



# Atherosclerosis



*With the tragic passing of NBC's Tim Russert this past week, we felt it would be appropriate to shed some light on the condition which we have been hearing so much about on the news.*

Atherosclerosis is a type of arteriosclerosis. The name comes from the Greek words *athero* (meaning gruel or paste) and *sclerosis* (hardness). It's the term for the process of fatty substances, cholesterol, cellular waste products, calcium and fibrin (a clotting material in the blood) building up in the inner lining of an artery. The buildup that results is called plaque.

Arteriosclerosis is a general term for the thickening and hardening of arteries. Some hardening of arteries normally occurs when people grow older.

Plaque may partially or totally block the blood's flow through an artery. Two things that can happen where plaque occurs are:

- There may be bleeding (hemorrhage) into the plaque.
- A blood clot (thrombus) may form on the plaque's surface.

If either of these occurs and blocks the whole artery, a heart attack or stroke may result.

Atherosclerosis is a slow, progressive disease that may start in childhood. In some people this disease progresses rapidly in their third decade. In others it doesn't become threatening until they're in their 50s or 60s.

## **How does atherosclerosis start?**

It's a complex process. Exactly how atherosclerosis begins or what causes it isn't

known, but some theories have been proposed. Many scientists think atherosclerosis starts because the innermost layer of the artery becomes damaged. This layer is called the endothelium. Three possible causes of damage to the arterial wall are:

- Elevated levels of cholesterol and triglyceride in the blood
- High blood pressure
- Cigarette smoke

Cigarette smoke greatly aggravates and speeds up the growth of atherosclerosis in the coronary arteries, the aorta and the arteries of the legs.



Because of the damage, over time fats, cholesterol, platelets, cellular debris and calcium are deposited in the artery wall. These substances may stimulate the cells of the artery wall to produce still other substances. This results in more cells accumulating in the innermost layer of the artery wall where the atherosclerotic lesions form. These

cells accumulate, and many of them divide. At the same time, fat builds up within and around these cells. They also form connective tissue.

The innermost layer of the artery becomes markedly thickened by these accumulating cells and surrounding material. If the wall is thickened sufficiently, the diameter of the artery will be reduced and less blood will flow, thus decreasing the oxygen supply.

Often a blood clot forms and blocks the artery, stopping the flow of blood. If the oxygen supply to the heart muscle is reduced, a heart attack can occur. If the oxygen supply to the brain is cut off, a stroke can occur. And if the oxygen supply to the extremities occurs, gangrene can result.



**Source: [www.AmericanHeart.org](http://www.AmericanHeart.org)**

Courtesy of Wellness Proposals