

Heart Attack

The heart is both an important muscle and vital organ in the human body, because it moves oxygen-containing blood throughout the circulatory system of blood vessels, supplying energy to every cell of the body. By doing this, the heart allows for the removal of wastes from cells.

The heart muscle, known as the myocardium, sends electrical impulses to the heart, which causes it to contract. These electrical impulses begin in the sinoatrial node in the right atrium and serve as a natural pacemaker causing contractions at a certain rate to pump blood from the ventricles to the atria. This cardiac cycle of heart beats allows blood to be pumped throughout the body and back to the heart in a sustained rhythmic fashion. When this cycle does not run smoothly, blood flow can be reduced or stopped. A serious event like this can be due to many reasons.

A common disruption in this cardiac cycle is myocardial infarction, also known as a heart attack. A heart attack occurs when blood supply to part of the heart muscle is reduced and/or stopped due to blockage of the coronary arteries, which is the only blood vessel to supply the heart with oxygenated blood. When blood is blocked from reaching the heart muscle, cells in that area of the heart start to die; this process is called the infarct. Many heart attacks occur due to blood clots resulting from atherosclerosis. Atherosclerosis occurs with a buildup of plaque inside arteries, narrowing the passageway for blood to be carried to the heart. The plaque buildup is due to high fat (triglyceride) content in the blood.

The signs and symptoms of a heart attack may include:

- Feelings of pain, heaviness, tightness, pressure in the center of the chest

- Pain in the back, left arm, jaw, and neck
- Shortness of breath
- Dizziness
- Nausea and/or vomiting
- Irregular heartbeat
- Sweating
- Sudden weakness

Men and women will experience some or all of these symptoms in the event of a heart attack, but women may also feel a sensation of heartburn in the abdomen, fatigue, and clammy skin.

Factors that may increase one's chance of developing atherosclerosis, which can in turn cause a heart attack, can include smoking, a high fat diet, lack of exercise, obesity, family history of heart attack, diabetes, high blood pressure, and stress. Physicians attempt to diagnose patients who are having or have had heart attacks through use of an electrocardiogram, blood tests for particular enzymes in the blood that may have been released during an infarction, chest x-ray, echocardiogram, angiogram, and stress test.

The most important and effective ways to prevent and/or treat heart attacks is to keep a healthy diet, exercise regularly, and take vitamins and supplements such as folic acid and omega 3 fatty acids. A list of medical treatments and surgeries, along with more information about heart attacks, can be viewed at <http://www.umm.edu/altmed/articles/myocardial-infarction-000115.htm>.