

# Circulatory System

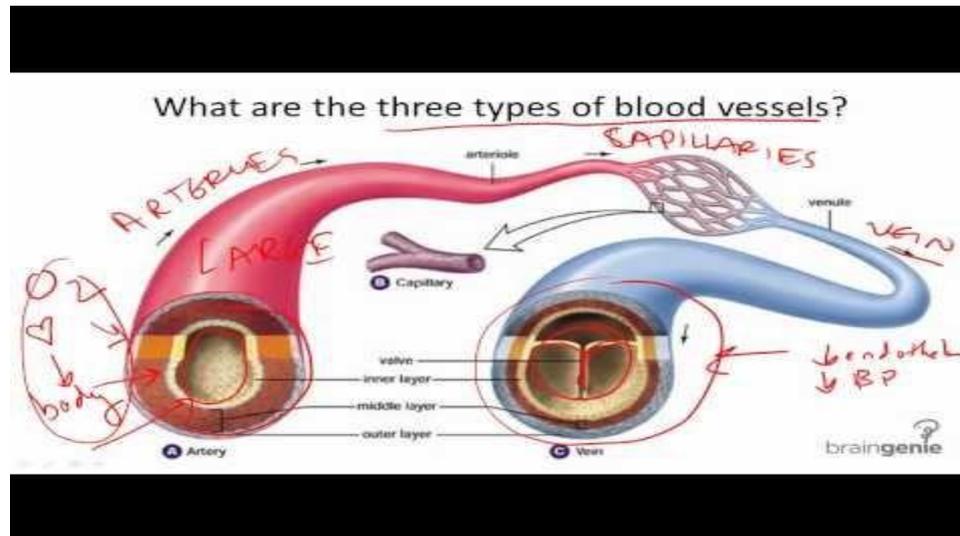
## Blood Vessels

DHO 7.8, pg.

HS1 / 2016-2017

# Today's Lesson Overview

[https://youtu.be/whtNDBIhczQ?list=PLr3ppdrDHkLqr5iUjCutB9ZPPn\\_qWY1TS](https://youtu.be/whtNDBIhczQ?list=PLr3ppdrDHkLqr5iUjCutB9ZPPn_qWY1TS) (3:16)



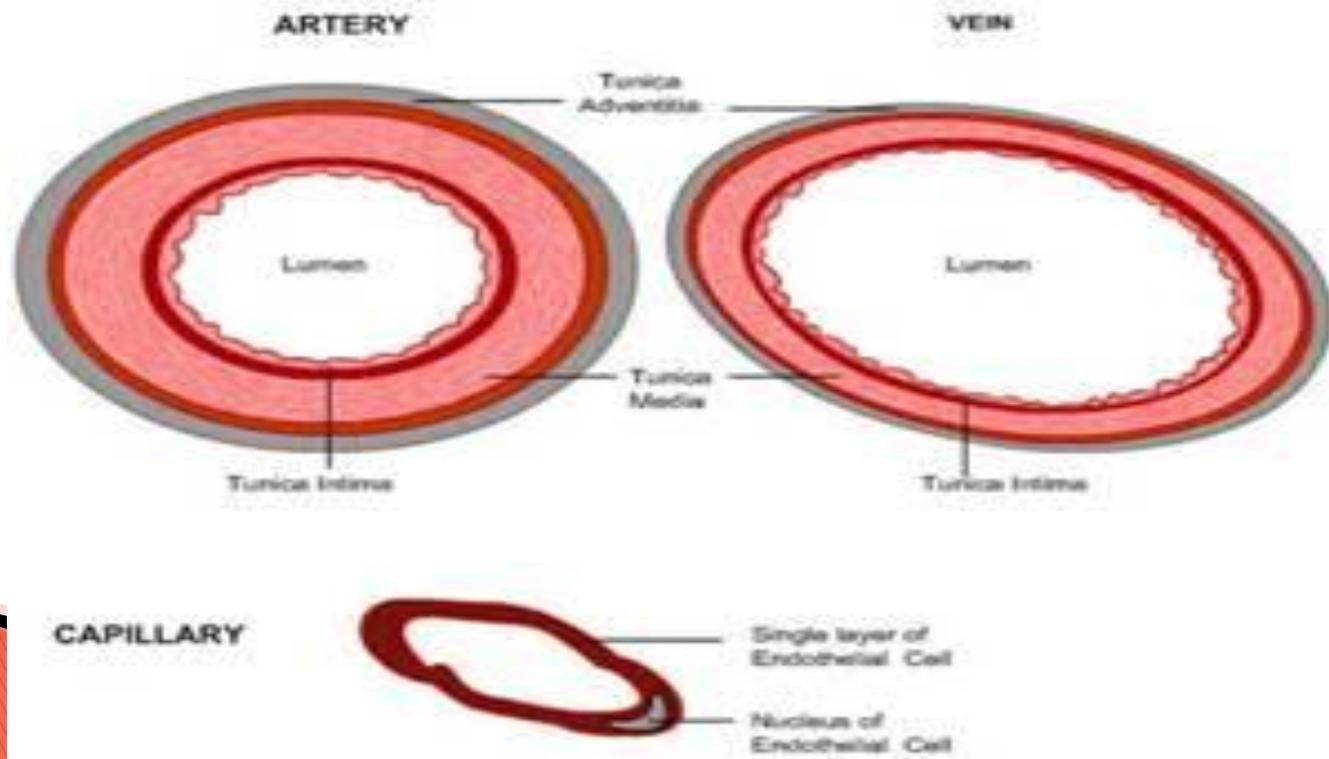
# Blood Vessels

- ▶ When blood leaves the heart, it is carried throughout the body in blood vessels
- ▶ Heart & blood vessels form a closed system for the flow of blood
- ▶ 3 main types of blood vessels:
  1. Arteries
  2. Capillaries
  3. Veins



# Arteries

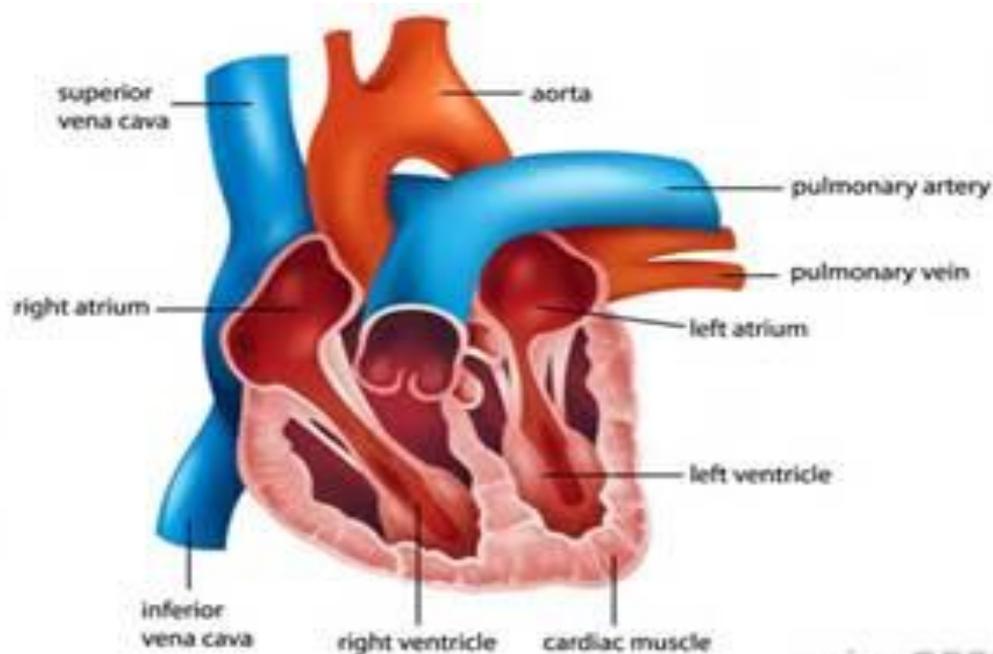
- ▶ Carry blood **AWAY** from the heart
- ▶ Are more muscular & elastic than veins  
(because they receive blood as it is pumped from the ventricles under high pressure)



# Arteries

## Pulmonary arteries (R & L)

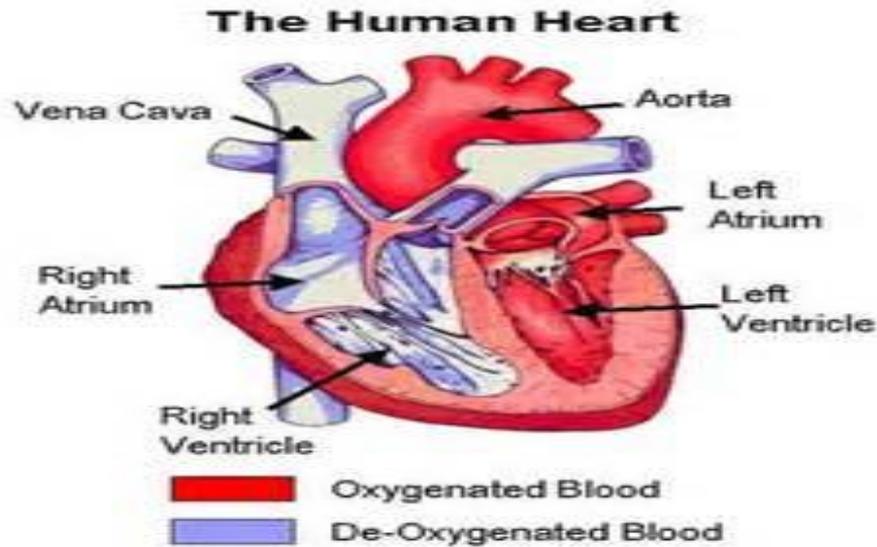
- ▶ Carry deoxygenated blood from the RV to the lungs
- ▶ Only arteries in the body that carry deoxygenated blood



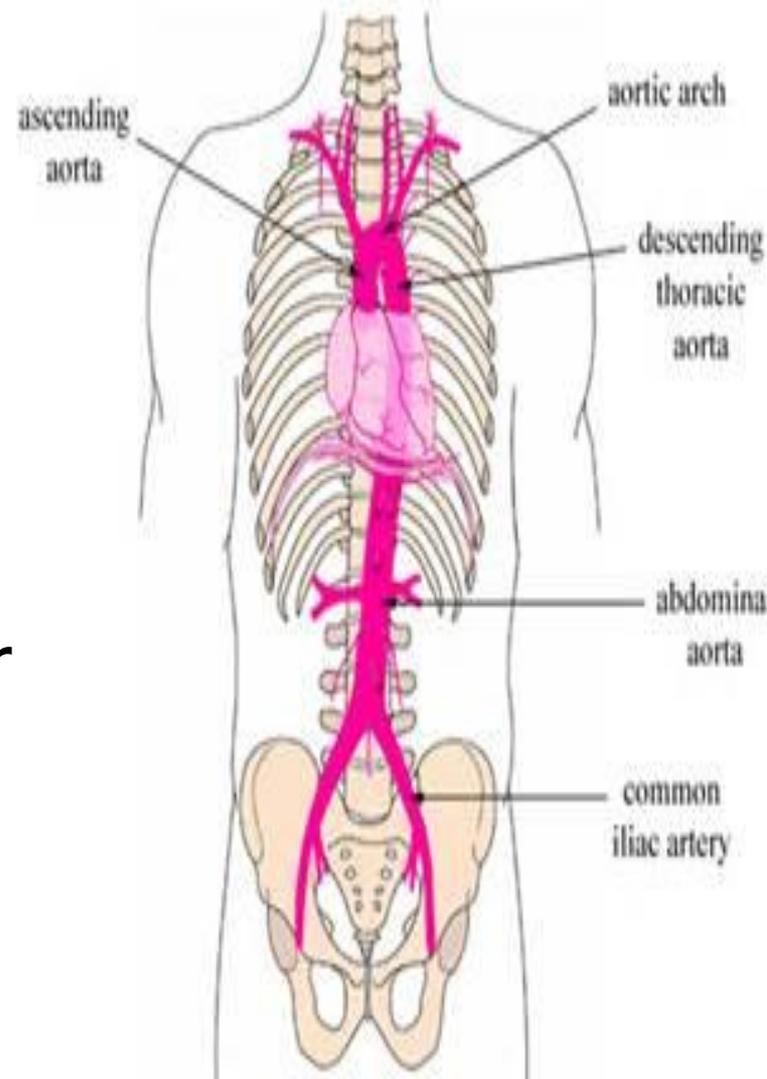
# Arteries

Aorta=largest artery in the body

▶ Receives blood from LV



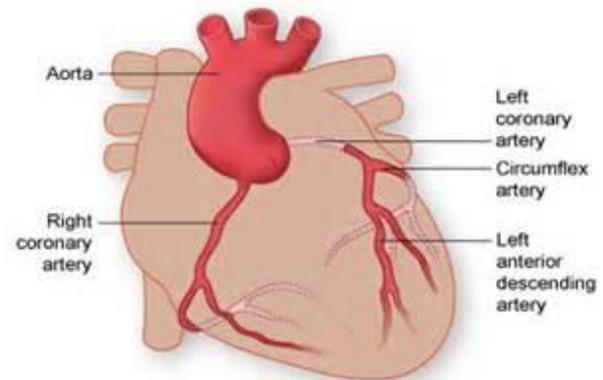
Branches into all the other arteries that supply blood to the body



# Arteries

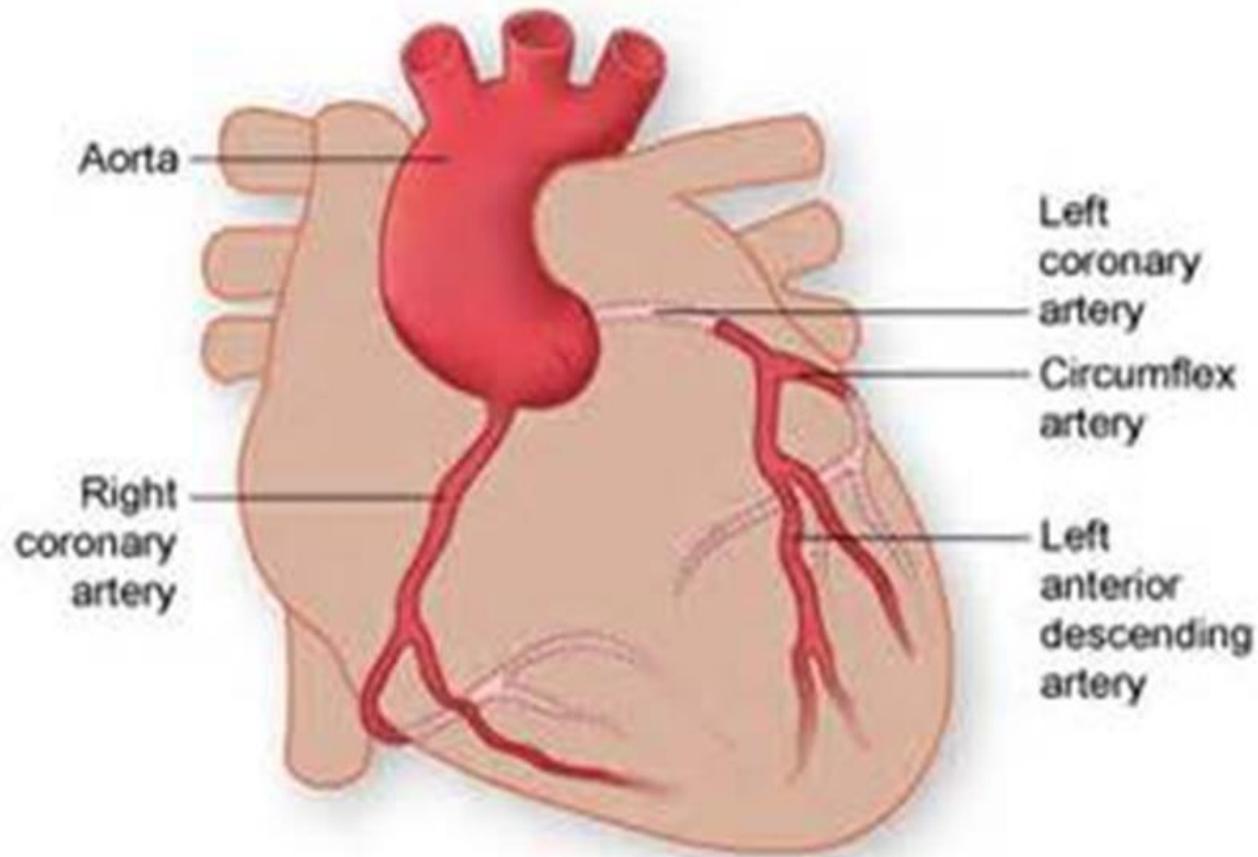
## Aorta

- ▶ 1<sup>st</sup> branch of the aorta = ***coronary artery*** which carries blood to the myocardium
- ▶ Other branches carry blood to the rest of the body (head, arms, abd, legs, etc.)



## Coronary Artery Blood flow (watch to 44sec)

<https://www.youtube.com/watch?v=tBQa8IBzP6I>

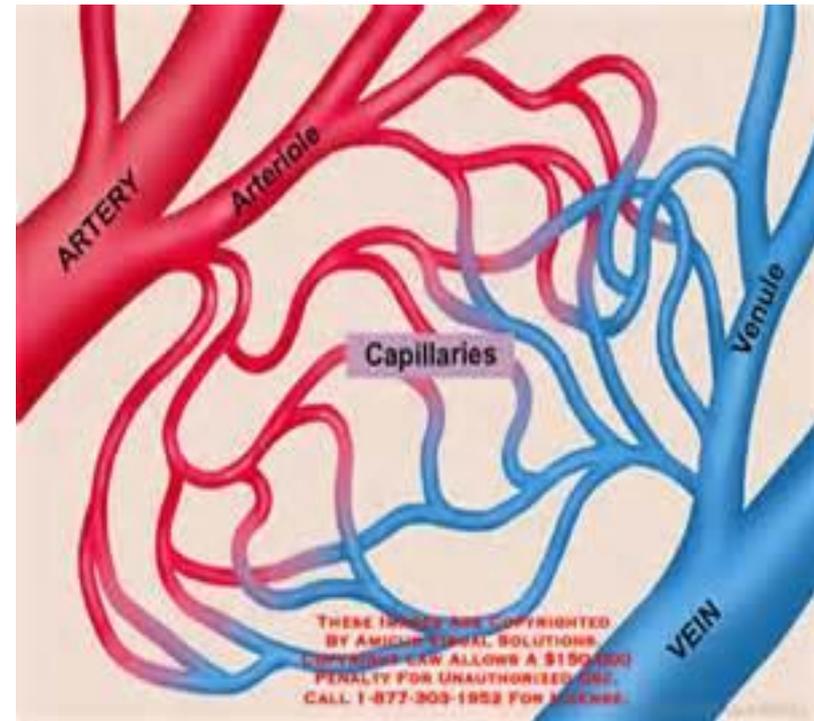
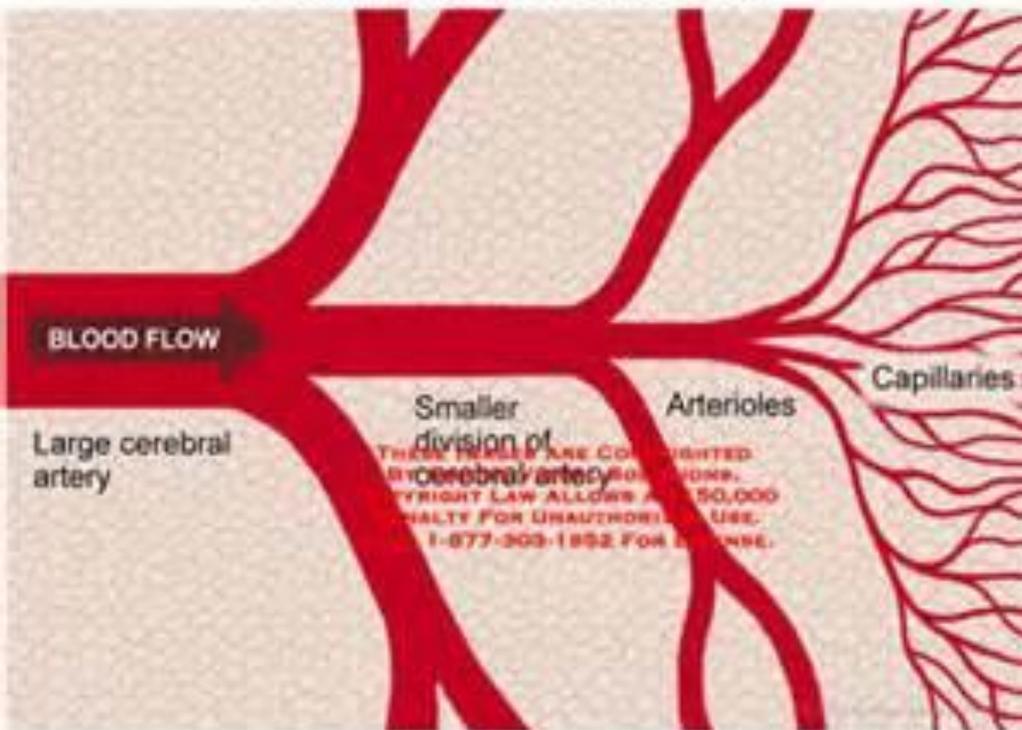


# Arteries

## Arterioles

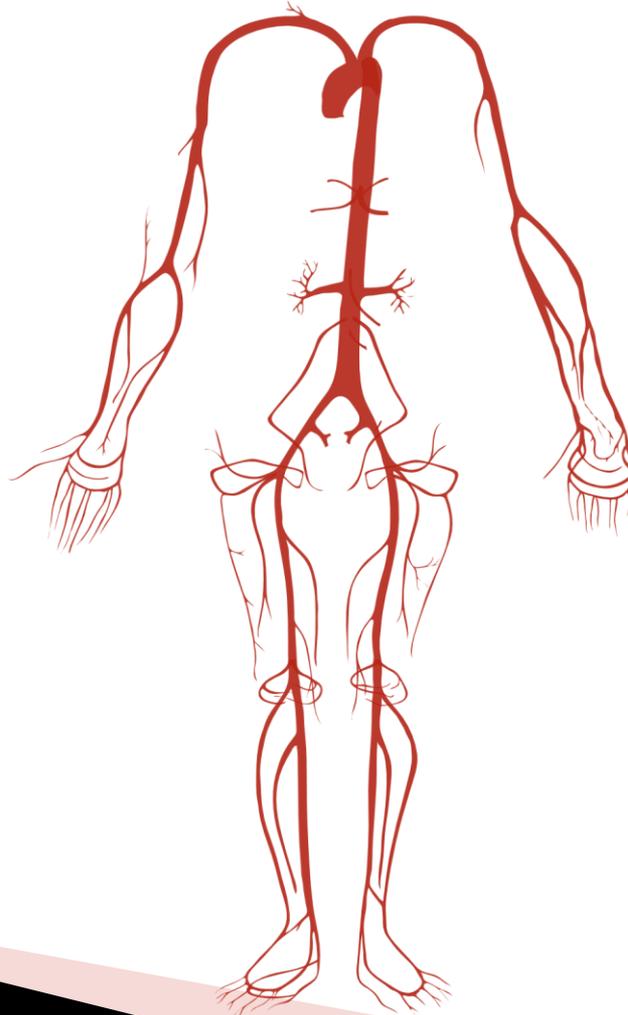
- ▶ Smallest branches of arteries
- ▶ Connect with capillaries

Normal Arterial Flow to Cells



# Artery Man (watch to 2:20)

<https://www.youtube.com/watch?v=0paErJ-FhF8>



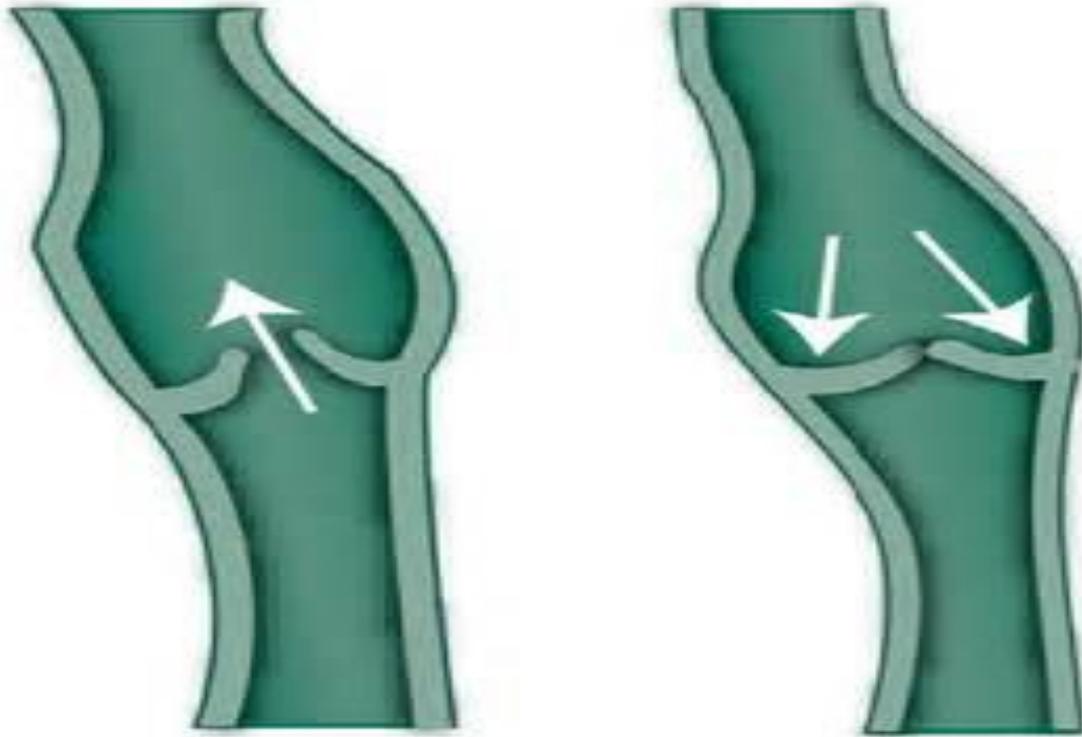
# Veins

- ▶ Carry blood **BACK** to the heart
- ▶ Are thinner & have less muscle tissue than arteries



# Veins

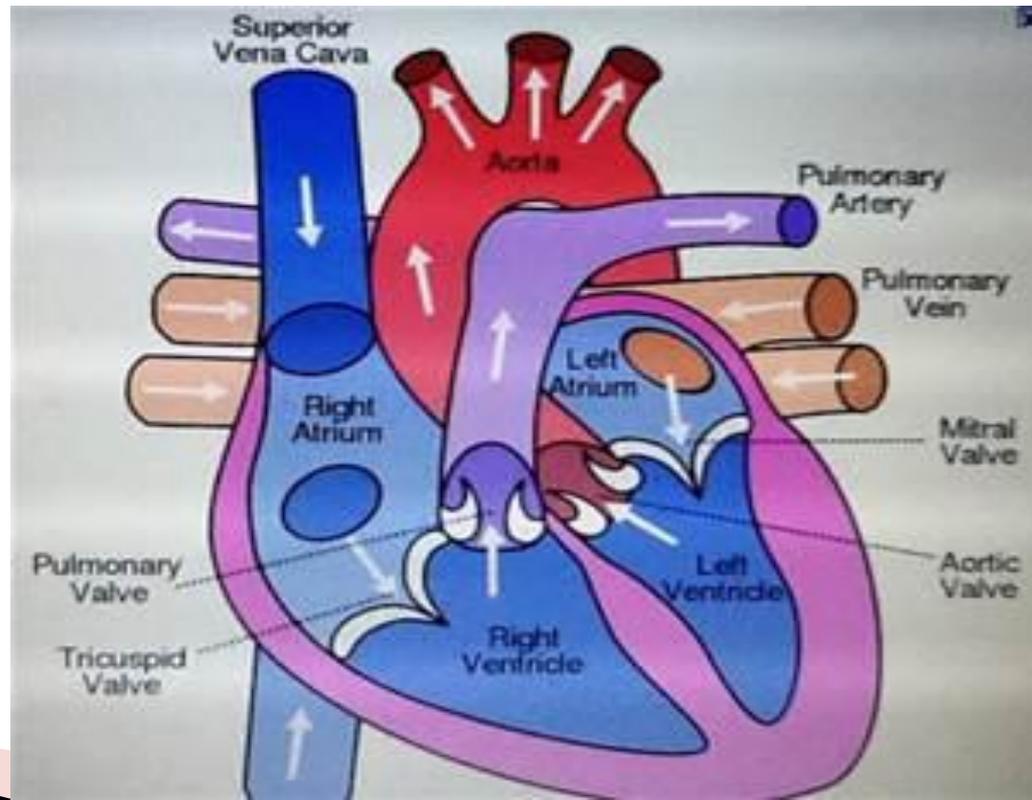
- ▶ Most have valves to keep blood from flowing backward



# Veins

## Pulmonary Veins (2 R & 2 L)

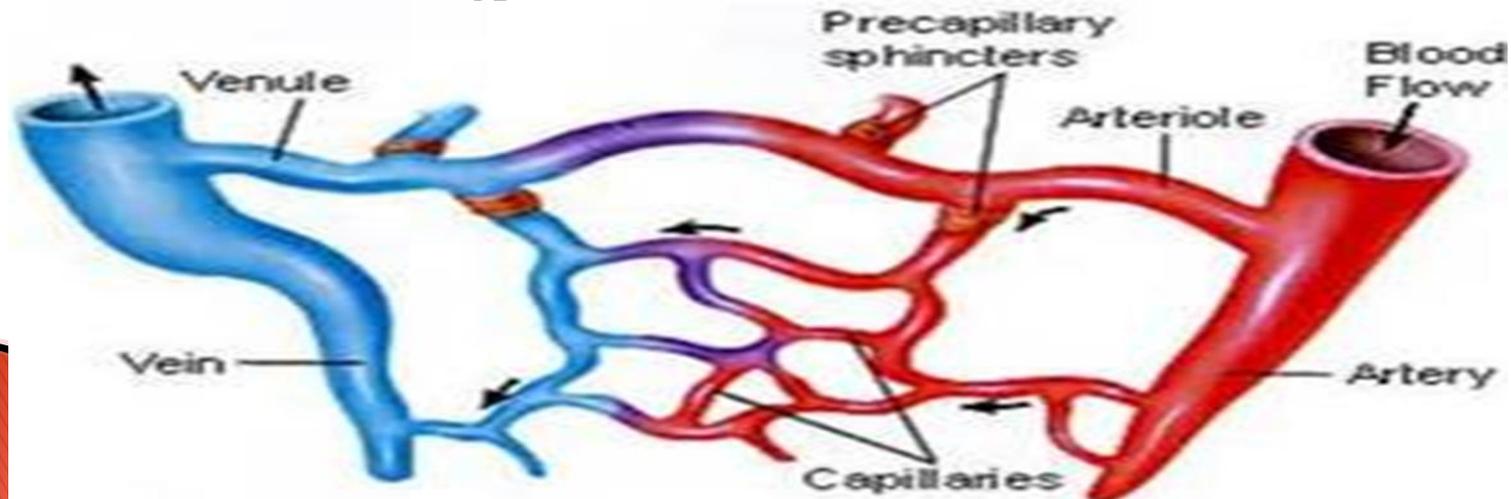
- ▶ Carry oxygenated blood from the lungs to the LA
- ▶ Only veins in the body that carry oxygenated blood



# Veins

## Venules

- ▶ Smallest branches of veins
- ▶ Connect with capillaries
- ▶ Venules join together &, becoming larger, form veins
- ▶ Veins continue to join together until they form the 2 largest veins

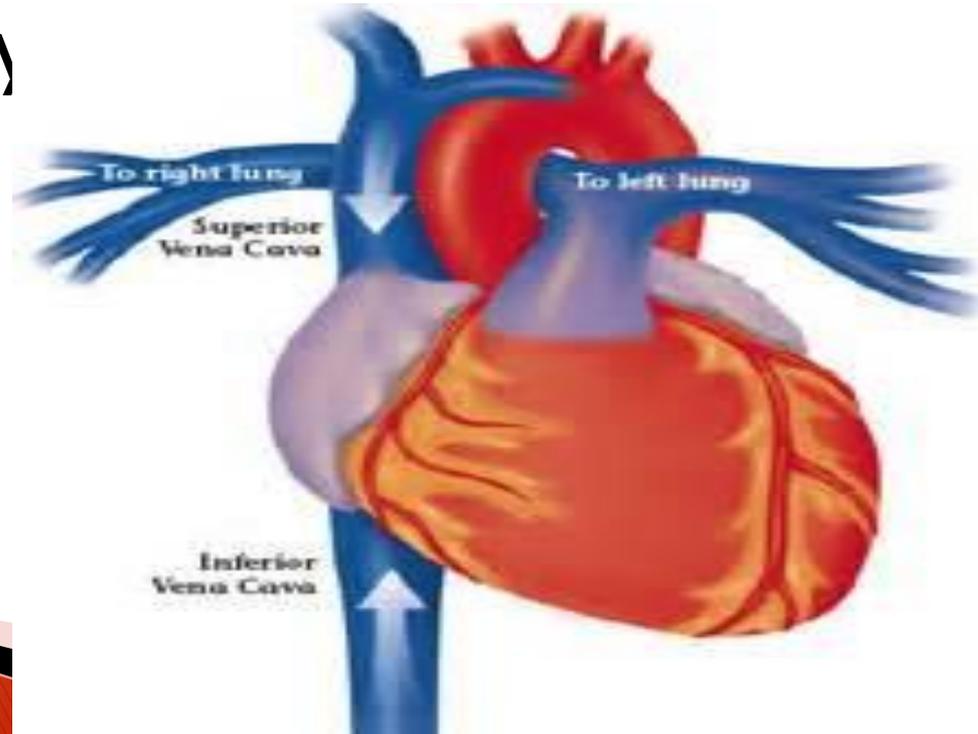


# Veins

2 largest veins=superior vena cava (SVC) & inferior vena cava (IVC)

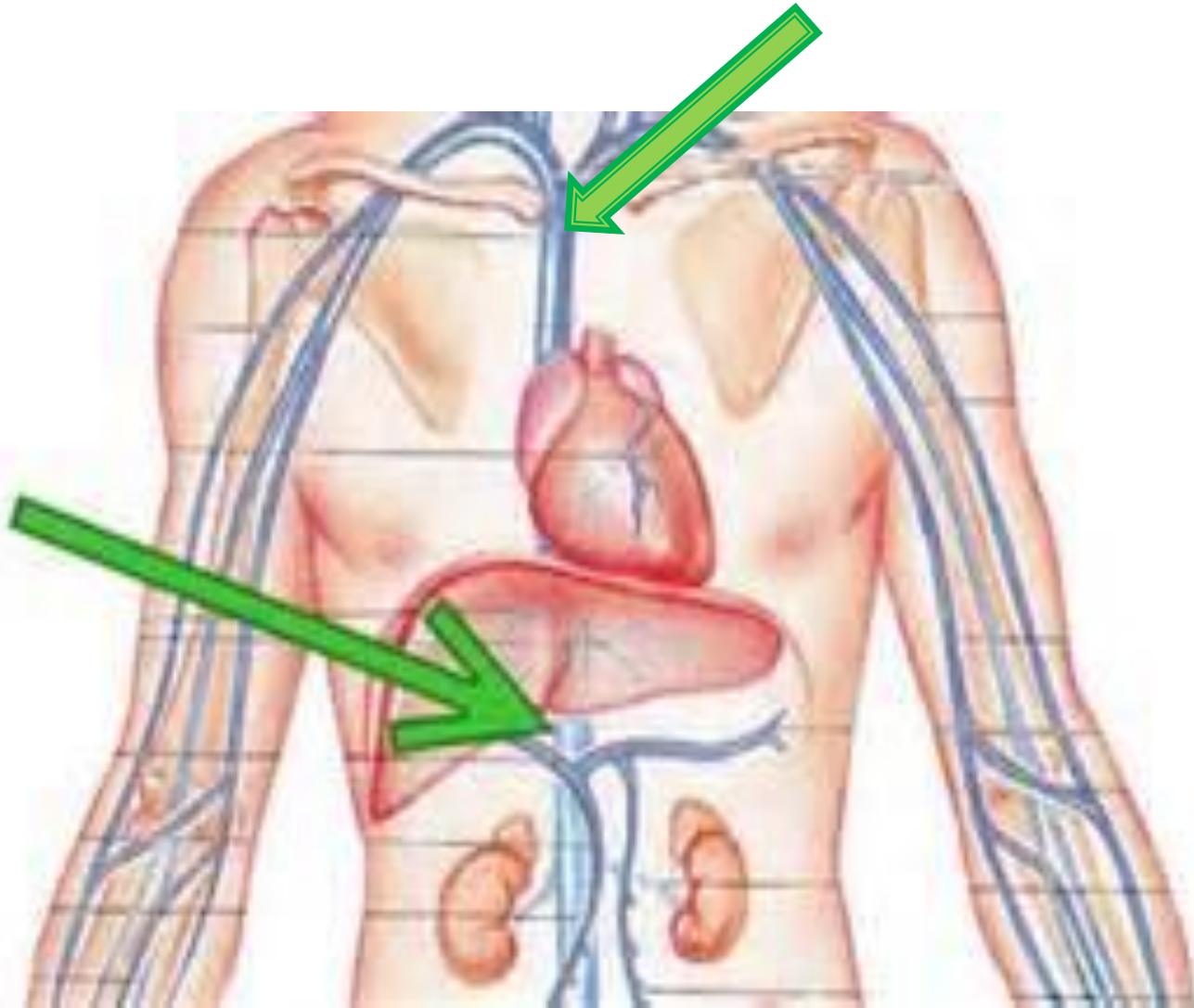
SVC brings deoxygenated blood from upper part of body to heart

IVC brings deoxygenated blood from lower part of body



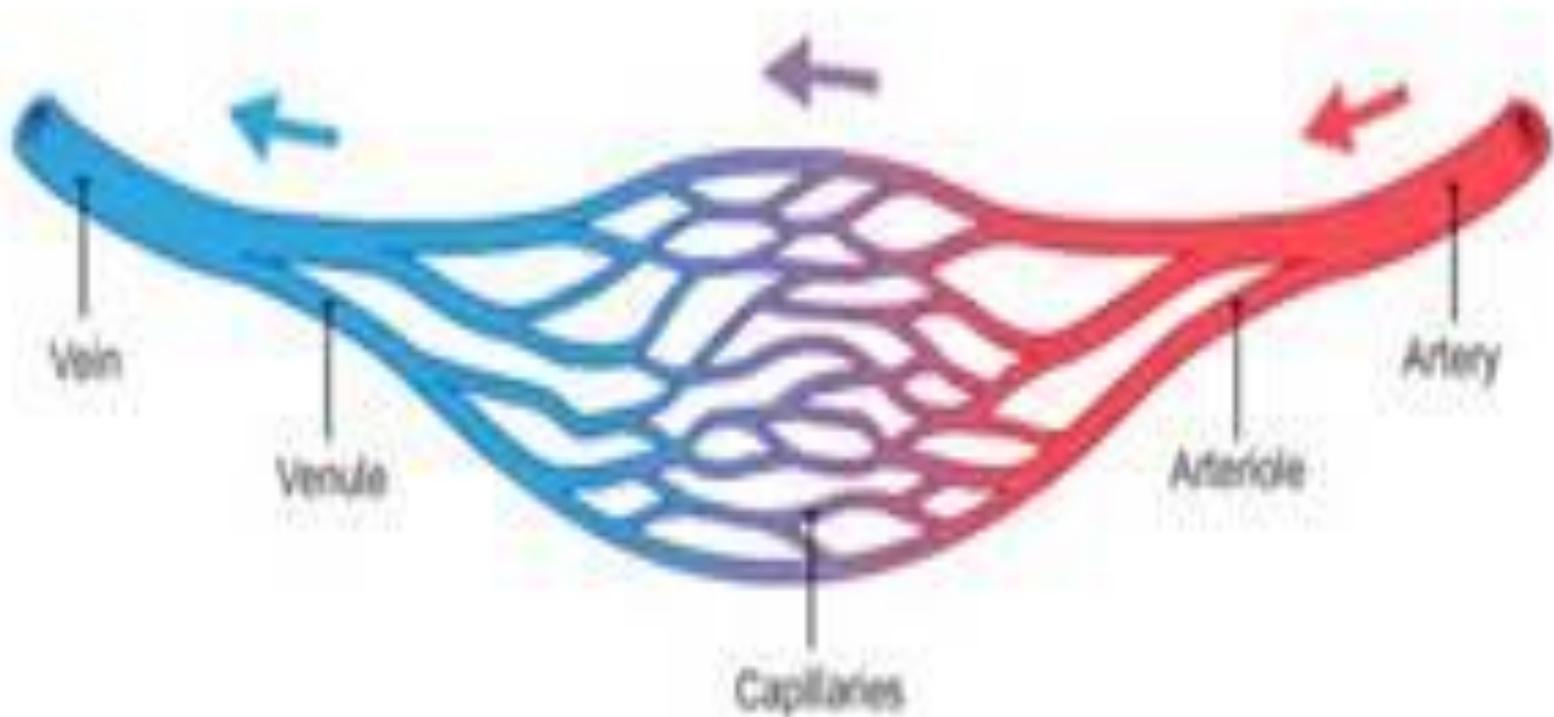
# SVC and IVC (watch to 2:35)

<https://www.youtube.com/watch?v=sl6yXy3u2sl>



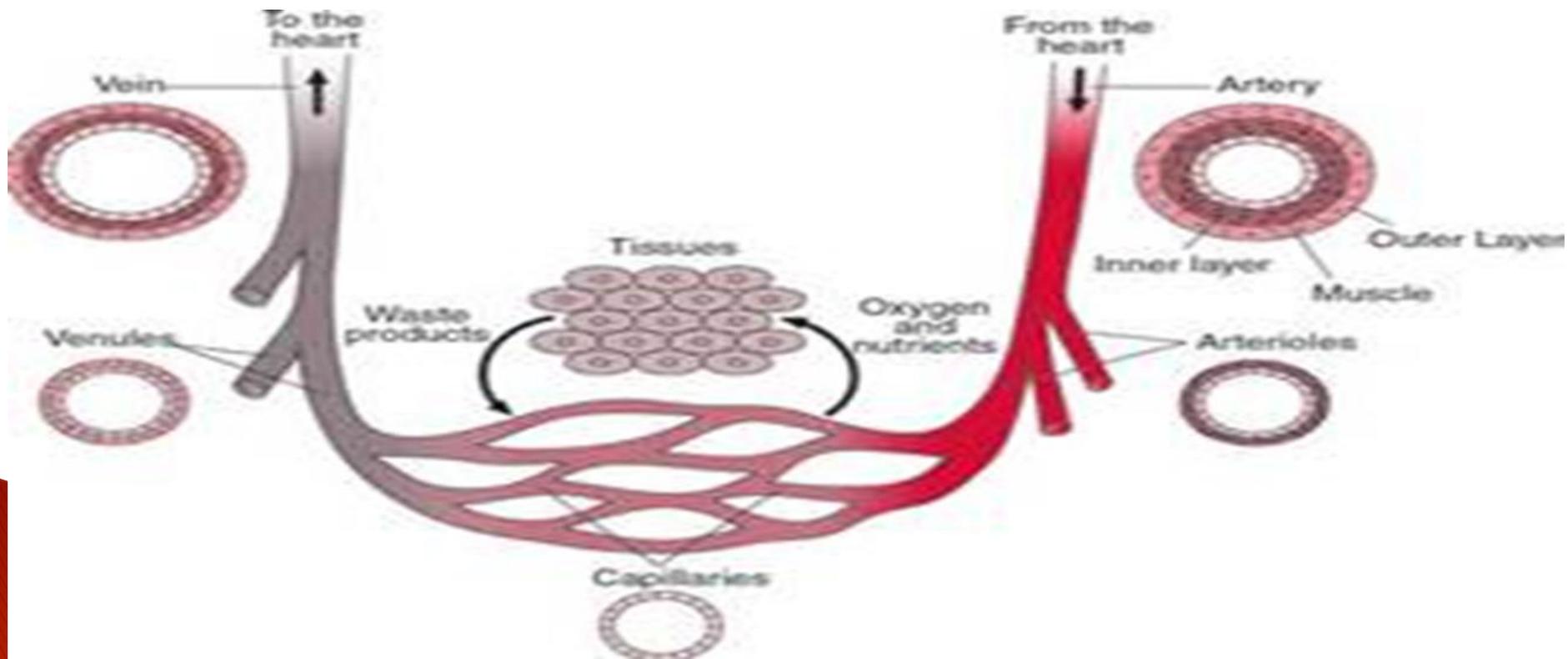
# Capillaries

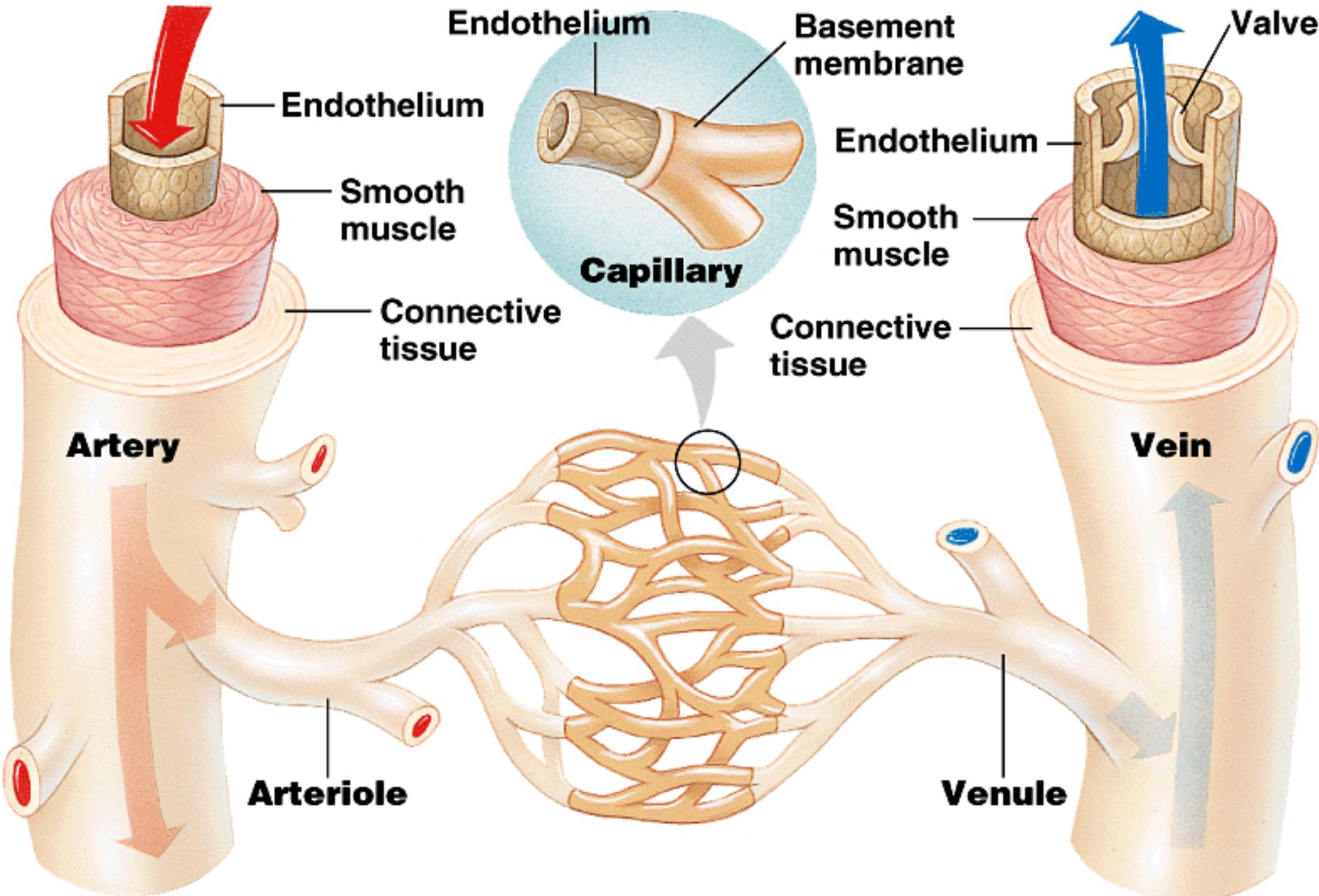
- ▶ Connect arterioles with venules
- ▶ Located in close proximity to almost every cell in the body



# Capillaries

- ▶ Have thin walls that contain only one layer of cells
- ▶ Thin walls allows for exchange of O<sub>2</sub> & nutrients to cells and CO<sub>2</sub> & metabolic wastes from cells







## Food for thought!!!

[https://www.youtube.com/watch?v=6kmmtBMGHvI&list=PLr3ppdrDHLqR5iUjCutB9ZPPn\\_qWY1TS&index=11](https://www.youtube.com/watch?v=6kmmtBMGHvI&list=PLr3ppdrDHLqR5iUjCutB9ZPPn_qWY1TS&index=11)

or if blocked by content keeper

[https://www.youtube.com/watch?v=T9Y4o\\_BqCOA](https://www.youtube.com/watch?v=T9Y4o_BqCOA)