The cardiovascular system is responsible for pumping blood through the body, transporting nutrients and oxygen to cells and removing waste products. Diseases of the cardiovascular system are a major cause of death at all ages.

Objectives
Upon completion of this lesson, the student will be able to
- Define and decipher common terms associated with the cardiovascular system
- Identify the basic anatomy of the cardiovascular system
- Investigate diseases and disorders of the cardiovascular system.

Engage
According to the American Heart Association, over 750,000 people die each year of cardiovascular disease. Heart attacks are occurring in younger patients each year. Have students discuss their lifestyle and list all the risk factors they personally have on paper. Next have students evaluate other risk factors that teenagers face today, and discuss ways to improve heart health.

Or
Have students login to Auscultation Assistant at http://cleartoauscultation.org/ to listen and compare normal and abnormal heart sounds to engage students in the lesson or you can continue to refer to the website after covering each pathology.

Key Points
POWER POINT – Cardiovascular Pathology
I. General Information
   A. Cardiovascular disease is the leading cause of death in the U.S.
   B. More than 2,600 Americans die each day due to cardiovascular diseases
   C. Over 57,000,000 people have some form of cardiovascular disease

II. Overview of Anatomy
   A. The heart is approximately the size of an adult fist
      1. Double pump
         a. The right side pumps low oxygenated blood
         b. The left side pumps oxygen rich blood
   B. Pericardium – the double membranous sac that surrounds the
C. Three layers of the heart wall
   1. Epicardium – outermost layer
   2. Myocardium – middle muscular layer
   3. Endocardium – innermost layer

D. The four chambers
   1. Right and left atria (upper chambers)
   2. Right and left ventricles (lower chambers)

E. Heart valves
   1. The right heart valves – tricuspid, pulmonary
   2. The left heart valves – mitral, aortic

F. Great vessels
   1. The right heart vessels – superior and inferior vena cavae, pulmonary artery
   2. The left heart vessels – pulmonary veins, aorta

G. Electrical stimulation – causes the heart to contract rhythmically and pump blood
   1. Sinoatrial (SA) node – where the cardiac electrical impulse begins (pacemaker)
   2. Atrioventricular (AV) node – receives impulses from the SA node
   3. Bundle of HIS – receives impulses from the AV node
   4. Purkinje fibers – receive impulses from the bundle of HIS

III. Heart disease in general
   A. Some common signs and symptoms
      1. Angina
         a. A crushing pressure
         b. A feeling of constant indigestion
         c. Radiating pain (down the arm—usually the left) and/or to the jaw
      2. Dyspnea – especially climbing stairs
      3. Tachycardia
      4. Fatigue
      5. Cardiac palpitations
      6. Diaphoresis
      7. Edema in the extremities
      8. Nausea and/or vomiting
      9. Cyanosis

IV. Common diagnostic tests for cardiovascular disease
   A. Non-invasive procedures
      1. Auscultation – use of a stethoscope to listen to blood flow
      2. Doppler study – device placed over the arteries to magnify the sound of blood flow

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3. Blood pressure screening – use of sphygmomanometer to measure systolic and diastolic pressure
4. Electrocardiogram – a procedure in which electrical impulses of heart are measured
5. Echocardiography – a procedure that uses sound waves to produce pictures of the heart and great vessels

B. Invasive procedures
1. Cardiac catheterization – a procedure where a catheter is placed into the heart via an artery or vein
   a. Contrast media (radiopaque dye) is injected through the catheter into the great vessels, heart chambers, or coronary arteries to determine
      i. Abnormalities of the valves and chambers
      ii. Patency and abnormalities of the great vessels and coronary arteries
   b. The procedure is performed under fluoroscopy to verify the correct catheter placement
   c. As the contrast media is injected, x-rays are taken
2. Venipuncture – blood drawn from the veins in order to test enzyme levels
   a. After a myocardial infarction (MI), part of the heart muscle can die, at which time enzymes are released
   b. Enzyme levels help determine the time and degree of the infarction
   c. Common enzymes are creatinine phosphokinase (CPK) and lactic dehydrogenase (LDH)

V. Common Diseases of the Cardiovascular System
A. Hypertension (HTN) – a high blood pressure
   1. Chronic disease
   2. The leading cause of stroke and heart failure
   3. Normal BP = 120/80 mm Hg
      a. The top number is systolic, which measures the pressure when ventricles contract
      b. The bottom number is diastolic, which measures the pressure when ventricles relax
   4. Causes of hypertension
      a. Heredity – a higher incidence in certain families and ethnic groups
      b. Diet – high salt and fat intake increase the risk of hypertension
      c. Age – BP tends to rise with age
      d. Obesity
   5. Effects of hypertension may take years to develop
   6. As a result of hypertension, the left ventricle works harder to pump blood
7. The result of long-term hypertension is referred to as hypertensive heart disease
8. Hypertension also has adverse effects on vessels – over a period of years vessels become sclerotic and lose elasticity – sclerotic vessels are more likely to form thrombi and rupture
9. Treatment of hypertension
   a. For mild hypertension
      i. Lifestyle changes
      ii. Low-salt, low-fat diet
      iii. Stress reducing exercise
      iv. Smoking cessation
      v. Weight reduction
   b. For extremely high hypertension – anti-hypertensive medications

B. Arteriosclerosis – a loss of elasticity and thickening of arterial walls
   1. The most common cause of arteriosclerosis is atherosclerosis
      a. Atherosclerosis is a narrowing of vessel lumen
      b. This condition is characterized by fatty deposits (plaque) in the walls of arteries
   2. Plaque can damage the artery and interrupt blood flow by
      a. Damaging the inner lining of an artery by pushing into the endothelium (damage to the lining allows blood cells to stick to arterial walls and occlude lumen)
      b. Causing an arterial wall to harden or lose elasticity (increases blood pressure and overworks the heart)
      c. Ulcerating a vessel or breaking lose and forming an embolus
   3. Narrowing from plaque buildup leads to
      a. High blood pressure
      b. Slowing or stoppage of blood flow to tissues and organs
         i. Organs can become ischemic and eventually die
         ii. The increased pressure stretches hardened arteries, causing more artery damage
   4. Four major areas that are often effected by atherosclerosis
      a. Coronary arteries – arteries that feed the heart muscle – damage leads to coronary artery disease (myocardial infarction)
      b. Cerebral arteries – arteries which feed the brain – damage leads to cerebrovascular accidents (CVA), also known as strokes
      c. Aorta – the largest artery in body; distributes oxygenated blood to the body – damage can lead to an aneurysm
Peripheral arteries – feed the extremities – damage may lead to vascular problems in the arms and legs.

C. Peripheral Vascular Disease (PVD)
   1. Caused by plaque in the arteries that supply blood to the legs
   2. Activity can lead to muscular cramping – this condition of developing muscle cramps that are relieved with rest then increased with activity is called intermittent claudication
   3. Chronic occlusion
      a. Generally related to a progressive narrowing of the femoral and popliteal arteries
      b. The blood supply to the leg muscles is compromised
   4. Acute occlusion
      a. Usually involves smaller arteries supplying blood to the feet and toes
      b. Can lead to necrosis and gangrene
   5. Treatment of chronic PVD involves endarterectomy (opening the artery and cleaning it out) – damaged arteries can also be bypassed with a graph

D. Aneurysm
   1. A weakening of the arterial wall that allows the vessel to balloon and rupture
   2. Weakens due to
      a. Atherosclerosis
      b. A congenital defect
      c. Injury
   3. Usually asymptomatic and often discovered during a physical examination or x-ray
   4. The most common area affected is the abdominal aorta
   5. Rupture of the aorta can cause massive hemorrhaging and even death
   6. The treatment is surgical resection and grafting
   7. Aneurysms can also occur in the left ventricle

E. Coronary Artery Disease – a narrowing of the arteries that supply blood to the heart
   1. The single leading cause of death in the U.S
   2. Commonly due to atherosclerosis
   3. This progressive narrowing leads to ischemia and oftentimes angina during exercise
      a. Ischemia can cause heart muscle to die and form scar tissue
      b. This scar tissue cannot function and causes an increased workload on the remaining heart muscle
   4. Occlusion of a coronary artery may develop slowly (as with progressive atherosclerosis) or develop suddenly from
      a. Thrombus – a blood clot attached to the vessel wall eventually gets so large it stops the flow of blood to tissue
b. Embolus – a clot or fatty deposit which breaks free from the vessel wall and travels in the circulatory system (eventually getting wedged in the vessel)
   i. If an embolus occlusion occurs in the heart it is called a myocardial infarction (MI) or heart attack
   ii. If an embolus occlusion occurs in the brain it is called a cerebrovascular accident (CVA) or stroke
   iii. If an embolus occlusion occurs in vessels leading to the lungs it is called a pulmonary embolus

5. Collateral circulation
   a. Small arteries that may develop during the course of progressive atherosclerosis
   b. Assist with the transportation of oxygenated blood

6. Diagnosis
   a. Patient history
   b. Electrocardiogram (EKG; ECG)
   c. Selective coronary angiogram

7. Treatment (aimed at opening blood vessels and restoring good flow to heart tissue)
   a. Vasodilators
   b. Angioplasty
   c. Coronary stent(s)
   d. Coronary artery bypass

F. Cardiomyopathy (primary)
   1. Heart muscle becomes dilated enlarged and flabby
      a. Unable to contract efficiently
      b. Limits circulation
   2. Cause – idiopathic
   3. Symptoms
      a. fatigue
      b. shortness of breath (SOB) when walking or climbing stairs
   4. Treatment
      a. Rest
      b. Medications
      c. Heart transplant
   5. Secondary cardiomyopathy – due to chronic hypertension or coronary artery disease
   6. Hypertrophic cardiomyopathy
      a. Heart muscle is enlarged and thick
      b. An inherited disease

G. Carditis
   1. A general term that describes inflammation of the heart
   2. Different forms of inflammation
      a. Pericarditis – inflammation of the outer membrane of the heart
      b. Myocarditis – inflammation of the heart muscle
c. Endocarditis – inflammation of the inner lining of the heart

3. Causes
   a. Bacteria
   b. Viruses
   c. Rheumatic fever
   d. Secondary infection (respiratory system, urinary tract, gums and teeth)
   e. Sometimes the cause is unknown

4. Treatment
   a. Bed rest
   b. Antibiotics
   c. Analgesic

H. Valvular heart disease (related to malfunction of the heart valves)
   1. Malfunctions due to
      a. Stenotic valve
      b. Inability to close properly
         i. Scarring from infection
         ii. Prolapsed valve
   2. Complications of valve defects
      a. Tendency to form clots
      b. Overworks the heart and can lead to congestive heart failure
      c. Bacterial endocarditis
   3. Common causes of defective valves
      a. Congenital
      b. Rheumatic fever
      c. Endocarditis

I. Arrhythmias
   1. Disturbances of the heart’s conduction system, leading to abnormal heart rhythm
   2. Heartbeats that are too fast
      a. Normal sinus rhythm is usually between 60 and 100 beats per minute
      b. Tachycardia is when the heartbeat goes over 100 beats per minute (generally not serious)
      c. A flutter is when the heartbeat is regular, but gets up to 350 beats per minute
      d. Fibrillation is when the heart pumps in an uncoordinated, nonproductive fashion
         i. Atrial fibrillation – not deadly
         ii. Ventricular fibrillation (V-fib; V-tach) – very dangerous; requires defibrillation by electrical shock
   3. Heart block
      a. An interruption in the conduction system that causes the heart to skip beats or stop
      b. Degrees of heart blockage – 1st, 2nd, and 3rd
c. 3rd is the most serious and may be treated with the placement of a manmade pacemaker

4. Premature Ventricular Contractions (PVCs) – early ventricular contractions are serious and may lead to ventricular fibrillation

5. Causes of conduction problems
   a. Some are idiopathic
   b. Known causes
      i. Medications
      ii. Ischemia of the myocardium
      iii. Previous MI

6. Diagnostic tests
   a. Auscultation
   b. Electrocardiography
   c. Electrophysiology

J. Phlebitis (inflammation of the veins)
   1. Inflammation that commonly occurs in superficial veins of the extremities
   2. Symptoms of phlebitis include: pain, swelling
   3. Causes: some are unknown; known causes are:
      a. Injury
      b. Obesity
      c. Poor circulation
      d. Prolonged bed rest
      e. Infection

4. Treatment
   a. Analgesics
   b. Compression stockings
   c. Exercise
   d. Warm compresses
   e. Elevation of the inflamed part (above heart level)

K. Deep vein thrombosis (DVT)
   1. Complication of phlebitis
   2. Development of clot(s) in the inflamed vessel
      a. Clots will commonly occur in the pelvis, thighs, and lower legs
      b. Clots are asymptomatic until embolization takes place – these clots are often fatal if they embolize circulation to the lungs
      c. Threatening factors for deep vein thrombosis include
         i. Prolonged bed rest
         ii. Dehydration (increases blood viscosity)
         iii. Varicose veins
         iv. Leg or pelvic surgery
         v. Pregnancy
         vi. Obesity and sedentary lifestyle
      d. Treatment – reduce the formation of clots
i. Bed rest with elevation of the affected area  
ii. Anticoagulants

L. Varicose veins  
  1. Dilated, convoluted veins (usually in the legs)  
     a. Flow of blood back to the heart is slowed and will collect in the veins, causing increased pressure, dilation, and pain – the condition eventually leads to incompetent venous valves (which normally contract to prevent the backflow of blood)  
     b. Initial symptoms  
        i. Leg fatigue  
        ii. Leg cramps  
     c. Later symptoms  
        i. Hardened, distended, tortuous veins  
        ii. Edema and congestion of fluid in the extremities  
        iii. Stasis dermatitis  
        iv. Pinpoint hemorrhages  
        v. Stasis ulcers  
     d. Cause – varicose veins appear to be inherited, although activities such as pregnancy, obesity, and prolonged standing or sitting might lead to this disorder  
     e. Treatment – use of support hose (improves vascular flow); elevation of legs; walking, surgery (“vein stripping”)

Activity  
I. Research and write a report on a rare cardiovascular disease.  

II. Participate in the online interactive activity: *Do An EKG on Grumpy Mr. Blue:* [http://nobelprize.org/educational/medicine/ecg/](http://nobelprize.org/educational/medicine/ecg/)

Assessment  
Writing Rubric

Materials  
Computer access  
Medical dictionary  
Key Terms  
*Answer Sheet for Key Terms*  
*Medical History Interview Form*  
[http://cleartoauscultation.org/](http://cleartoauscultation.org/)  

Accommodations for Learning Differences  
For reinforcement, the student will define *Key Terms.*
For enrichment, the student will interview a family member, neighbor, etc. who has hypertension or coronary artery disease using the Medical History Interview Form. Relate the patient history to personal health risks.

**National and State Education Standards**

**National Healthcare Foundation Standards and Accountability Criteria:**

**Foundation Standard 1: Academic Foundation**

1.1 Human Structure and Function
- 1.11 Classify the basic structural and functional organization of the human body (tissue, organ, and system).
- 1.12 Recognize body planes, directional terms, quadrants, and cavities.
- 1.13 Analyze the basic structure and function of the human body.

1.2 Diseases and Disorders
- 1.21 Describe common diseases and disorders of each body system (prevention, pathology, diagnosis, and treatment).
- 1.22 Recognize emerging diseases and disorders.
- 1.23 Investigate biomedical therapies as they relate to the prevention, pathology, and treatment of disease.

1.3 Medical Mathematics
- 1.32 Analyze diagrams, charts, graphs, and tables to interpret healthcare results.

**TEKS**

§130.208 (c)(4)(A) identify biological and chemical processes at the cellular level;
§130.208 (c)(4)(B) detect changes resulting from mutations and neoplasms by examining cells, tissues, organs, and systems;
§130.208 (c)(4)(C) identify factors that contribute to disease such as age, gender, environment, lifestyle, and heredity; and
§130.208 (c)(4)(D) examine the body's compensating mechanisms occurring under various conditions;

**Texas College and Career Readiness Standards**

Science

V. Cross-Disciplinary Themes

E. Classification and Taxonomy
- 1. Know ways in which living things can be external structure, development, and relatedness of DNA sequences.

F. Systems and homeostasis
- 1. Know that organisms possess various structures and processes (feedback loops) that maintain steady internal conditions.
- 2. Describe, compare, and contrast structures and processes that allow gas exchange, nutrient uptake and processing, waste excretion, nervous and hormonal regulation, and reproduction in plants, animals, and fungi; give examples of each.
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<td>stops after you rest for a while. Each time pain occurs, it take you stop</td>
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<td>Collateral circulation</td>
<td>development of small set of arteries when a larger artery gradually</td>
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<td>narrowing of arteries that supply blood to myocardium</td>
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<td>Cyanosis</td>
<td>condition in which skin and mucous membranes take on a bluish color</td>
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<tr>
<td>Cyanosis</td>
<td>because there is not enough oxygenated blood getting to the tissues</td>
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<td>Defibrillation</td>
<td>application of electric shock to chest (sometimes directly to heart) in</td>
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<td>Diaphoresis</td>
<td>sweating profusely</td>
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<td>Term</td>
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<tr>
<td>Doppler</td>
<td>n-invasive ultrasound method used to measure flow of blood</td>
</tr>
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<td>difficult or labored breathing</td>
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<td>swelling</td>
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<td>Embolus</td>
<td>abnormal mass (usually blood clot) that gets into circulatory system and eventually becomes lodged in a blood vessel causing an obstruction</td>
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<td>procedure where a diseased artery is opened so that plaque can be cleaned out.</td>
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<td>Fibrillation</td>
<td>rapid chaotic beating of heart muscle in a nonsynchronous way that can result in the stopping of heart pumping blood</td>
</tr>
<tr>
<td>Gangrene</td>
<td>death and decay of soft tissues as result of lack of oxygenated blood to an area</td>
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<td>Hypertension</td>
<td>high blood pressure</td>
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<td>Hypertrophy</td>
<td>increase in size of an organ</td>
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<td>Ischemia</td>
<td>inadequate supply of blood to part of body caused by partial or total blockage of an artery</td>
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<td>Lumen</td>
<td>space inside vessels</td>
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<td>stoppage of arterial blood going to heart muscle; heart attack</td>
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<td>Necrosis</td>
<td>death of cells in tissue or organ caused by disease or injury</td>
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<td>obstruction</td>
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<td>Palpitations</td>
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<td>Patency</td>
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<td>the fibrous membrane that forms a sac surrounding heart and attached portions of main blood vessels</td>
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<td>Peripheral Vascular Disease (PVD)</td>
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<td>thin filaments which are embedded in the ventricular walls; distribute electrical impulse to the ventricular muscle to promote contraction</td>
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<td>Stent</td>
<td>a small spring-like devise that is inserted into a constricted vessel via catheter in order to restore patency</td>
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**Answers: Key Terms**—Cardiovascular Pathology

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<td>Collateral circulation</td>
<td>development of a small set of arteries when a larger artery gradually becomes occluded</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>narrowing of the arteries that supply blood to the myocardium</td>
</tr>
<tr>
<td>Cyanosis</td>
<td>a condition in which the skin and mucous membranes take on a bluish color because there is not enough oxygenated blood getting to the tissues</td>
</tr>
<tr>
<td>Defibrillation</td>
<td>application of electric shock to the chest (sometimes directly to the heart) in order to restore regular heartbeat after a critical arrhythmia</td>
</tr>
<tr>
<td>Diaphoresis</td>
<td>sweating profusely</td>
</tr>
<tr>
<td>Diastolic</td>
<td>refers to the rhythmic expansion of the heart chambers during which the chambers fill with blood</td>
</tr>
<tr>
<td>Doppler</td>
<td>a noninvasive ultrasound method used to measure the flow of blood</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>difficult or labored breathing</td>
</tr>
<tr>
<td>Edema</td>
<td>swelling</td>
</tr>
<tr>
<td><strong>Embolus</strong></td>
<td>abnormal mass (usually a blood clot) that gets into the circulatory system and eventually becomes lodged in a blood vessel, causing an obstruction</td>
</tr>
<tr>
<td><strong>Endarterectomy</strong></td>
<td>a procedure in which a diseased artery is opened so that plaque can be cleaned out</td>
</tr>
<tr>
<td><strong>Fibrillation</strong></td>
<td>a rapid chaotic beating of the heart muscle in a nonsynchronous way that can result in the stopping of the heart’s pumping blood</td>
</tr>
<tr>
<td><strong>Gangrene</strong></td>
<td>death and decay of soft tissues as the result of a lack of oxygenated blood to an area</td>
</tr>
<tr>
<td><strong>Hypertension</strong></td>
<td>high blood pressure</td>
</tr>
<tr>
<td><strong>Hypertrophy</strong></td>
<td>increase in the size of an organ</td>
</tr>
<tr>
<td><strong>Ischemia</strong></td>
<td>inadequate supply of blood to a part of body caused by the partial or total blockage of an artery</td>
</tr>
<tr>
<td><strong>Lumen</strong></td>
<td>space inside vessels</td>
</tr>
<tr>
<td><strong>Myocardial infarction (MI)</strong></td>
<td>stoppage of arterial blood going to the heart muscle; a heart attack</td>
</tr>
<tr>
<td><strong>Necrosis</strong></td>
<td>death of cells in a tissue or organ caused by disease or injury</td>
</tr>
<tr>
<td><strong>Occlusion</strong></td>
<td>obstruction</td>
</tr>
<tr>
<td><strong>Palpitations</strong></td>
<td>a rapid, forceful beating of the heart due to a medical condition, exertion, fear, or anxiety</td>
</tr>
<tr>
<td><strong>Patency</strong></td>
<td>refers to a naturally open and unblocked vessel</td>
</tr>
<tr>
<td><strong>Pericardium</strong></td>
<td>the fibrous membrane that forms a sac surrounding the heart and attached portions of the main blood vessels</td>
</tr>
<tr>
<td><strong>Peripheral Vascular Disease (PCD)</strong></td>
<td>refers to a disease state in the vessels of outside the heart and the great vessels</td>
</tr>
<tr>
<td><strong>Plaque</strong></td>
<td>residual deposits of cholesterol, which build up and cause atherosclerosis</td>
</tr>
<tr>
<td><strong>Purkinje fibers</strong></td>
<td>thin filaments embedded in the ventricular walls that distribute electrical impulses to the ventricular muscle to promote contraction</td>
</tr>
<tr>
<td><strong>Sclerosis</strong></td>
<td>hardening and thickening of body tissues as a result of unwarranted growth, degeneration of nerve fibers, or deposition of minerals</td>
</tr>
<tr>
<td><strong>Sinoatrial (SA) node</strong></td>
<td>a section of nodal tissue that is located in the upper wall of the right atrium; also referred to as the pacemaker of the heart; sets the rate of contraction for the heart</td>
</tr>
<tr>
<td><strong>Stenosis</strong></td>
<td>narrowing of a vessel or valve</td>
</tr>
<tr>
<td><strong>Stent</strong></td>
<td>a small spring-like device that is inserted into a constricted vessel via catheter in order to restore patency</td>
</tr>
<tr>
<td><strong>Systolic</strong></td>
<td>contraction of the heart during which blood is pumped into the arteries</td>
</tr>
<tr>
<td><strong>Tachycardia</strong></td>
<td>rapid heartbeat (usually above 100 beats per minute)</td>
</tr>
<tr>
<td><strong>Thrombus</strong></td>
<td>a blood clot that forms in the blood vessels and remains at the site of formation</td>
</tr>
<tr>
<td><strong>Vasodilator</strong></td>
<td>a medication which opens the vessels to restore good flow of oxygenated blood</td>
</tr>
<tr>
<td><strong>Venipuncture</strong></td>
<td>the process by which a needle is inserted into a superficial vein to withdraw blood for laboratory testing</td>
</tr>
</tbody>
</table>
Patient History Interview Form

Patient Name ____________________________________  DOB ______________

Sex   F    M

FAMILY HISTORY:

<table>
<thead>
<tr>
<th></th>
<th>Hypertension</th>
<th>Coronary Artery Disease</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Father</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Sibling(s)</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Maternal Grandmother</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Maternal Grandfather</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Paternal Grandmother</td>
<td>___</td>
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<td>___</td>
</tr>
<tr>
<td>Paternal Grandfather</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

CARDIOVASCULAR HISTORY

- Shortness of breath   ___ ___
- General fatigue on exertion ___ ___
- Chest pain   ___ ___
- Heart palpitations   ___ ___
- Rapid heart beat   ___ ___
- Episodes of fainting   ___ ___
- Swelling of hands and/or feet   ___ ___
- Leg fatigue   ___ ___
- High blood pressure   ___ ___
- Gum infections   ___ ___
- Scarlet or rheumatic fever   ___ ___

CHIEF COMPLAINT (upon seeing physician):

DIAGNOSED AS:

TREATMENT:

YOUR PRESENT HEALTH STATUS: