Cardiovascular System

Controls

- Medulla
  - autonomic nervous system
    - sympathetic
    - parasympathetic
- SA (sinoatrial) node = pacemaker
- AV (atrioventicular) node
- AV bundle (Bunde of His)
- L&R Bundle Branches
- Purkinje Fibers
- Muscle fibers
  - between each one intercalated disks
  - syncytium - created by disks - all fibers fire at once

Pulse

- beats per minute
- brady cardia < 60
- tachy cardia > 60

Parts

- Lympthatic System
- Vessels
- Blood
- Heart

heart (cardium)

- layers
  - endo
  - myo
  - epi
  - peri
- serous flood in between epi and peri
- parts
  - halves
    - right
    - left
  - each half top and bottom
    - atrium
      - right
        - superior venacava
        - inferior venacava
        - down to ventricle through tricuspid valve
      - left
        - receives from pulmonary veins
        - passes to ventricle through bicuspid (mitral) valve
    - ventricle
      - right
        - receives through tricuspid valve
        - out through pulomonic semilunar valve
        - to pulomary arteries to lung
      - left
        - out via aortic semilunar valve
        - to aorta
        - to tissues

- divided by septum
- chordae tendinae
  - prevent valves from blowing in when heart contracts
- foramen ovale
  - whole in septum when in the womb
- blood supply
  - first blood of of ascending aorta
  - coronary arteries
  - heart capillaries
  - coronary veins
  - coronary sinus
  - right atrium

Cardiac Cycle

- Diastole = low pressure
- Systole = high pressure
- Sounds
  - extrasystole = extra beat
  - murmur = any abnormal sound
  - first - tri and bicuspid, ie. atrioventricular valves
  - second - pslv and aslv, ie. semilunar valves

Paths

- Pulmonic Circuit
  - heart and lung
- Systemic Circuit
  - heart and body

electro cardio gram

- p wave - atrial depolarization
- q r s complex - ventricular depolarization (atrial repolarization)
- t wave - ventricular repolarization

Blood

Whole Blood

- Formed elements
  - Platelets
  - white blood cells
  - red blood cells
- Plasma
  - clotting factors
  - serum
    - water
    - enzymes
    - pigaments
    - hormones
    - antibodies
    - electrolytes
- trasport nutrients
- to and from tissue
- functions
  - protection
  - transport
  - regulation
  - immune
- PH = 7.4
  - to high = alkylosis

- OK range 7.35-7.45
- to low = acidosis
  - too little air
- types
  - A
    - receives from A and O
  - B
    - receives from B and O
  - AB
    - receives from A, B, AB and O
  - O
    - receives only from O
- Rh Factor
  - Dantingen

Spleen

- filters blood and destroy old blood
- in youth creates blood
- works to fight antogens

Function

- Transport
  - Nutrients
  - Waste