

Component 3-Terminology in Healthcare and Public Health Settings

Unit 5-Cardiovascular System

This material was developed by The University of Alabama at Birmingham, funded by the Department of Health and Human Services,
Office of the National Coordinator for Health Information Technology under Award Number 1U24OC000023.

Cardiovascular System

- Objectives
 - Define, understand and correctly pronounce medical terms related to the cardiovascular system
 - Describe the following related to the cardiovascular system
 - common diseases and conditions
 - laboratory and diagnostic procedures
 - medical and surgical procedures
 - medications

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Cardiovascular System

- Also referred to as the circulatory system
- Functions
 - Distribute blood to all areas of body
 - Delivery of needed substances to cells
 - Removal of wastes

SEER Training Modules, Anatomy & Physiology. U.S. National Institutes of Health, National Cancer Institute. 6/27/2010
<http://training.seer.cancer.gov/anatomy/cardiovascular>

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Cardiovascular System

- Organs of cardiovascular system
 - Heart
 - Arteries
 - Capillaries
 - Veins



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Heart

- Located in the mediastinum
 - On left side of chest
 - Directly behind sternum
- About size of a fist
- Shaped like upside-down pear



SEER Training Modules: Anatomy & Physiology, U.S. National Institutes of Health, National Cancer Institute, 6/27/2010
<http://training.seer.cancer.gov/anatomy/cardiovascular>

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Heart Chambers

- Divided into four chambers
 - **Two atria**
 - Left and right upper chambers
 - Receiving chambers
 - Blood returns to atria in veins
 - **Two ventricles**
 - Left and right lower chambers
 - Pumping chambers
 - Blood exits ventricles into arteries
- **Septum**
 - Wall that divides the heart into right and left sides

SEER Training Modules: Anatomy & Physiology, U.S. National Institutes of Health, National Cancer Institute, 6/27/2010
<http://training.seer.cancer.gov/anatomy/cardiovascular/heartstructure.html>

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Blood Vessels

- Circulate blood through body
- Three types:
 - Arteries
 - Capillaries
 - Veins

SEER Training Modules, Anatomy & Physiology. U.S. National Institutes of Health, National Cancer Institute. 6/27/2010
<http://training.seer.cancer.gov/anatomy/cardiovascular/blood/classification.html>

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Blood Vessels

- **Arteries**
 - **Large, thick-walled vessels which can dilate or constrict**
 - **Carry blood away from heart**
- Capillaries
- Veins

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Blood Vessels

- Arteries
- **Capillaries**
 - **Network of tiny, thin-walled blood vessels**
 - **Connecting unit between arteries and veins**
 - **Oxygen and nutrients diffuse out of the blood**
 - **Carbon dioxide and wastes diffuse into the blood**
- Veins

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Blood Vessels

- Arteries
- Capillaries
- **Veins**
 - **Carry blood towards the heart**
 - **From either the lungs or the cells and tissues of body**

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Atherosclerosis

- Disease in which plaque builds up inside arteries
- **Plaque**
 - Sticky substance made up of fat, cholesterol, calcium, and other substances found in the blood
 - Builds up inside your arteries
- Can lead to
 - Coronary artery disease
 - Carotid artery disease
 - Peripheral arterial disease

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Atherosclerosis

- **Coronary artery disease**
 - Occurs when arteries that supply blood to your heart are blocked.
 - Angina or a heart attack
- **Carotid artery disease**
 - Occurs when arteries that supply blood to your brain are blocked.
 - Stroke
- **Peripheral arterial disease**
 - Occurs when arteries in your arms, legs and pelvis are blocked
 - Numbness, pain
 - Sometimes infections

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Atherosclerosis

- Usually doesn't cause symptoms until it severely narrows or totally blocks an artery
- Diagnosis
 - Physical examination
 - Imaging
 - Other diagnostic tests
- Treatments
 - Medicines
 - Medical procedures
 - Surgery
 - Lifestyle changes

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Stroke

- Blood flow to your brain stops
 - Medical emergency
 - Early action important to minimize damage
- Treated or prevented by controlling risk factors
 - High blood pressure
 - Smoking
 - High cholesterol

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Kinds of Stroke

- Ischemic stroke
 - Caused by a blood clot that blocks or plugs a blood vessel in the brain
- Hemorrhagic stroke
 - Caused by a blood vessel that breaks and bleeds into the brain

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Transient Ischemic Attacks (TIAs)

- Blood supply to the brain is briefly interrupted
 - Many last less than five minutes
 - Caused by clot or debris
 - Do not usually cause permanent damage

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Stroke

- Symptoms: Characterized by sudden
 - Numbness or weakness of the face, arm or leg (especially on one side of the body)
 - Confusion, trouble speaking or understanding speech
 - Trouble seeing in one or both eyes
 - Trouble walking, dizziness, loss of balance or coordination
 - Severe headache with no known cause
- Treatment
 - Drug therapy
 - Blood thinners
 - Rehabilitation

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Hypertension

- “Silent killer”
- High blood pressure can cause
 - Kidney problems
 - Stroke
 - Heart failure
 - Blindness
 - Heart attacks
- Controlling high blood pressure
 - Healthy lifestyle habits
 - Medication

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Hypertension

- Blood pressure readings
 - Systolic blood pressure
 - pressure when the heart beats while pumping blood
 - Diastolic blood pressure
 - pressure when the heart is at rest between beats
- Usually written one above the other
 - Systolic on top; diastolic on bottom
- Ranges
 - 120/80 or lower = normal blood pressure
 - 140/90 or higher = high blood pressure
 - Pre-hypertension = systolic (top) between 120 and 139 or diastolic (bottom) between 80 and 89

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Myocardial Infarction

- Those symptoms include
 - Chest discomfort
 - Shortness of breath
 - Discomfort in the upper body
 - Nausea, vomiting, dizziness, lightheadedness, sweating
- Clot in the coronary artery blocks the supply of blood and oxygen to the heart
- Arrhythmia
 - Irregular heartbeat
 - Severe decrease in the pumping function of the heart

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Cardiovascular Combining Forms

- angi/o vessel angioplasty
- aort/o aorta aortic
- arteri/o artery arterial
- ather/o fatty substance atherectomy
- atri/o atrium interatrial
- cardi/o heart cardiomegaly
- phleb/o vein phlebitis

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Tell me, Detective . . .

- David is rushed to the doctor after complaining of having a really bad headache. His wife also tells David's doctor that her husband is feeling confused, having trouble speaking and has numbness of the left side of his face. These symptoms are indicative of:
 - Atherosclerosis
 - Stroke
 - Myocardial Infarction



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For additional information on content covered in this unit, please visit:

<http://www.nlm.nih.gov/medlineplus/bloodheartandcirculation.html/>

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