

# What is Cardiovascular Disease?



## Introduction

Cardiac disease is a broad term for different types of diseases affecting the heart and circulatory system. Potential causes of cardiovascular disease include diabetes mellitus, hypertension and high cholesterol.

## Symptoms

The symptoms of heart disease will vary dependent upon the cause and may include:

- breathlessness or dyspnea
- fatigue
- congestion (fluid overload)
- swelling
- anorexia
- muscle wasting
- lightheadedness
- possibly pain

## Types of Cardiac Disease

There are several types of cardiac disease including:

- coronary artery disease (CAD)
- cardiomyopathy
- ischemic heart disease (IHD)
- heart failure
- cor pulmonale
- heart valve disease

## Coronary Artery Disease

Coronary artery disease (CAD) is caused by the accumulation of plaque within the walls of the arteries that supply the myocardium. CAD can lead to angina pectoris (chest pain) and myocardial infarction (heart attack).

## Treatment

- lifestyle changes
- medications
- angioplasty
- surgery



---

## Goals of Treatment

- a reduction of cardiovascular events
- relief of symptoms of CAD
- slowing of the progression of atherosclerosis by controlling risk factors, decreasing myocardial oxygen demand and/or increasing oxygen supply

## Cardiomyopathy

Cardiomyopathy is the deterioration of the function of heart muscle which can lead to arrhythmia and/or sudden cardiac death.

## Treatment

- medication
- implanted devices
- surgery
- heart transplantation

## Goal of Treatment:

- often symptom relief

## Ischemic Heart Disease

Ischemic heart disease (IHD) is characterized by reduced blood supply to the heart muscle. IHD can lead to angina pectoris (chest pain) and decreased exercise tolerance.

## Treatment

- medication
- angioplasty
- surgery

## Heart Failure

Heart failure (congestive heart failure, CHF) is the inability of the heart to fill or pump sufficient amounts of blood through the body. CHF can lead to fluid overload and acute cardiac events.

## Treatment

Managing the symptoms of CHF and preventing the progression of disease with:

- lifestyle changes
- medication
- implanted devices



---

## Cor Pulmonale

Cor pulmonale is the failure of the right side of the heart as a result of prolonged high blood pressure in the pulmonary artery and right ventricle of the heart. Cor pulmonale may result in severe fluid retention, severe dyspnea, shock, and death.

### Treatment

- medication
- surgery

## Heart Valve Disease

Heart valve disease is any disease process involving one or more valves of the heart which can lead to heart failure.

### Treatment

- lifestyle changes
- medications
- surgery

## What is the Prognosis?

Individuals will experience periods of stability alternating with acute exacerbations of their heart disease. Exacerbations usually result in hospitalization which can be very frightening for patients and caregivers. Because of advancement in medication, technology and medical/nursing care, it is difficult to prognosticate each exacerbation. During acute exacerbation, a patient may die as a result of respiratory failure, pulmonary edema and/or diminished cardiac output. During a period of stability, a patient may experience a sudden cardiopulmonary event and die suddenly or experience a gradual loss of consciousness (due to diminished cardiac output and/or organ failure) and die over a period of days or hours.

## Palliative Care

Pharmacological and non-pharmacological interventions should focus on symptomatic relief (symptoms are listed below), prevention of complications, maintenance of maximum function and optimal quality of life.

Pharmacological treatment of cardiac disease includes:

**Angiotensin-modulating agents:** ACE inhibitors improve symptoms by decreasing afterload thereby decreasing the amount of work the heart must perform. (ACE Inhibitors end in -pril.). ACE inhibitors are a prescribed class of medications to treat high blood pressure -- after a heart attack (lisinopril, captopril, ramipril), for congestive heart failure and kidney problems in diabetic patients (captopril).



**Diuretics:** Diuretic medications work by changing the way the kidneys handle salt, water, and other substances. Diuretics are indicated for treatment of high blood pressure, heart failure, edema and the relief of congestive heart symptoms. Diuretics have different classes and each class has different mechanisms of action and will work on different areas of the kidney. Several different classes of diuretics may be used, with combinations reserved for severe heart failure. Examples of the common classes of diuretics include:

- Thiazide diuretics (Hydrochlorothiazide)
- Loop diuretics (Lasix)
- Potassium sparing diuretics (Spironolactone)

**Beta blockers:** Beta Blockers (Atenolol, Metoprolol) decrease the amount of work the heart must perform. They are prescribed to treat high blood pressure, irregular heartbeat and angina. (Beta Blockers end in --ol.)

**Cardiac glycosides:** Digoxin helps the heart beat stronger and more regularly. It is used to treat congestive heart failure and atrial fibrillation/atrial flutter.

**Prevention of cardiac complications:**

- moderate physical activity when symptoms are mild or moderate
- weight reduction
- control of hypertension
- weight monitoring - can easily be measured at home; rapid weight increase is generally due to fluid retention.
- sodium restriction
- fluid restriction
- elevation of legs above the heart when lying down
- avoidance of constricting clothes

Psychological and spiritual support is needed to assist patients and their families as these patients often experience fear, anxiety and depression. Support groups (including online chat groups) are an excellent resource. To help patients and caregivers find a support group; contact your local American Heart Association (AHA).

## Documentation

Indicate in documentation if the patient has signs and symptoms of congestive heart failure at rest. These would include one or more of the following:

### Signs

- diaphoresis (sweating)
- cachexia
- jugulovenous distention (JVD)



- neck veins distended above clavicle
- cough -- may be a symptom of left-sided heart failure
- cyanosis
- rales (wet crackles in lungs heard on inspiration)
- gallop rhythm, S3, S4
- liver enlargement (Hepatomegaly)
- bloating
- ascites
- edema, pitting edema -- note location and extent
- weight gain
- peripheral edema

### Symptoms

- limitation of physical activity
- ordinary or less than ordinary activity results in fatigue, palpitation, dyspnea, or chest pain.
- NYHA Class IV New York Heart Association Functional Classification Tool
- inability to carry on any physical activity without discomfort.
- dyspnea at rest -- "short winded", "can't breathe"
- dyspnea on exertion -- "can't breathe with activity or exercise"
- orthopnea -- "can't breathe lying down"
- Paroxysmal nocturnal dyspnea (PND) -- "waking up at night short of breath"
- syncope -- sudden but temporary loss of consciousness that occurs when blood flow to the brain becomes insufficient, "fainting".
- weakness -- refer to previous description and questions
- chest pain -- note when it occurs, duration, precipitating factors, alleviating factors, etc.
- fatigue
- nocturia

Document persistent symptoms despite medical management with diuretics and vasodilators. Note that the physician has verified that the patient is on optimal therapy. A list of all diuretics and vasodilators on which the patient has previously been tried should be included in the patient's history. Ejection fraction of < 20 % (document only if test results are available). The following factors are further indications of decreased survival time. If present, document the following:

- symptomatic supraventricular or ventricular arrhythmias resistant to antiarrhythmic therapy
- history of cardiac arrest and resuscitation in any setting
- history of syncope (see above) of any cause, cardiac or otherwise
- cardiogenic brain embolism, i.e. embolic CVA of cardiac origin
- concomitant HIV disease



---

## Documentation Tips

Document all signs and symptoms affecting physical function including onset of disease and changes over time. Include information relating the psychosocial and spiritual needs and interventions which impact the overall quality of life.

## References

*Dudgeon D. Dyspnea, Death Rattle and Cough. In: Ferrell B & Coyle N, eds Textbook of Palliative Nursing 2nd ed, pp 249 - 255. Oxford University Press, 2006.*

*Grauer P, Shuster J & McCrate-Protus B. (2008). Palliative Care Consultant: A reference guide for palliative care 3rd ed. Kendall/Hunt publishing Co.*

*Kuebler KK, Davis MP & Moore CD. (2005). Palliative Practices: An Interdisciplinary Approach. Elsevier/Mosby: Missouri.*

*Kinzbrunner B. Non-malignant terminal diseases: criteria for hospice admission. Hosp Update 3: 3-6, 1993.*

*Stuart B, et al. Medical Guidelines for Determining Prognosis in Selected Non-Cancer Diseases. Arlington, VA, National Hospice Organization, 1996.*

