

Ch. 15 Cardiovascular System

Heart & Blood Vessels



Heart Structure

- Coverings
 - Pericardium
 - Pericardial cavity
- Wall
 - Epicardium
 - Myocardium
 - Endocardium
- Chambers & Valves
 - Atria & ventricles
 - Tricuspid & bicuspid valves
 - Pulmonary & Aortic semilunar valves

Path of Blood- circulates through the heart

PULMONARY CIRCUIT

- TO & FROM THE LUNGS
- Deoxygenated blood (*from body*) enters right atrium
- Pumped to lungs
- Oxygenated blood (*from lungs*) enters left atrium

SYSTEMIC CIRCUIT

- TO & FROM THE BODY
- Oxygenated blood (*from lungs*) leaves left ventricle
- Pumped to body
- Deoxygenated blood (*from body*) enters right atrium

Path of Blood- circulates through heart muscle

CORONARY CIRCULATION

- Oxygenated blood delivered
- Coronary arteries
- Deoxygenated blood returned
- Cardiac vein
- Coronary sinus
 - Enlarged vein that empties into right atrium

Blood Vessels- Arteries & Arterioles

- Carry blood away from heart
- Strong & elastic
- Walls-
 - Endothelium
 - smooth muscle
 - connective tissue
- ANS innervation
 - Vasodilation
 - Vasoconstriction

Blood Vessels- Capillaries

- Very thin
- Single layer of epithelial cells
- Exchange between capillary blood & tissue fluid
 - Diffusion
 - Filtration
 - Osmosis

Blood Vessels- Veins & Venules

- Carry blood to heart
- Less muscle & elastic tissue
- Valves
 - Flaplike
 - Aid in returning blood to heart

Cardiac Cycle= one complete heartbeat

diastole= relax; systole= contract

ATRIA

- Atrial diastole
 - Relaxation
 - Blood flows in from vena cavae or pulmonary vein
- Atrial systole
 - Contraction
 - Pressure rises
 - Blood flows into ventricle

VENTRICLES

- Ventricle diastole
 - Relaxation
 - Blood flows in from atria
- Ventricle systole
 - Contraction
 - Pressure rises
 - Blood flows out to body or lungs

Heart Sounds= vibrations in tissues

- Both atria contract @ same time (same with ventricles)
- “lub”
 - Ventricular systole
 - Bicuspid & tricuspid valves closing
- “dup”
 - Ventricular diastole
 - Pulmonary & aortic semilunar valves closing

Blood Pressure= force exerted against the inside of arteries

SYSTOLIC PRESSURE

- Maximum pressure
- Ventricular contraction
- 120 mmHg
- *Pulse*
 - *Artery swells*

DIASTOLIC PRESSURE

- Minimum pressure
- Ventricular relaxation
- 80 mmHg
- *Pulse*
 - *Artery recoils*

