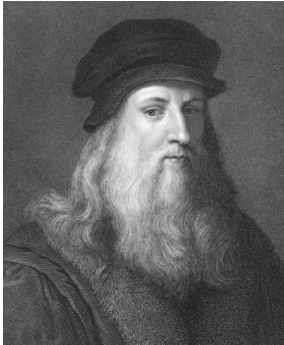


Heart Disease

What is Heart Disease?

Heart disease, often called cardiovascular disease, is a condition involving narrowed or blocked blood vessels that can lead to a heart attack, chest pain or a stroke. It includes a number of conditions such as coronary heart diseases, congenital heart defects, and heart rhythm problems.

Early History and Prevalence



In the 1500's, Leonardo da Vinci first investigated the anatomy of coronary arteries and provided the first description of coronary artery disease. In the year 1578, Dr. William Harvey discovered that blood enters the left ventricle of the heart from the lungs, travels into the aorta, out to the peripheral vessels, and then back into the lungs. Later in the year 1660, a professor at the University of Halle named Friedrich Hoffmann, described that a narrowed blood vessel is the main cause of cardiovascular disease, (American Heart Association, 2009). Today,

heart disease is the leading cause of death for both men and women with about 610,000 deaths caused by heart disease in the United States each year (Centers for Disease Control and Prevention, 2015).

Causes of Heart Disease

Heart disease is the result of narrowed or blocked arteries commonly caused by sedentary lifestyles and/or unhealthy decisions such as smoking, poor diet and a lack of exercise. These can lead to plaque formation and inflammation of the inner lining of the coronary arteries. Over time, these plaques will grow in diameter and can either lead to a narrowing or total blockage of the blood vessel. Even a 40% to 50% narrowing of an artery may compromise blood flow enough to cause harmful effects.



In some cases, formed plaques can rupture spreading pieces throughout the coronary arteries. This will result in additional blockages preventing oxygen-rich blood from flowing into other areas of the heart. An insufficient blood and oxygen supply to these areas will cause the affected heart muscle to die, which may lead to a heart attack or myocardial infarction. Furthermore, an insufficient blood supply to heart muscle may alter the normal electrical activity which can lead to a heart arrhythmia (abnormal heart

beat) such as ventricular tachycardia and ventricular fibrillation which are associated with sudden cardiac death.

Signs and Symptoms

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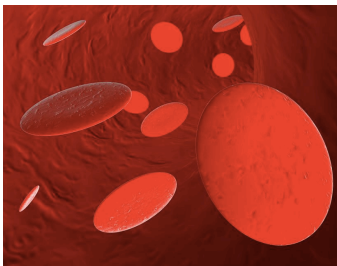
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Complications

Untreated or unmanaged heart disease may result in complications that include heart failure, heart attack and stroke. Heart failure occurs when the heart fails to pump enough blood to meet the needs of the body. Since the body needs a constant supply of oxygen via the blood, heart failure prevents the body from meeting its needs. A heart attack is caused by the blockage of one or more cardiac (heart) blood vessel(s) leading to heart muscle damage or death. If enough heart muscle is damaged, the heart stops beating and you die. If the blockages that buildup in the cardiac blood vessels break away, they can become lodged somewhere else in the body. If they become lodged in a blood vessel in the brain, you can suffer from a stroke. When this occurs, the brain cells that are deprived of oxygen begin to die, taking with them the functions they perform.

Treatments and Management

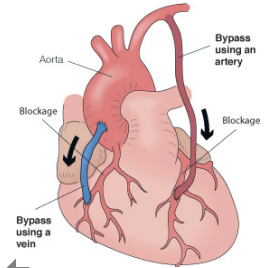
The goal of treatment for a person with heart disease is to maximize the quantity and quality of life as well as to manage and control the existing illness. Once a person has been diagnosed with the disease, it is possible to limit its progression and complications by maintaining a healthy lifestyle with routine exercise, diet and controlled blood pressure. The doctor may prescribe medications to maximize blood



flow to the heart and increase the pumping ability of the heart muscle. Medications such as beta-blockers help the heart beat more efficiently and decrease the oxygen requirements of the heart muscle during activity. It also blocks the action of adrenaline on the heart, slowing the heart rate. Calcium channel blockers are a type of hypertension medication that helps in the efficient contraction of the heart muscle. Another set of medications are nitrates which increase blood flow to the heart by dilating its arteries. This medication is used to treat symptoms of acute (immediate) angina (squeezing, pressure, tightness, heaviness or pain in your chest) and is short-acting. It will often be given to someone immediately who is experiencing symptoms of a heart attack until they can make it to the hospital.

In cases of serious narrowing of the coronary arteries, a doctor will attempt to open the blocked areas using a variety of surgical procedures.

- Angioplasty and Stents utilize a small tube to insert a tiny hollow balloon into the clogged area which when inflated, will act to open the artery.
- A coronary artery bypass graft surgery (CABG) may also be required depending on the extent of the blockage. This procedure uses an artery or vein from a different part of the body (usually the leg) to skip over the blocked section.
- Some patients who have had a heart attack undergo thrombolysis, which is a procedure that involves injecting an agent that will dissolve the clot(s) to restore blood flow in the artery. This procedure must be performed immediately to within a few hours after the attack.



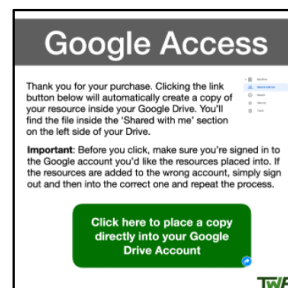
Follow-up Care

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Reading Comprehension Questions:

1. Who provided the first description on coronary artery disease and when did it occur?
2. How many people die every year from cardiovascular disease in the United States?
3. What causes heart disease?
4. How can a
5. What
6. What causes a congenital heart defect and what are the typical symptoms?
7. Why would a doctor use a stress test to gauge your heart health?
8. Why could heart disease lead to heart failure?

9. Why
10. What
11. Why might someone who suffers from heart disease carry with them nitrates at all times?
12. How can a CABG help someone who suffers from heart disease?
13. Someone
14. Summarize

Reading Comprehension Questions: Answer Key



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