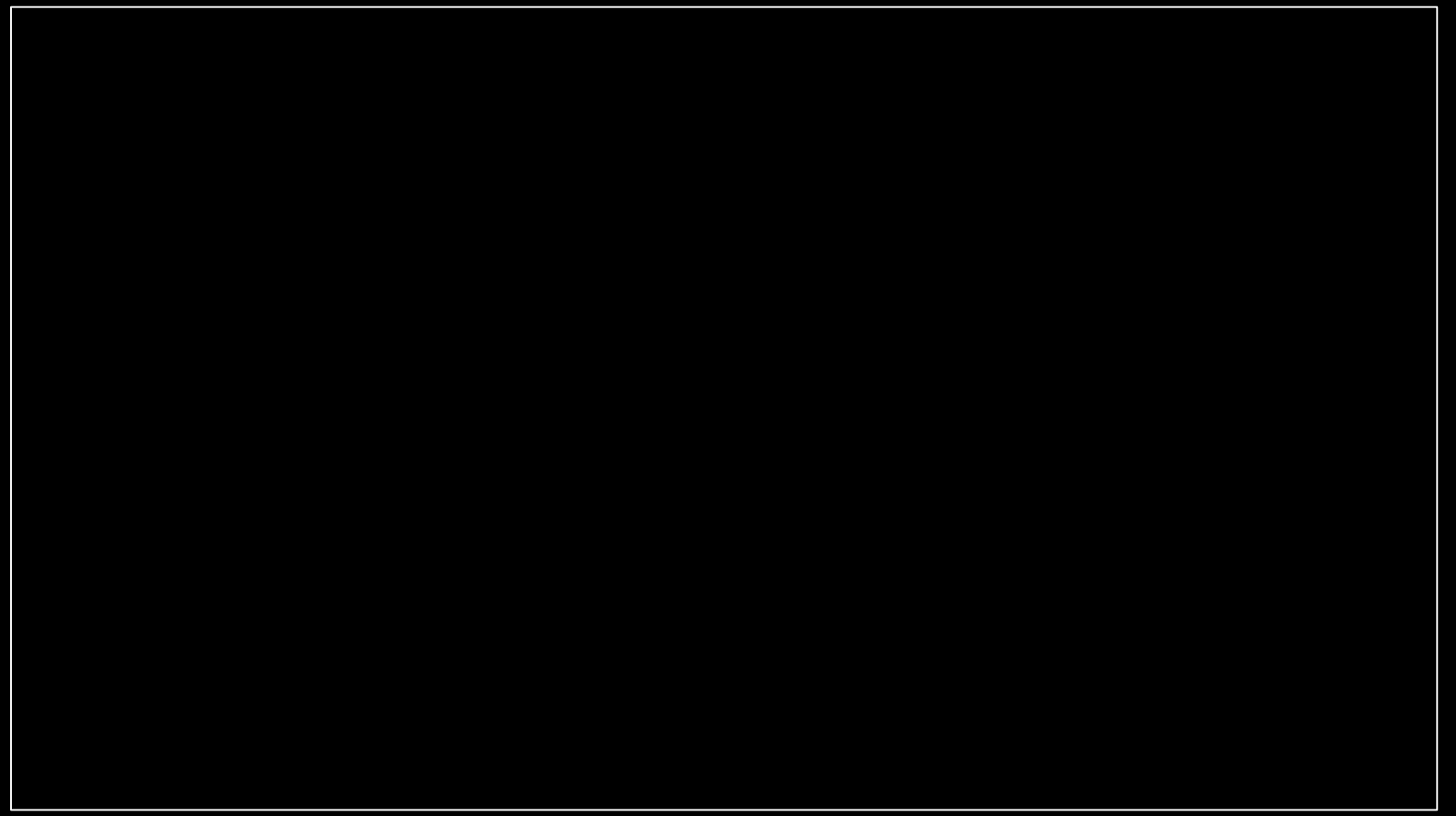
Circulation Through the Heart

- Superior/Inferior Vena Cava brings deoxygenated blood to the…
- Right Atrium to the…
- Right Ventricle to the…
- Pulmonary artery (only artery in the body to carry deoxygenated blood!) to the…
- Lungs (The red blood cells take in the oxygen and get rid of the carbon dioxide. This exchange happens in the capillaries around the alveoli)
- Back to the heart through the pulmonary veins (only veins in the body to carry oxygenated blood) to the…
- Left atrium to the…
- Left Ventricle to the…
- Aorta and on to the body
- And eventually it will come back to the heart to begin all over again!!!

KNOW THIS!


Superior vena cava
Aorta
Pulmonary artery
Pulmonary veins
Left atrium
Right atrium
Mitral valve
Pulmonary valve
Aortic valve
Left ventricle
Tricuspid valve
Right ventricle
Inferior vena cava

HUMAN CIRCULATORY SYSTEM VIDEO 4 MINUTES.



HOW DOES THE HUMAN HEART WORK?