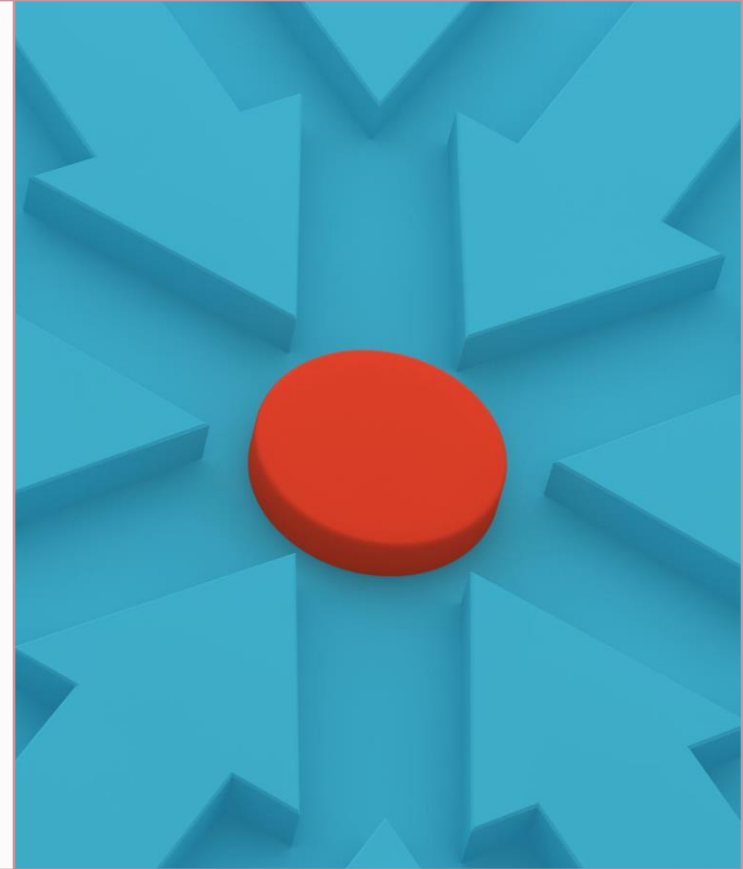


Nursing Care of Patients with Heart Failure



Objectives

- Describe pathophysiology of left and right-sided heart failure
- Define acute heart failure
- List causes of acute and chronic heart failure
- Identify signs and symptoms of acute and chronic heart failure
- Plan nursing care for patients undergoing diagnostic tests for heart failure
- Explain medical treatments used for acute and chronic heart failure
- Plan nursing care for acute and chronic heart failure
- Plan teaching for patients with heart failure and their families





Pathophysiology of Left- and Right-Sided Heart Failure

Amount of blood returned to heart is more than ventricles can handle

Heart no longer functions effectively

Heart failure can be result of

Systolic (contraction) dysfunction

- Ventricle unable to contract properly

Diastolic (relaxation) dysfunction

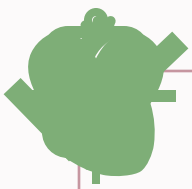
- Ventricle unable to relax and fill properly

<https://www.youtube.com/watch?v=gCnPe9o5tuw>

LEFT - LUNG
RIGHT - REST

Origin of Heart Failure | Nursing Mnemonic | LEFT LUNG - RIGHT REST

460 views · 27 DISLIKE SHARE DOWNLOAD THANKS SAVE ...



Pathophysiology of Left- and Right- Sided Heart Failure

Heart Failure (HF) can affect one of both ventricles

Left-sided HF

Typically weakens first
Greatest workload

Right-sided HF

Can lead to Left sided HF

Biventricular HF

Left and Right sided HF

Since ventricles work
together

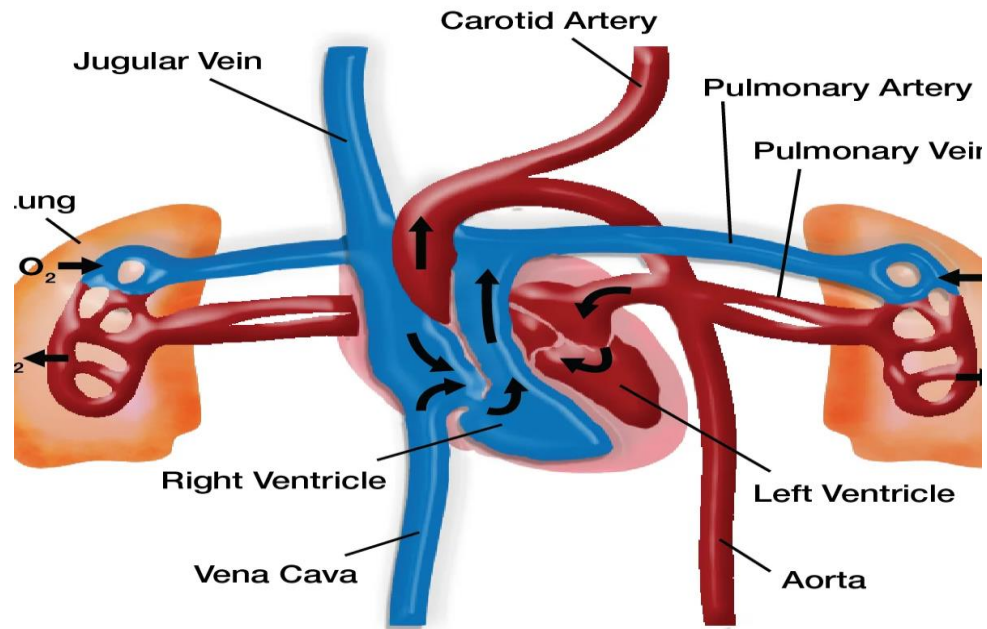
Failure of one will lead to
failure in other

Left-sided Heart Failure-Causes

- Hypertension
 - **Major cause**
- Aortic Stenosis
- Cardiomyopathy
- Coarctation of aorta
- Infection of heart muscle
- Myocardial infarction
- Mitral regurgitation



This Photo by Unknown author is licensed under [CC BY-SA-NC](#).



Left-Sided Heart Failure- How it Occurs

Blood backs up first from left ventricle

Backs up into left atrium

Backs up to pulmonary veins and lungs

Increases pulmonary pressure

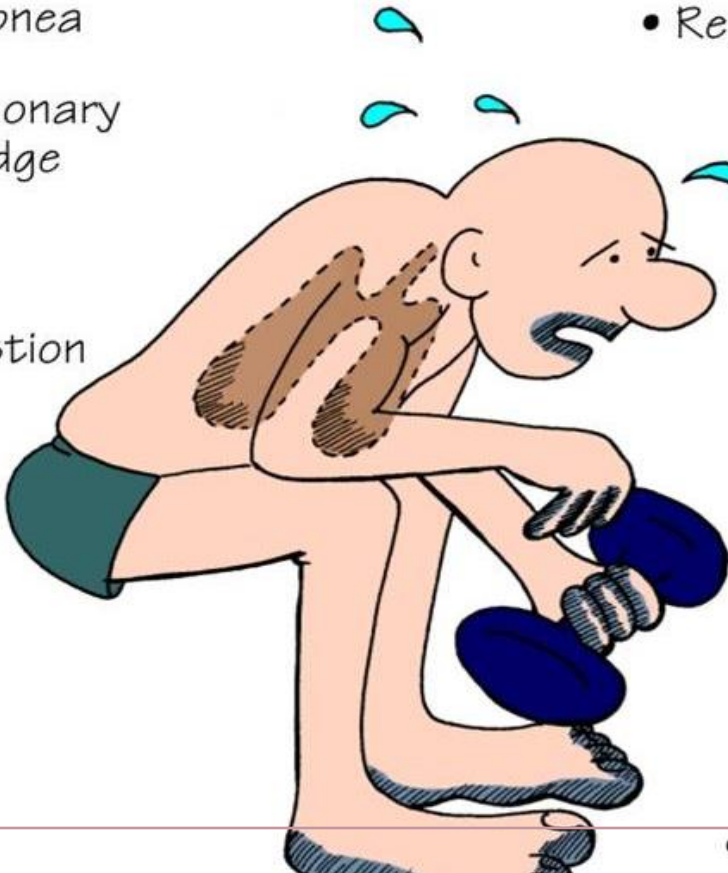
Pressure causes fluid to move to alveoli

Reduces oxygen exchange

- Shortness of breath
- Cyanosis
- Acute pulmonary edema
- Requires **immediate** treatment

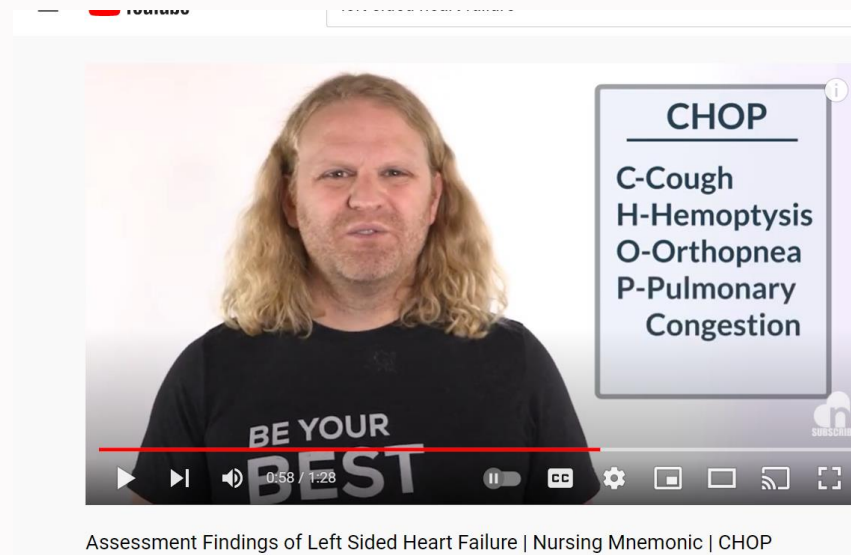
Left Sided Heart Failure-Think L for Lungs

LEFT SIDED ♥ FAILURE

- 
- Paroxysmal Nocturnal Dyspnea
 - Elevated Pulmonary Capillary Wedge Pressure
 - Pulmonary Congestion
 - Cough
 - Crackles
 - Wheezes
 - Blood-Tinged Sputum
 - Tachypnea
 - Restlessness
 - Confusion
 - Orthopnea
 - Tachycardia
 - Exertional Dyspnea
 - Fatigue
 - Cyanosis

Assessment Findings of Left Sided Heart Failure-Nursing Mnemonic CHOP

<https://www.youtube.com/watch?v=SaV5G3BfD94>



Right-Sided Heart Failure-Causes

- Conditions that cause the right ventricle workload to increase
- Left-sided HF
 - Major Cause
- Pulmonary hypertension
- Pulmonary valve stenosis
- Atrial septal defect



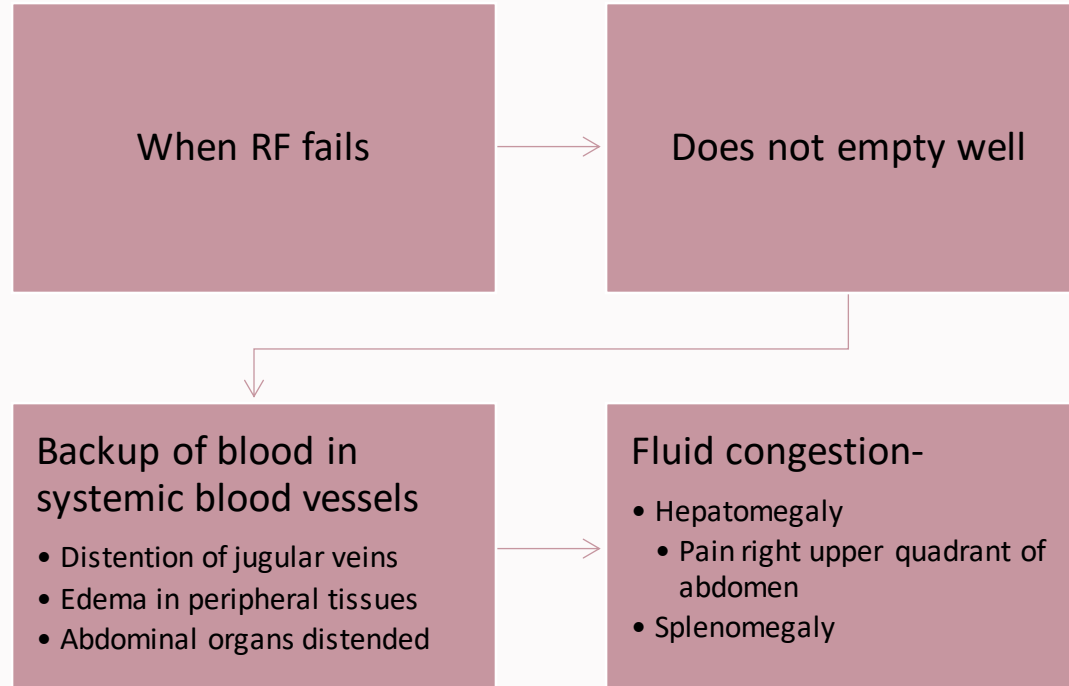
Right-Sided Heart Failure

Think R for Rest of Body

Cor pulmonale (ventricle hypertrophies or fails from disorder of lung)



Right-Sided Heart Failure





Define Acute Heart Failure

Acute heart failure-is called
Pulmonary Edema

Sudden, severe
fluid congested
within lung alveoli

Reduced
oxygen
exchange
Life
threatening

Can occur when heart is
severely stressed-left
ventricle fails

Define Acute Heart Failure-Signs and Symptoms

- **Signs/Symptoms**

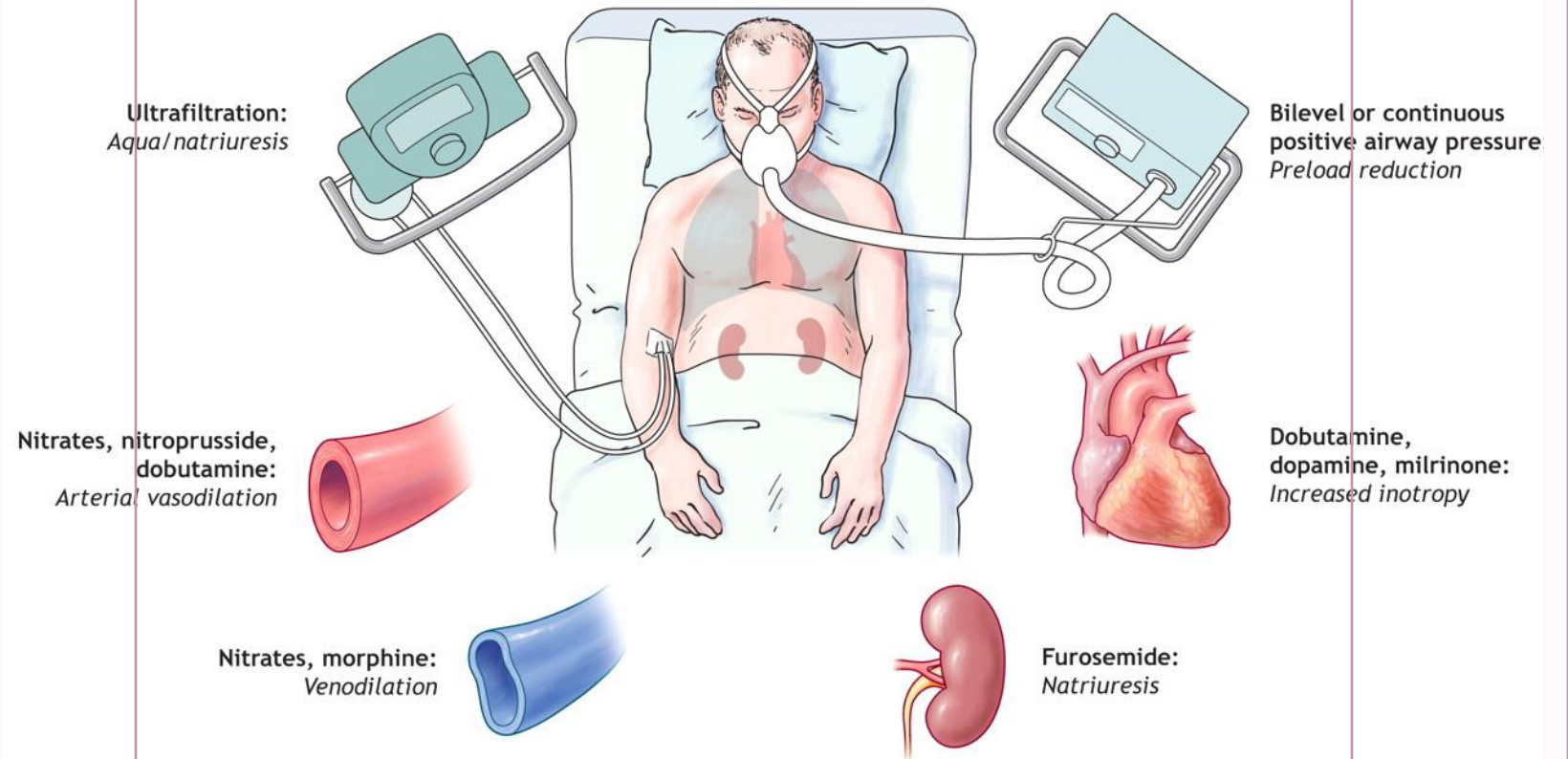
What signs and symptoms would you expect to see with Acute Heart Failure/Pulmonary Edema?

02



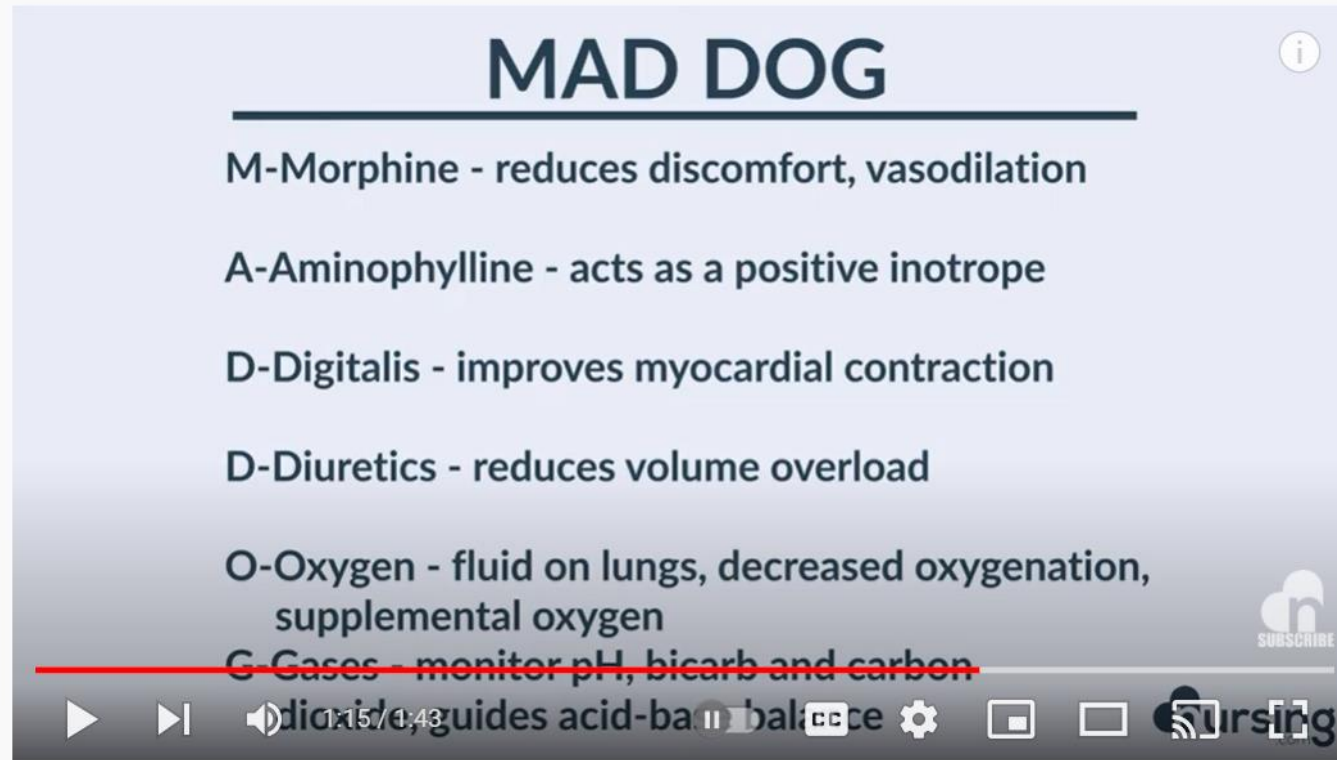
Acute Heart Failure/Pulmonary Edema- Treatment

- Reduce workload on left ventricle
- Semi-fowler or fowler position
- Psychosocial care
 - Reduce anxiety
- Give oxygen
- Medications
 - Reduce anxiety
 - Reduce fluid and sodium
 - Strengthen cardiac contractions
 - Reduce arterial pressure



Therapeutic Management for Patients with Pulmonary Edema MAD DOG

<https://www.youtube.com/watch?v=7zHm0PQSK3A>



MAD DOG

- M-Morphine - reduces discomfort, vasodilation
- A-Aminophylline - acts as a positive inotrope
- D-Digitalis - improves myocardial contraction
- D-Diuretics - reduces volume overload
- O-Oxygen - fluid on lungs, decreased oxygenation, supplemental oxygen
- G-Gases - monitor pH, bicarb and carbon dioxide, guides acid-base balance

1:15 / 1:43

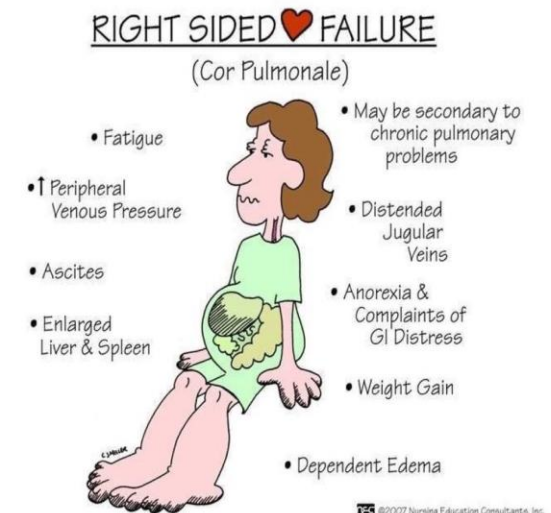
YouTube player controls: play, next, volume, full screen, and other standard controls.

Therapeutic Management for Patients with Pulmonary Edema | MAD DOG | Nursing Mnemonic

Signs and Symptoms of Chronic Heart Failure

- **Right-sided HF**
- **Think "Rest" of body**
 - Ascites
 - Edema
 - Fatigue
 - Gastrointestinal
 - Hepatomegaly
 - Jugular vein distention
 - Splenomegaly
 - Weight gain
 - Tachycardia

- **Left-sided HF**
- **Think "Lungs"**
 - Crackles, wheezing
 - Cyanosis
 - Cough
 - Dyspnea
 - Nocturia
 - Orthopnea
 - Tachypnea
 - Tachycardia

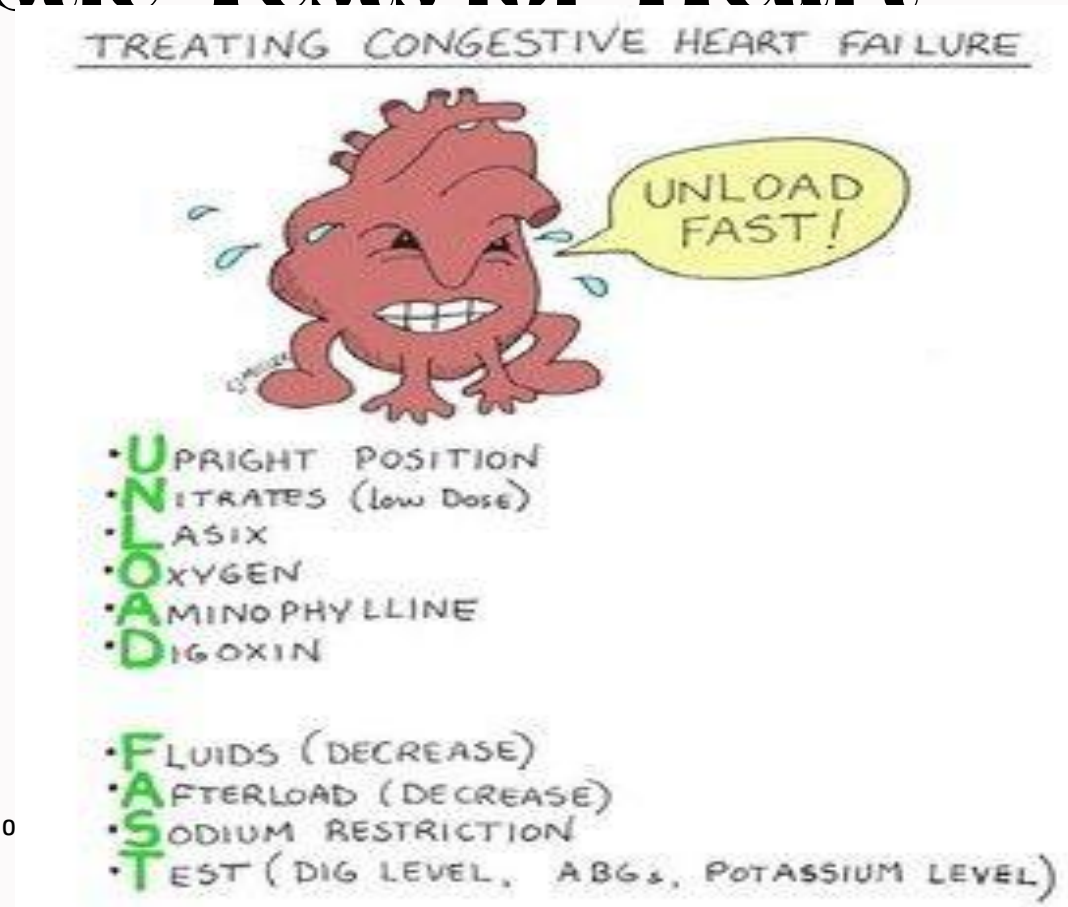


Plan Nursing Care for Patients Undergoing Diagnostic Tests for Heart Failure

- Serum laboratory tests
 - Evaluate contributing factors
 - Serum blood urea nitrogen and creatinine-renal failure
 - Elevated liver enzymes and ferritin
 - Serum B-type natriuretic peptide (BNP)-elevation indicates HF is severe
 - BNP is made by heart to regulate blood volume to reduce cardiac workload
- Chest x-ray
- ECG-arrhythmias may contribute to HF-Atrial fibrillation
- Echocardiogram
- Cardiac Catheterization and angiography

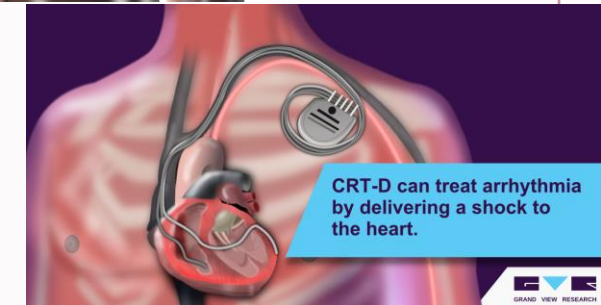
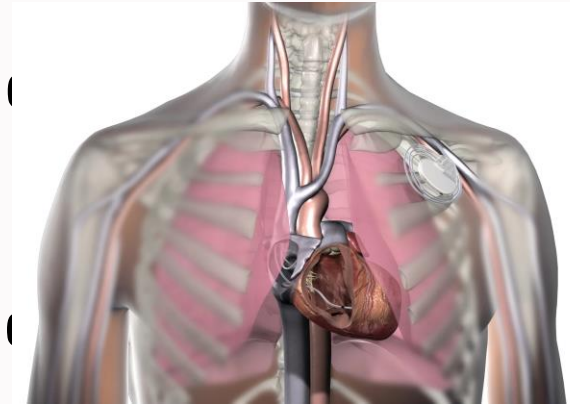
Plan Nursing Care for Patients Undergoing Diagnostic Tests for Heart Failure

- No cure
 - Treat underlying cause
- Increase strength of heart's contractions
 - Water and sodium balance
 - Decrease heart workload
 - Oxygen therapy
 - Activity tolerance/cardiac rehabilitation
 - Medications to improve symptoms
 - ACE inhibitors-control HTN
 - Beta blockers-improve cardiac output
 - Angiotensin receptor inhibitors-reduce fluid and cause vaso
 - Diuretics-reduce fluid



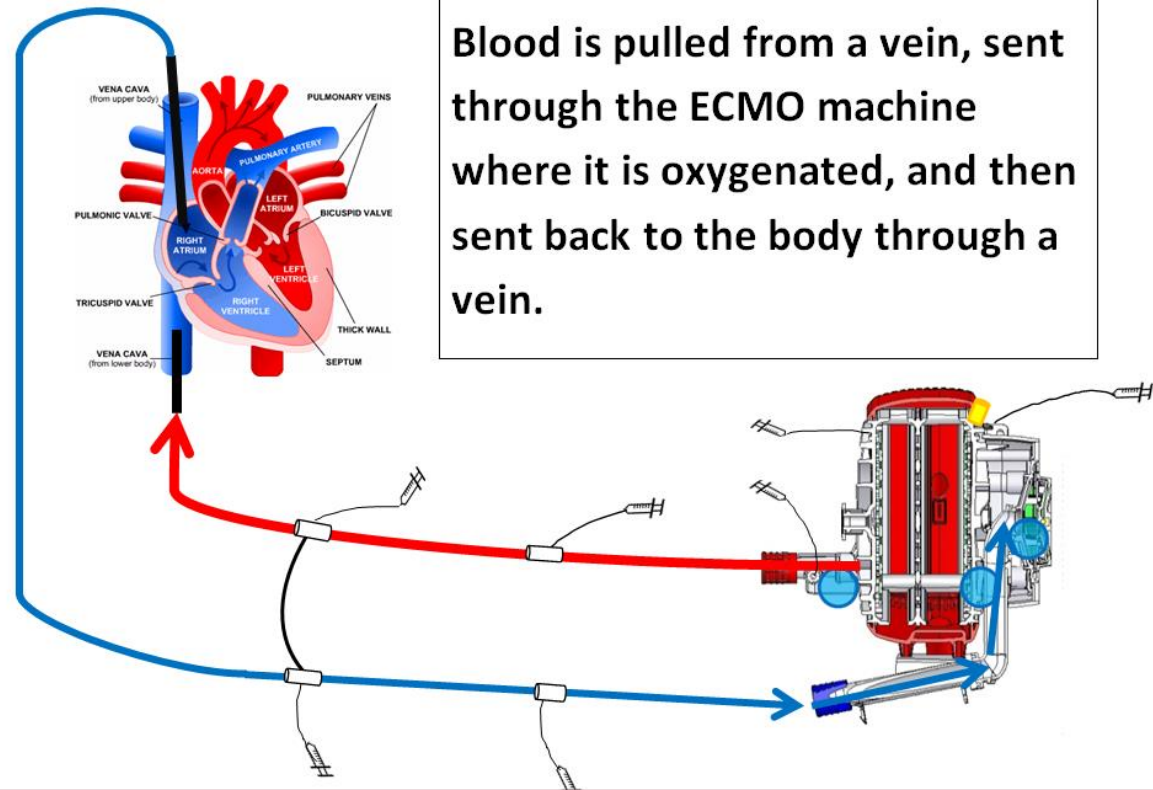
Explain Medical Treatments Used for Acute and Chronic Heart Failure

- With HF-both ventricles may not beat at same time
 - Reduces cardiac output
- Pacemakers and Implantable Cardioverter Defibrillators
 - Cardiac Resynchronization Therapy (CRT)
 - Restores normal ventricle rhythm with each other



Explain Medical Treatments Used for Acute and Chronic Heart Failure

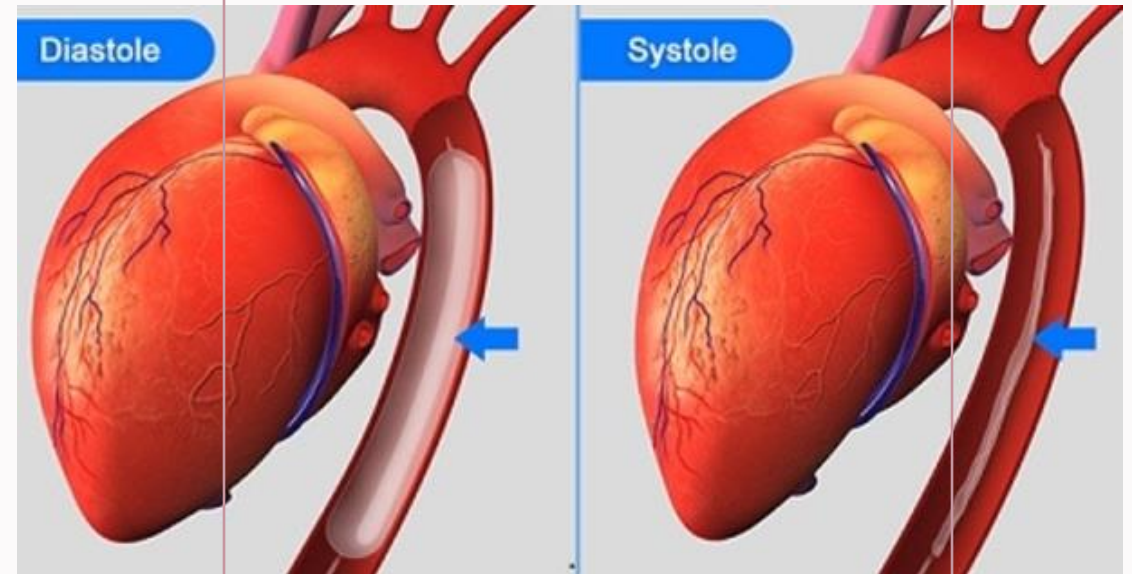
- **ECHMO-(Extracorporeal Membrane Oxygenation)**
 - Provides oxygenation and remove CO₂



Explain Medical Treatments Used for Acute and Chronic Heart Failure

- Intra-aortic balloon pump (IABP)
 - Balloon catheter inserted into femoral artery to aortic arch
 - Attached to computer sensing ventricular contraction
 - When heart is relaxed (diastole) balloon is inflated sending blood to coronary arteries
 - Used for several days in ICU

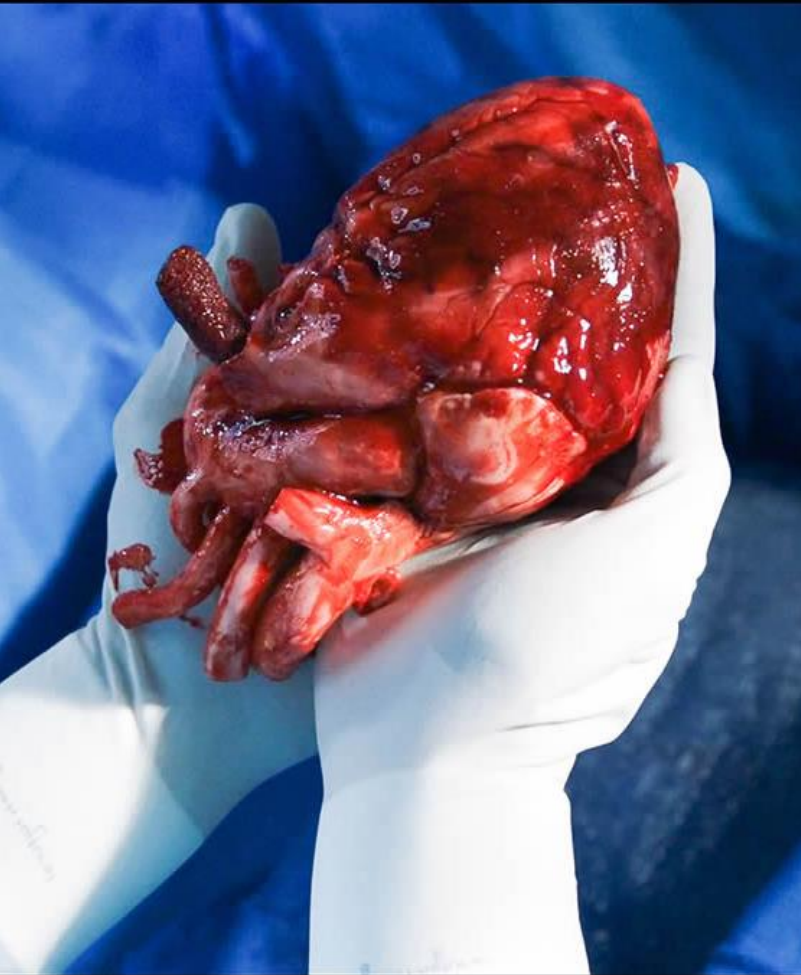
<https://www.youtube.com/watch?v=cplLWs1Mw2E>



Explain Medical Treatments Used for Acute and Chronic Heart Failure

- Ventricular assist devices-Left , Right or both Ventricular Devices (LVAD, RVAD)
 - Assist heart to pump maintaining cardiac output
 - Allows failure ventricle to rest
 - Short term
 - Bridge to transplantation (awaiting donor heart)
 - Bridge to recovery (for hearts who may recovery)
 - Long term
 - Destination therapy-(long term therapy; not candidate for heart transplant)
- <https://www.youtube.com/watch?v=m0ZIYog32SQ>





Explain Medical Treatments Used for Acute and Chronic Heart Failure

- Surgical Management
 - Ventricular reconstruction
 - Reduces left ventricular volume
 - Cardiac Transplant
 - End-stage disease
 - Donor heart
 - Orthotopic-patient heart is removed
 - Donor's atria, aorta, pulmonary artery is connected to patient's
 - <https://www.youtube.com/watch?v=VGZRMHA4ics>
 - Heterotopic-patient heart is not removed
 - Donor's heart and vessels are connected to patients
 - Donor heart rests in right side of patient's chest
 - <https://www.youtube.com/watch?v=u5VbSDp2qMU>

Explain Medical Treatments Used for Acute and Chronic Heart Failure-Heart Transplant Con't

- Immunosuppressive therapy
- Complications
 - Heart rejection
 - Major cause of death in first year
 - Immunosuppressive therapy
 - Infection
 - Cancer
 - Diabetes
 - Kidney disease
 - High cholesterol



Plan Nursing Care for Acute and Chronic Heart Failure

- Subjective
 - Data collection
 - Neurologic
 - Knowledge of condition
 - Coping skills
 - Medications
 - Respiratory
 - Cardiovascular
 - Fluid retention
 - Gastrointestinal
 - Urinary



Plan Nursing Care for Acute and Chronic Heart Failure

- Objective
 - Respiratory
 - Cardiovascular
 - Gastrointestinal
 - Neurologic
 - Integumentary
 - Diagnostic tests



Nursing Care

Head to toe assessment

- Dressings monitor
- Observe for signs of awakening, shivering
- Observe for fluid overload
 - Lung sounds
 - I & O
- Pain control
- Lung sounds
- Assess coping
 - Depression, sadness, grief for donor while experiencing relief

- Sleeping
 - Pain control
 - Dim lights
 - Soothing music
 - Sedatives
- Temperature monitor
- Monitor labs
 - CBC and WBC
 - Electrolytes
 - ABG's
- Chest tubes
 - Crepitus-air in subcutaneous tissue for opening chest

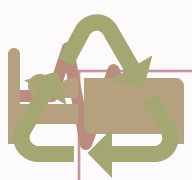




Living With Heart Failure, Myra's Story

- <https://www.youtube.com/watch?v=oAGN7cyizs0>

Living With Heart Failure, Myra's Story



Plan Teaching for Patients with Heart Failure and Their Families

Improve
oxygenation

Monitor for fatigue

What could you advise Myra about positioning while sleeping?

Rest

Provide rest, space
activities, conserve
energy
Assist with ADLs

Myra's daughter asks what is the major cause of HF. What do you tell her?

Plan Teaching for Patients with Heart Failure and Their Families- Fluid Balance

- Fluid balance
 - Monitor for edema, weight gain, jugular vein distention, crackles, cough
 - Encourage to take diuretics- take during early hours (before 1600)
 - Have obstacle-free bathroom to avoid falls
 - Weigh daily-report weight gain of 2 –3 pounds over 1-2 days

What types of foods should you tell Myra to avoid?

Plan Teaching for Patients with Heart Failure and Their Families- Coping

- HF can be frustrating for patient and family
- Assess coping skills and plan accordingly

Myra shares she is frustrated with her diagnosis and limited ability to do "what she did before her HR." What types of resources or referrals could you provide for her?

Plan Teaching for Patients with Heart Failure and Their Families-Diet

What should you teach Myra about her diet and her HF?

Plan Teaching for Patients with Heart Failure and Their Families-Digitalis

EDUCATION WITH DIGITALIS

- Always take apical pulse before giving; less than 60 bpm hold and notify HCP
- Hypokalemia increases heart's sensitivity to digitalis
 - Can lead to toxicity of digitalis
 - Teach with diuretic potassium may be decreased

SIGNS AND DIGITALIS TOXICITY

Myra is prescribed Digitalis.
What are signs of digitalis toxicity??