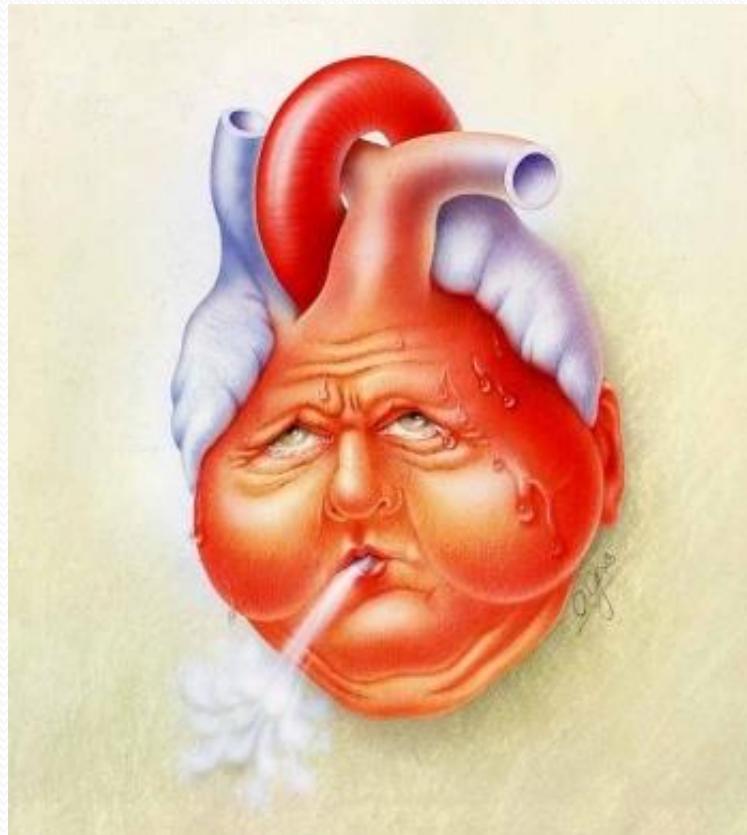


Congestive Heart Failure



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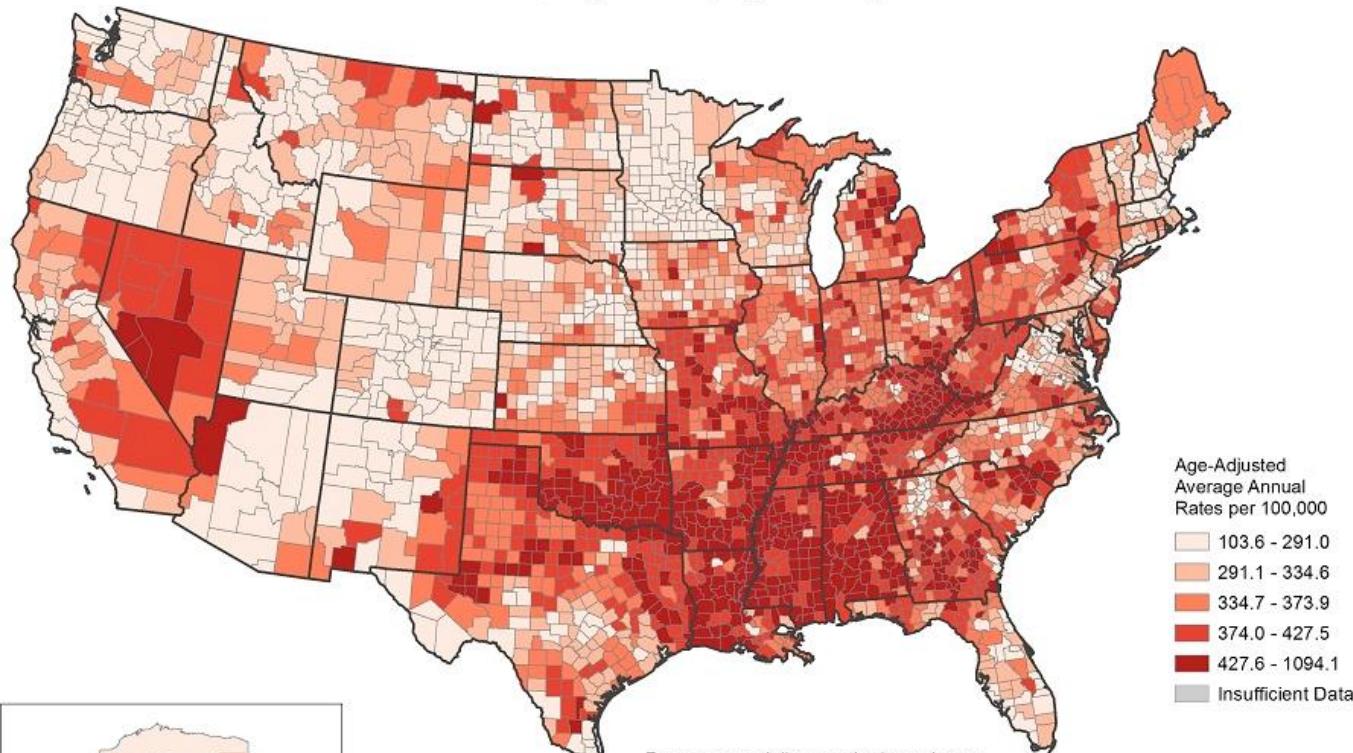
Objectives

- Epidemiology of Heart Failure
- Mechanisms
- Risk Factors
- Symptoms
- Diagnosis
- Treatments

Epidemiology

- In the United States, 5.7 million patients with heart failure
- 1 in 9 deaths include heart failure as a cause
- About 50% die within 5 years of heart failure diagnosis

Heart Disease Death Rates, 2011-2013 Adults, Ages 35+, by County

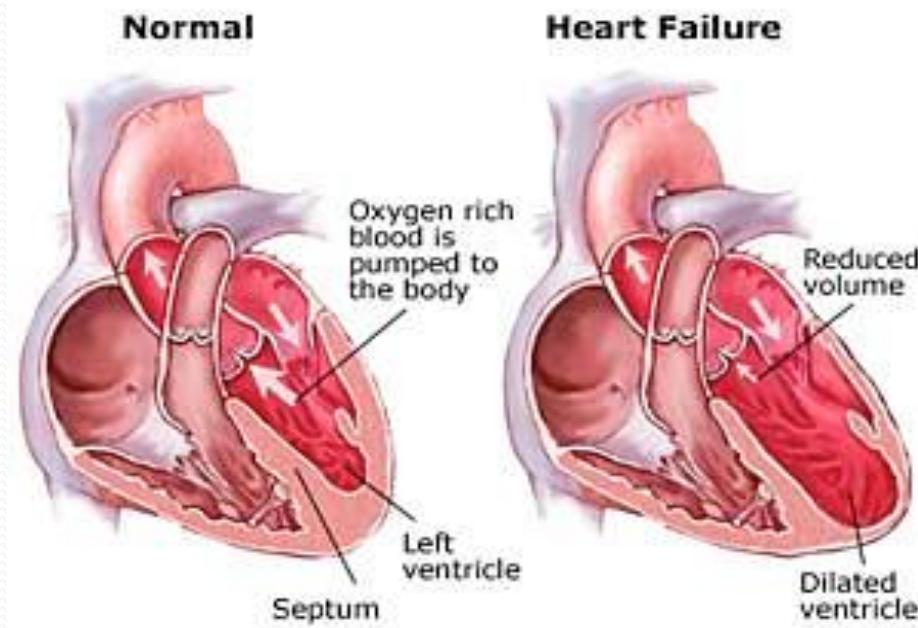


Rates are spatially smoothed to enhance the stability of rates in counties with small populations.

Data Source:
National Vital Statistics System
National Center for Health Statistics



What is Heart Failure?

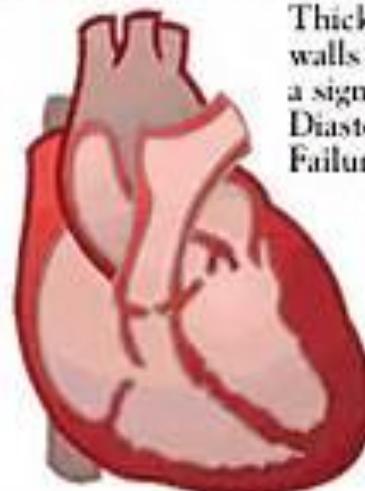


- Heart failure occurs when the heart pumps blood less well
- Fluid back up in the body instead of moving forward
- Organs do not receive the amount of blood they need

Types of Heart Failure

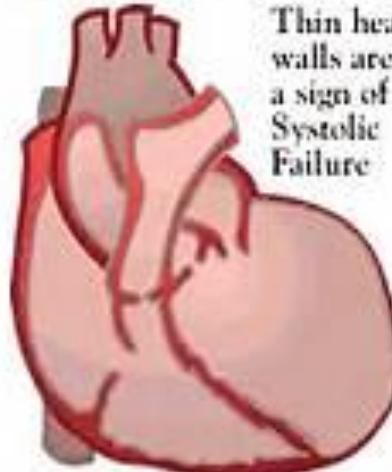
- Systolic heart failure
- Diastolic heart failure

Diastolic Failure



Thick heart walls are a sign of Diastolic Failure

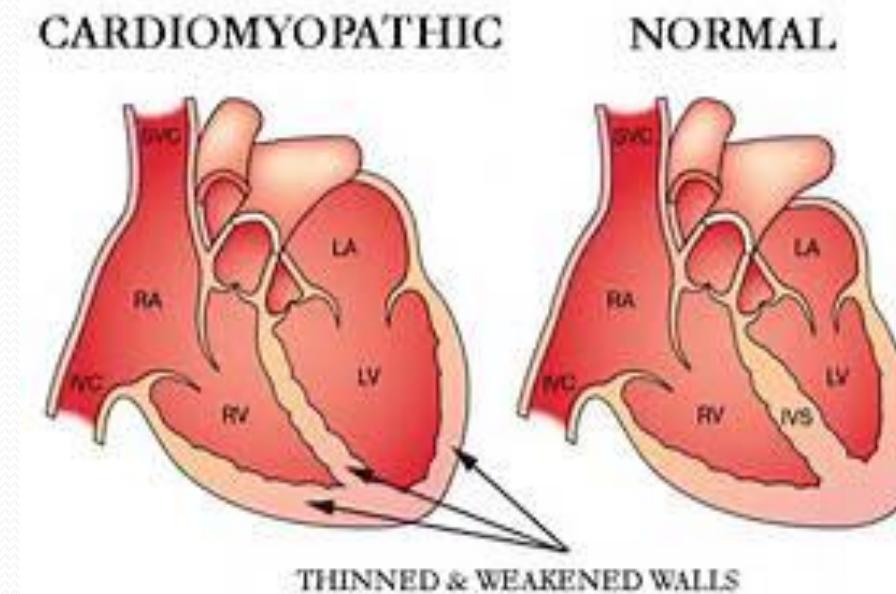
Systolic Failure



Thin heart walls are a sign of Systolic Failure

Systolic Heart Failure

- The heart can enlarge and the heart walls can thin over time
- The pump of the heart starts to fail



Diastolic Heart Failure

- Normal ejection fraction, but the heart is stiff
- Cannot relax properly

Contributing Factors

- Coronary Artery Disease
- High blood pressure
- Diabetes
- Thyroid dysfunction
- Valve abnormalities
- Infection
- Drugs, like chemotherapy



Causes

- Need to identify potentially reversible causes of heart disease
 - Open blockages stents or surgery
 - Repair abnormally functioning heart valves
- Can lead to some improvement of ejection fraction

Symptoms

- Shortness of breath
 - With exertion
 - Laying flat
- Swelling in the abdomen, feet, or ankles
- Weakness or dizziness
- A racing heartbeat while at rest



Congestive Heart Failure

- As pump function worsens:
 - Increased probability of fluid retention
 - Increased risk of life-threatening arrhythmia



Congestive Heart Failure

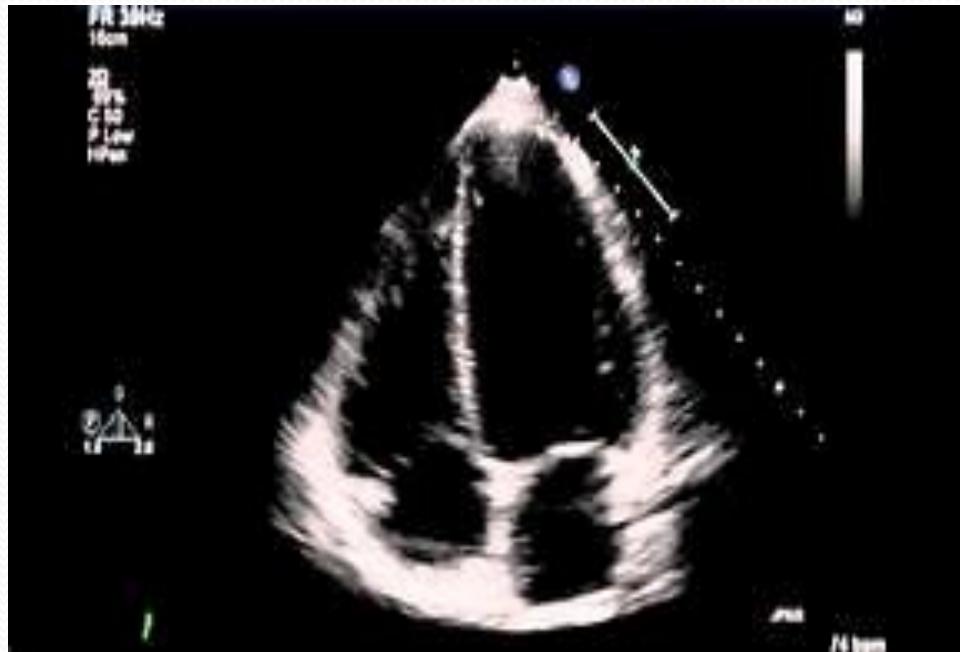
- As heart failure worsens, more likely to die from heart failure than life-threatening arrhythmias

Is there a cure to heart failure?

- No, but it can be managed with medications and device therapy

Diagnosis

- Echocardiogram
 - Evaluate ejection fraction or “squeezing function” of the heart
 - Evaluate the relaxation of the heart
 - Evaluate the size of the heart



How is Heart Failure Treated?

- Early treatment is important
 - Delaying treatment may lead to significant heart damage
- Taking medications regularly will reduce symptoms and help stabilize heart function
 - Reduce hospitalizations

Medications

- Angiotensin converting enzyme (ACE) inhibitor or Angiotensive receptor blocker (ARB)
 - Block harmful stress hormones that worsen heart failure
 - Improve remodeling of the heart
- Beta blocker
 - Block harmful stress hormones that worsen heart failure
 - Improve remodeling of the heart



Medications

- Diuretic
 - Reduce excess fluid
- Mineralocorticoid receptor antagonist
 - Block harmful stress hormones
 - Improve remodeling of the heart
- Nitrate with hydralazine
 - Beneficial in certain populations



Lifestyle Modification

- Stop smoking
- Restrict alcohol
 - ≤ 2 drinks for men, ≤ 1 drink for women
- Restrict sodium < 1500 mg
- Lose weight if overweight
- Daily weights

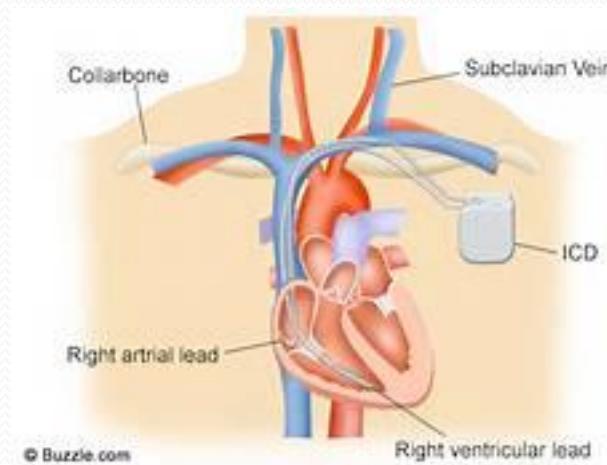


Exercise

- Ok to exercise with heart failure
- Beneficial to participate in moderate exercise
 - Decreased fatigue
 - Less shortness of breath
 - Higher quality of life

Device Therapy

- Defibrillators
 - Reduces life-threatening arrhythmias
- Chronic resynchronization therapy
 - Re-synchronize heart contraction



Device Therapy

- A mechanical pump that helps pump blood when heart function is severely impaired
 - End-stage heart failure
- Implanted inside a patient's chest



Heart Transplant

- Replaces a severely diseased heart with a healthy heart



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Thank You