

Chapter 12 Cardiovascular Disease

Hlth 2 Health and Wellness
Dr. Tomita

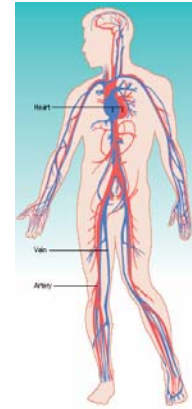
Learning Objectives

1. Define the following terms: cardiovascular disease, capillaries, hypertension, atherosclerosis, plaque, coronary heart disease, angina pectoris, arrhythmia, heart attack, stroke, cardiopulmonary resuscitation (CPR).
2. List the major components of the cardiovascular system and describe how blood is pumped and circulated throughout the body.
3. Describe the risks factors associated with cardiovascular disease.
4. Discuss the major forms of cardiovascular disease and how they develop.

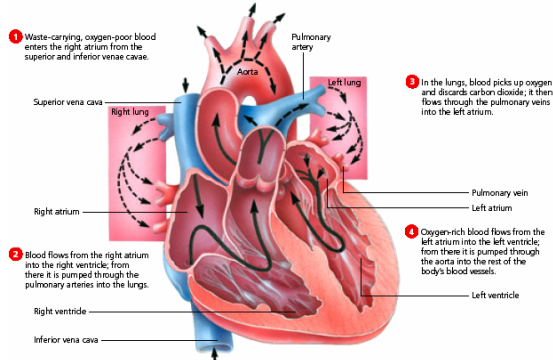
Introduction

- Cardiovascular disease (CVD) is the leading cause of death in the U.S.
- One American dies from CVD every 33 seconds
- Nearly half of all Americans will die from CVD
- CVD is the leading cause of death for both men and women
- 45% of all heart attacks occur in people under the age of 65
- Most of CVD risk is lifestyle-related

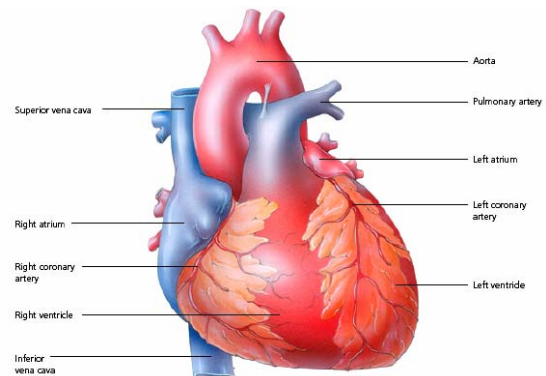
Cardiovascular System



Blood Circulation in Heart



Blood Supply to Heart



Risk Factors for CVD: Risk Factors That Can Be Changed

- Tobacco use
- High blood pressure
- Unhealthy blood cholesterol levels
- Physical inactivity
- Obesity
- Diabetes
- Triglyceride levels
- Psychological and social factors

Risk Factors for CVD: Risks That Cannot Be Changed

- Heredity
- Being male
- Aging
- Ethnicity

Who Dies From Cardiovascular Disease?

Rank	Age Groups						
	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Unintentional Injury 15,442	Unintentional Injury 13,032	Unintentional Injury 16,471	Malignant Neoplasms 49,520	Malignant Neoplasms 96,956	Heart Disease 533,302	Heart Disease 652,486
2	Homicide 5,085	Suicide 5,074	Malignant Neoplasms 14,723	Heart Disease 37,556	Heart Disease 63,613	Malignant Neoplasms 385,847	Malignant Neoplasms 553,888
3	Suicide 4,316	Homicide 4,495	Heart Disease 12,925	Unintentional Injury 16,942	Chronic Low Respiratory Disease 11,754	Cerebrovascular 130,538	Cerebrovascular 150,074
4	Malignant Neoplasms 1,709	Malignant Neoplasms 3,633	Suicide 6,638	Liver Disease 7,496	Diabetes Mellitus 10,780	Chronic Low Respiratory Disease 105,197	Chronic Low Respiratory Disease 121,987
5	Heart Disease 1,038	Heart Disease 3,163	HIV 4,826	Suicide 6,906	Cerebrovascular 9,966	Alzheimer's Disease 65,313	Unintentional Injury 112,012

Who Dies From Cardiovascular Disease: Facts

1. Fact: The leading cause of death in the USA is heart disease.
2. Myth: This statistic applies to ALL age groups.
3. US National statistics show this people over 65 years die from heart disease.
4. Up to age 44 yrs, the leading cause of death is Unintentional Injuries.

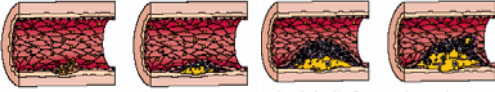
Risk Factors for CVD: Risk Factors That **Possibly** Can be Changed

- Homocysteine
- Infectious agents
- Inflammation and Creactive protein
- Fibrinogen
- Blood viscosity and iron stores
- Lipoprotein(a)
- LDL particle size
- Uric acid
- Syndrome X

Major Forms of CVD

- Hypertension
- Atherosclerosis
- Heart disease and heart attacks
- Stroke
- Congestive heart failure
- Other forms of heart disease
 - Congenital defects
 - Rheumatic heart disease
 - Heart valve disorders

Stages of Plaque Development



Plaque buildup begins when endothelial cells lining the arteries are damaged by smoking, high blood pressure, oxidized LDL, and other causes. excess cholesterol particles collect beneath these cells.

In response to the damage, platelets and other types of cells collect at the site, a fibrous cap forms, isolating the plaque within the artery wall. An early stage plaque is called a fatty streak.

Chemicals released by cells in and around the plaque cause further inflammation and buildup. An advanced plaque contains LDL, white blood cells, connective tissue, smooth muscle cells, platelets, and other compounds.

The narrowed artery is vulnerable to blockage by clots. The risk of leakage and heart attack rises if the fibrous cap cracks (probably due to destructive enzymes released by white blood cells within the plaque).

Protecting Yourself Against CVD

- Eat heart-healthy
- Exercise regularly
- Avoid tobacco
- Know and manage your blood pressure
- Know and manage your cholesterol levels
- Develop effective ways to handle stress & anger
- Manage other risk factors and medical conditions