

Learning Objectives – Integrating Years 1 and 2

Below are essential concepts to be reviewed and integrated as you progress through the MHD Cardiovascular block.

FHB

Cardiovascular Physiology

There will be 3 questions on the November 21, 2011 MHD 2 exam developed from the following objectives:

- Explain the principle: heart rate x stroke volume = cardiac output.
- Define cardiac preload, afterload, contractility and heart rate, and how each determines stroke volume and cardiac output.
- Define the relationship between venous return, central venous pressure and cardiac function.
- Define mean arterial pressure and how to calculate it.
- Explain the relationship between blood flow, pressure and resistance as defined by Poiseuille's law.
- Explain the renin-angiotensin-aldosterone mechanism of blood pressure (volume) regulation.
- Explain the factors that determine myocardial oxygen supply and demand, and how the balance of these factors relates to the development of ischemia.
- Describe coronary blood flow in terms of diastolic arterial pressure and why the endocardium is at risk for ischemia.

SHB

Cardiovascular Anatomy

There will be 2 questions on the November 21, 2011 MHD 2 exam developed from the following objectives:

- Identify the major anatomical features of each chamber of the heart and septa that separate them and explain their functional significance.

- Describe the structure and position of the atrioventricular, pulmonary and aortic valves.
- Describe the origin, course and main branches of the left and right coronary arteries.
- Identify the location of the SA and AV nodes. Explain the anatomical course of the spread of excitation through the chambers of the heart
- Identify the developmental basis for atrial and ventricular septal defects and the transposition of the great vessels