

## HEART ANATOMY

Location –

Size –

Pericardium –

1.

2.

Heart wall –

1.

2.

3.

Vessels returning blood to the heart:

1.

2.

3.

4.

Vessels carrying blood away from the heart:

- 1.
- 2.

Coronary vessels that supply the heart:

List several –

Four chambers:

- 1.
- 2.
- 3.
- 4.

Heart Valves:

Function –

- 1.

A)

B)

- 2.

A)

B)

Trace the pathway of blood through the heart:

## HEART PHYSIOLOGY

Functions of the heart:

1.

2.

3.

4.

## THE CONDUCTION SYSTEM OF THE HEART:

Autonomic Nervous System:

1.

2.

Intrinsic Conduction System:

Function –

SA Node –

AV Node –

AV Bundle –

Rt./lft. Bundle branches –

Purkinje fibers –

Sketch the path of the intrinsic conduction system in the heart:

How the Conduction System works:

1.

2.

3.

4.

5.

Sketch and label a normal EKG:

P –

QRS –

T –

## THE CARDIAC CYCLE:

What happens during the cardiac cycle?

Middle to late diastole –

Ventricular systole –

Ventricular (early) diastole –

## HEART SOUNDS

1.

2.

## CARDIAC OUTPUT

CO –

SV –

If a person has a heart rate of 80 bpm and a stroke volume of 75ml, what is their cardiac output?

Starlings law of the heart:

## REGULATION OF HEART RATE

Intrinsic –

Extrinsic –

Sympathetic NS -

Parasympathetic NS –

Blood pressure –

pH, CO, O2, -

ions –

Body Temp –

Tachycardia –

Bradycardia -



# HEART DISORDERS

**Angina** – To choke

**Pericardial effusion** – Accumulation of fluids in the pericardial cavity

**Acute pericarditis** – Inflammation of the pericardium caused by viral infections or injury

**Chronic pericarditis** – Increase in inflammatory exudate that continues beyond the acute period, usually associated with other forms of heart disease

**Constrictive pericarditis** – Fibrous scar tissue develops between the visceral and parietal layers of the serous pericardium, can interfere with heart function

**Ischemia** – Imbalance between blood supply and the demands of the heart for oxygenated blood

**Ischemic heart disease** – Term used to describe a group of closely related syndromes resulting from myocardial ischemia

**Stable angina** – Fixed coronary obstruction that produces a disparity between coronary blood flow and the metabolic demands of the myocardium

**Vasospastic angina** – Spasms of the coronary arteries that produce a disparity between coronary blood flow and the metabolic demands of the myocardium

**Acute myocardial infarction** – Ischemic death of myocardial tissue, heart attack

**Myocarditis** – Inflammation of heart muscle and conduction system without evidence of myocardial infarction

**Cardiomyopathies** – Group of disorders that affect the heart muscle – can be primary or secondary

Primary:

Dilated – Progressive cardiac hypertrophy and dilation and impaired pumping ability of one or both ventricles

Hypertrophic – involves excessive ventricular growth

Restrictive – Excessive rigidity of ventricular walls, reduces ventricular filling

Peripartum – Left ventricle dysfunction in the last month before delivery to 5 months postpartum

Secondary: Caused by other disease

**Endocarditis** – Rare life threatening infection of endocardial surface of the heart, including the valves, usually bacterial

**Rheumatic heart disease** – Multisystem inflammatory disease that follows group A streptococcal throat infection, causes chronic valvular disorders that produce permanent cardiac dysfunction, sometimes fatal heart failure years later

**Stenosis** – Narrowing of the heart valve orifice and failure of the valve leaflets to open normally, increasing blood flow 5-7X the resting volume, must be severe to cause problems, can be mitral or aortic

**Regurgitant (incompetent) valve** – permits backward flow of blood to occur when the valve should be closed, can be mitral or aortic

**Prolapsed valve** – degeneration of valve leaflets that cause them to become enlarged and floppy so that they balloon back into the left atrium during systole

**Heart failure** – Occurs when pumping ability of the heart becomes impaired, caused by cardiomyopathy

**Pulmonary edema** – Life threatening condition in which capillary fluid moves into the alveoli of the lungs, accumulation of fluids in lungs and respiratory airways, impairs gas exchange, shortness of breath, cyanosis, death

**Shock** – Decrease in tissue perfusion caused by loss or redistribution of blood

Hypovolemic – loss of blood volume

Obstructive – Embolism

Distributive – Loss of vessel tone

    Neurogenic – Decrease of sympathetic control

    Anaphylactic – Allergic response

    Septic - Infection