Cardiovascular system

Anatomy Department

Beni-Suef University

Intended learning objectives (ILOs)

By the end of this lecture the student will be able to:

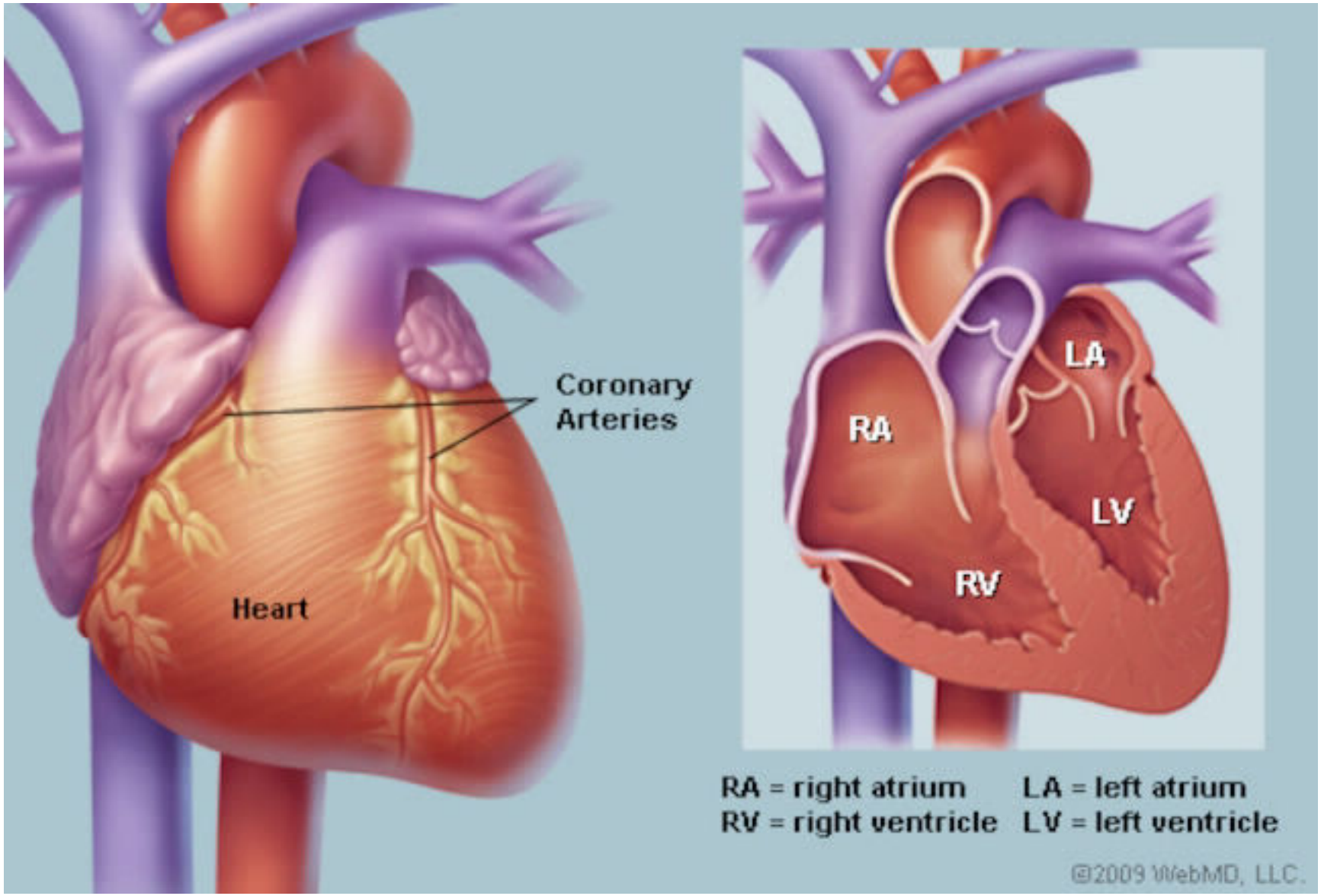
1. Describe the site, size, shape and location of the heart.
2. Discuss the external and internal anatomy of the chambers of the heart.
3. Identify the main arteries and veins of the human body.

Formation of CVS:

- The heart
- The blood vessels
- Blood elements

Heart:

- Site
- Size
- Shape
- Apex
- Chambers
- Coverings
- Arterial supply


Coronary Arteries
Heart
LA
RA
LV
RV
RA = right atrium
RV = right ventricle
LA = left atrium
LV = left ventricle
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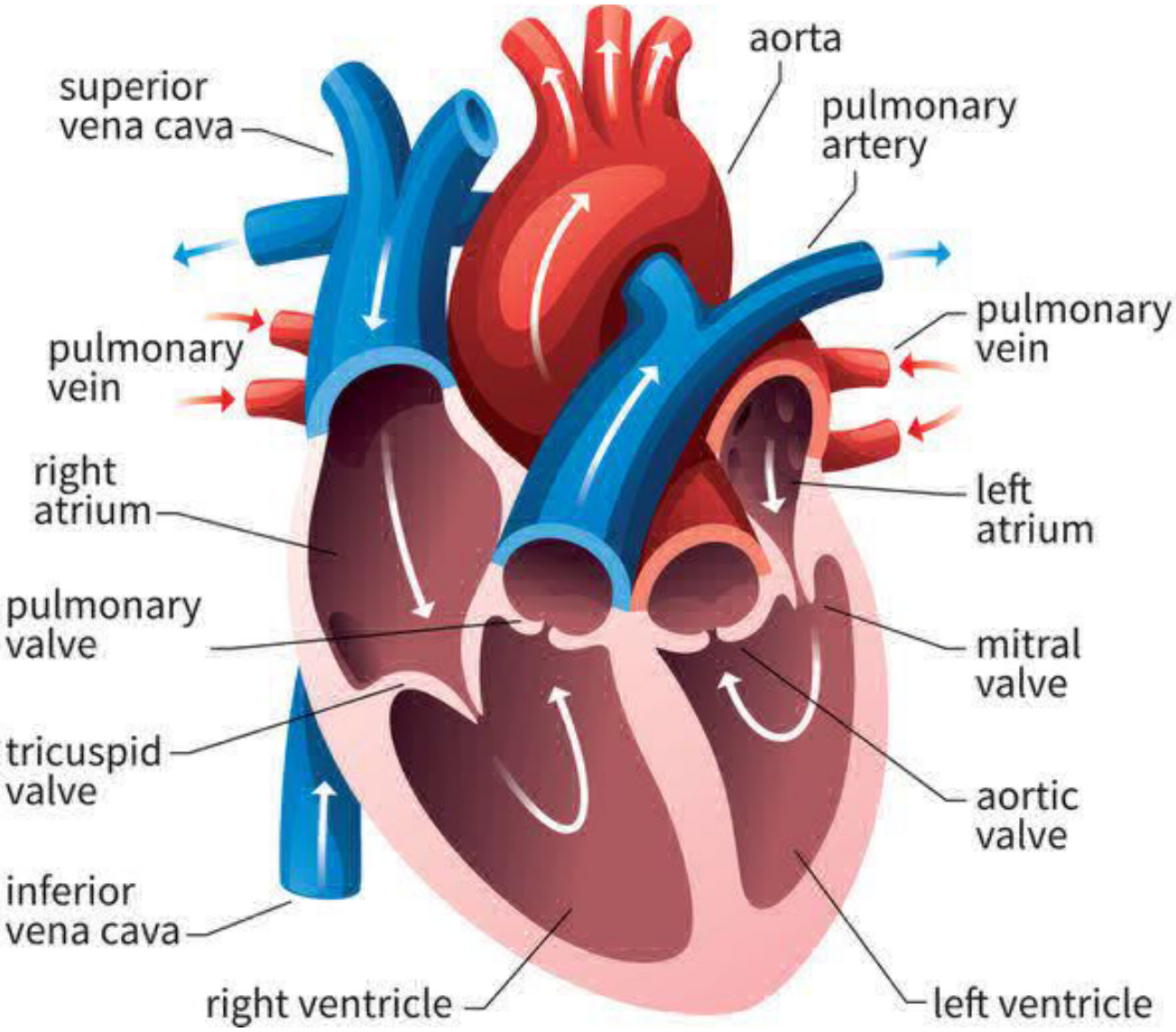
Body circulations:

1. The systemic circulation
2. The pulmonary circulation
3. The portal circulation


aorta
superior vena cava
pulmonary artery
pulmonary vein
pulmonary vein
right atrium
left atrium
pulmonary valve
mitral valve
tricuspid valve
aortic valve
inferior vena cava
right ventricle
left ventricle

Clinical correlations:

- Myocardial ischemia
- Myocardial infarction

The blood vessels

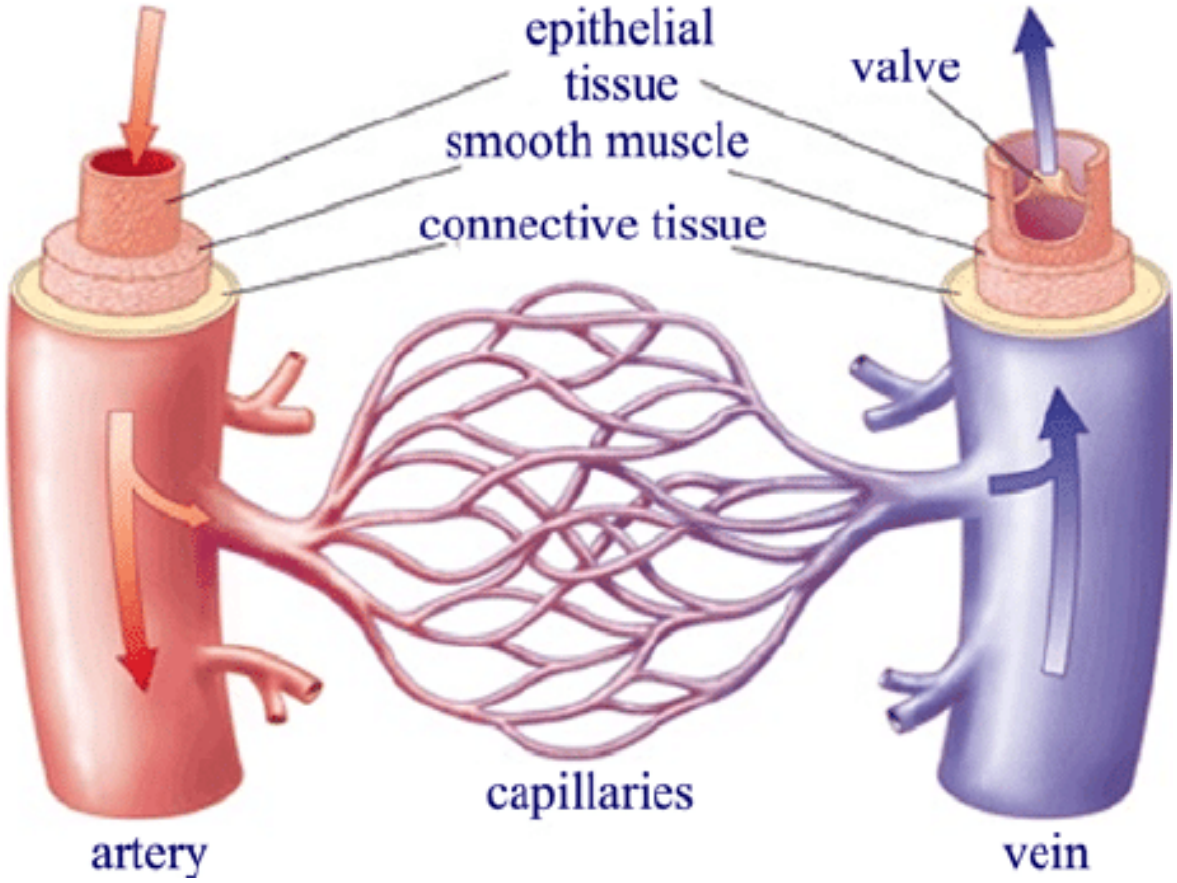
1. Arteries:
   - Thick elastic wall
   - Pulsate
   - Deep
   - No valves
   - Three types

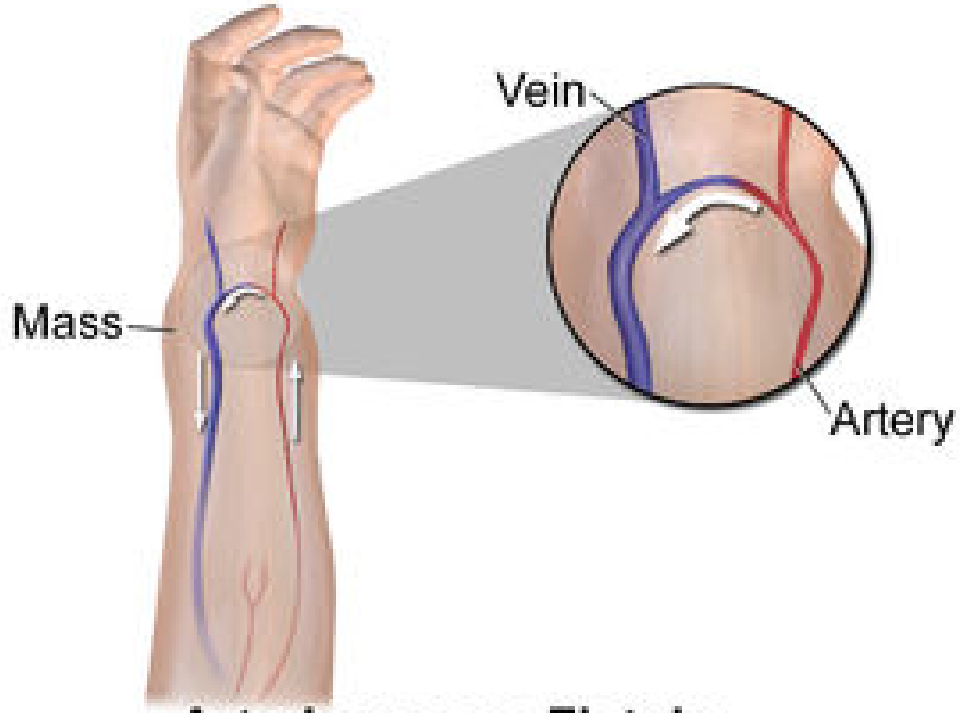
Tortuous arteries: facial, lingual, splenic & uterine

2. Veins:
    - Thin wall & wide lumen
    - Do not pulsate
    - Have valves
    - Three types
3. Capillaries

Connections between arteries and veins

- Capillaries
- Sinusoids
- Arteri-ovenous shunts

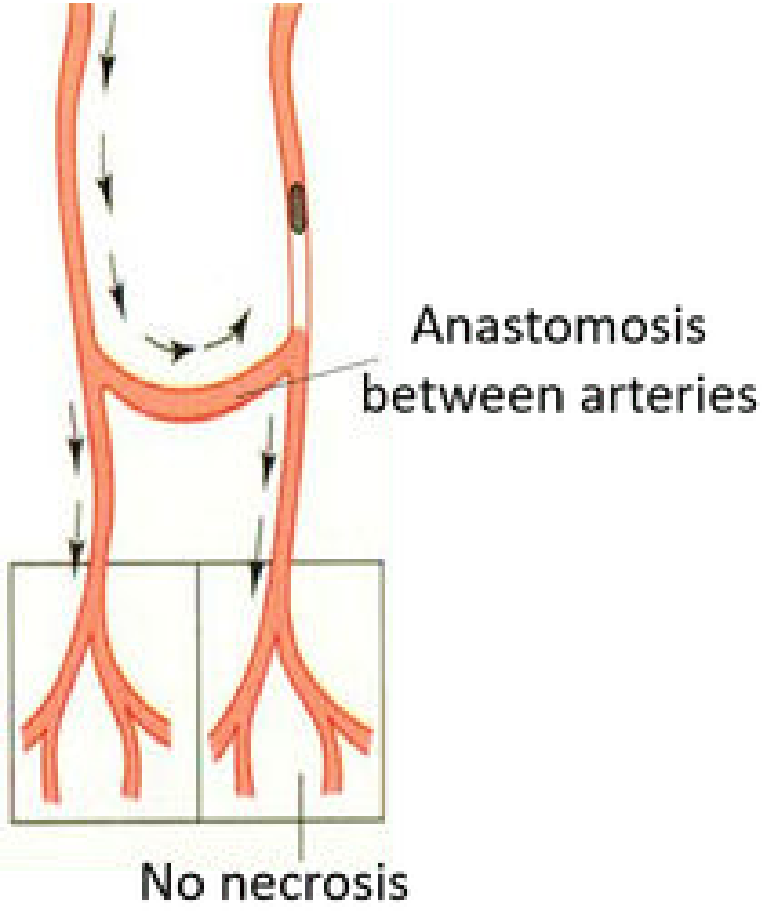

epithelial
tissue
smooth muscle
connective tissue
valve
capillaries
artery
vein



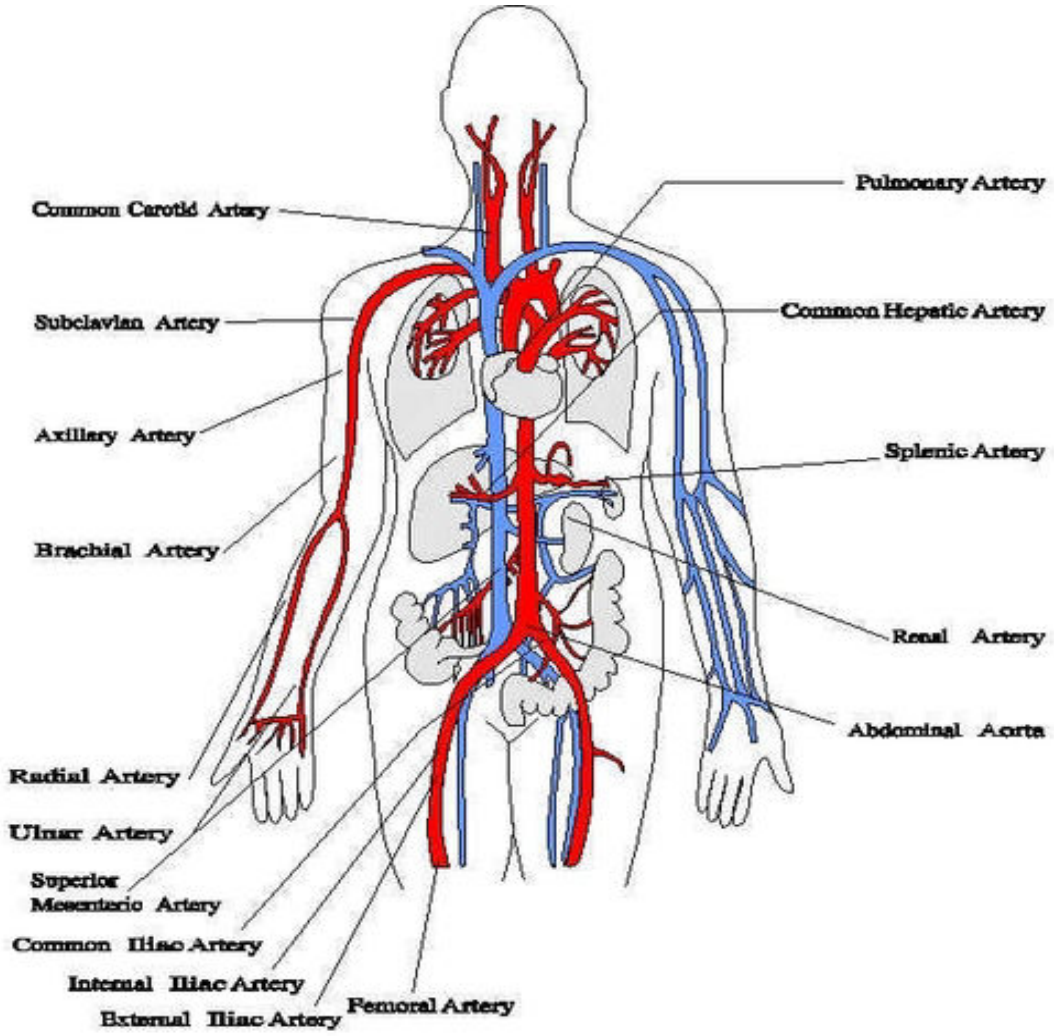
Arteriovenous Fistula

Arterial anastmosis

- Anastomosis by convergence
- Anastomosis between smaller arteries
- Anastomosis by end to end


Anastomosis
between arteries
No necrosis

Major arteries in the body



Quiz

1. The apex of the heart lies at the level of ……. intercostal space.

a. 3rd

b. 4th

c. 5th

d. 6th

2. All veins of the systemic circulation drain into

a. Superior vena cava
b. Inferior vena cava
c. Pulmonary trunk
d. Superior and inferior vena cava

3. The left atrium receives blood from

a. Liver
b. Body systems
c. Lung
d. Spleen

4. In which organ sinusoids are found

a. Liver
b. Stomach
c. Heart
d. Kidney

Thank you