Lecture notes for – Wednesday October 23, 2002

Outline

• Heart structure: chambers, valves, vessels
• Circulatory systems

Heart Function

• HEART RATE = beats/minute
  — At rest: 75/min (100,000/day)
• STROKE VOLUME = ml blood/beat
  — At rest: 70ml/beat
• CARDIAC OUTPUT = ml/min
  — At rest: 5.25 l/min (8000 l/day)

Heart Wall

• Pericardium (fibrous & serous)
• Epicardium = visceral pericardium
• Myocardium = involuntary muscle
• Endocardium - inner lining of the heart chambers

Heart Chambers (x4)

• 2 atria - left & right
  — Separated by interatrial septum
  — Thin walls
• 2 ventricles - left & right
  — Separated by interventricular septum
  — Thicker walls (left is thickest)

Great Vessels of the Heart

• Superior & inferior vena cava
  — deoxygenated blood
• Left & right pulmonary arteries
  — deoxygenated blood
• Left & right pulmonary veins
  — oxygenated blood
• Aorta carries oxygenated blood

**Remember**
• Arteries carry blood AWAY from heart
• Veins carry blood TO heart

**Valves of the heart (x4)**
• Atrioventricular (AV) valves
  — Tricuspid valve - RIGHT A/V
  — Bicuspid valve/ “mitral valve” - LEFT A/V
  — Prevent BACKFLOW of blood from the ventricles to atria when ventricles CONTRACT

• Semilunar valves
  — Pulmonary SV - between right ventricle & pulmonary artery
  — Aortic SV - between left ventricle and aorta
  — Prevent BACKFLOW from blood vessels back into ventricles