







The Pump

- Right Heart
- •Pumps blood to the lungs
- •Right atrium \rightarrow to the right ventricle •Right ventricle \rightarrow to the lungs
- Left Heart
- Pumps blood to the body
- •Left atrium→ to the left ventricle •Left ventricle→ to the body









Conduction System

- SA Node initiates heart's electrical activity
 Impulse spreads through the atria causing atrial
 contraction
 P wave
- Electrical activity continues to the AV Node
 Allows complete atrial contraction
- Impulse travels through the ventricles
 Bundle of HIS and Purkinje Fibers
 Allows ventricular contraction
- Ventricular repolarization occurs

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Heart Failure

- Decreased blood leaving the heart •DECREASED PERFUSION
- Body tries to compensate
- Until it can't.....



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Heart Failure

- Usually results from an acute exacerbation of an underlying problem
- Types of heart failure •Low output (forward) failure
 - Inability to pump blood forward from the left ventricle to systemic circulation
- Right or Left congestive (backward) failure • Left-side d CHF→ pulmonary edema, crackles • Right-side d CHF→ ascites, jugular d istention
- · Cardiac output is reduced due to heart failure

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Heart Failure

- Congestive Heart Failure
- •Na⁺ and H₂O retention
- •Fluid overload d/t increased volume
- Pulmonary Edema → fluid collection within the lungs
 Pleural Effusion → fluid collection around the lungs (pleural

space) •Ascites → abdominal fluid

Heart Failure

- WHY does the heart fail?
- Cardio my opathy
- Valvular Disease
- •Pericardial Disease
- Conduction System Failure
- Congenital Defects



















Cardiogenic Shock

- Primary cardiac problem is responsible for inadequate systemic perfusion
 Metabolic needs of the body are not met due to cardiac dysfunction
- Confirmed when a patient has "poor cardiac output and evidence of tissue hypoxia in the presence of adequate intravascular volume"

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The Physical Exam

Perfusion Parameters

Mucous Membranes

•Color •Capillary RefillTime (CRT) •Peripheral Pulses •Rate and quality •Deficits, bounding, weak



The Physical Exam

- Auscultation
- •Rate, rhythm, character
- •Pulses should be synchronous
- Precordial thrill







The Physical Exam

- Auscultation
- •Rhythm
- •Regular vs.lrregular
- First and second heart sounds 2nd sound is the end of systole Closure of aortic and pulmonic valves ("DUB")
- Atrial contraction occurs Diastole







Treatment Interventions

- Oxygen, oxygen, more oxygen
- Diureti cs
- Increase elimination of fluid
- Reduces Na+ and K+ reabsorption, decreases H2O reabsorption
- Furose mide, Spiro nalactone
- Vasodilators
- Im prove cardiac emptying Decrease after load Amlodipine, En alapril, Nitro prusside









