

# Research Reveals New Details About Atherosclerosis

“Recent research indicates that the build-up of cholesterol, or atherosclerosis, occurs in stages,” says Neil Stone MD, a cardiologist at Northwestern Memorial and a professor at Northwestern University Medical School.

A mature, “stable plaque” containing cholesterol and other substances, such as calcium, builds up gradually, growing into the center of an artery. It may restrict blood flow, but is less likely to rupture and cause a heart attack or stroke.

Stable plaque can cause chest pain, or angina, and can be diagnosed through stress tests and cardiac imaging. Researchers believe stable plaque evolves from another type of plaque called “unstable plaque.”

Unstable plaque is fresh cholesterol build-up that is hidden *within* blood vessel walls and resembles a thinly covered pimple. It is more likely to burst and form a blood clot, causing a heart attack or stroke. Unstable plaque has no warning symptoms and is difficult to diagnose. But reducing the cholesterol in the blood does have an impact.

“Research shows a strong correlation between high cholesterol levels and the incidence of heart disease and stroke,” says Mihai Gheorghiu MD, associate chief of Cardiology at Northwestern Memorial and a professor at Northwestern University Medical School. Cardiovascular disease, which includes heart disease and stroke, is the nation’s leading cause of death, causing 42 percent of all deaths in the United States and resulting in disability for 10 million Americans age 65 and older. A new report by the National Cholesterol Education Program says that two-thirds to three-quarters of Americans over 65 years of age have atherosclerosis.

## Why Should You Worry About Cholesterol?

Cholesterol is a fat-like substance produced naturally by the body to help form hormones, cell membranes and Vitamin D. A diet high in saturated fat allows extra cholesterol to enter your body, which can build up on artery walls, causing “hardening of the arteries.” Blockage in a coronary artery supplying blood to the heart may cause a heart attack; a blood clot in the carotid artery leading to the brain may cause a stroke or “brain attack.” A blockage in the limbs can cause a variety of symptoms, including pain and numbness. This is known as peripheral vascular disease.

To obtain an accurate picture of your cardiac risk, it is important to measure all three types of blood cholesterol. Triglycerides are a type of blood fat; low-density lipoprotein (LDL) is the “bad” cholesterol that sticks to artery walls; and high-density lipoprotein (HDL) is the “good” cholesterol that helps break down and remove excess cholesterol.

## What Is Your Risk?

“Feeling good does not necessarily mean you don’t need to be concerned about high cholesterol and

cardiovascular disease, since outward symptoms are not always present,” says Dr. Gheorghiu. “In fact, 70 to 80 percent of adults at risk are not getting the treatment they need because they are not aware of their condition.”

That’s why it’s important to know the factors that may put you at risk for cardiac disease. A key risk factor is simply being over 50 years of age; another is diabetes. Age or a family history of cardiovascular disease are risk factors that cannot be controlled. But you can have an impact on a number of the factors that play a significant role in your cardiovascular health.

## It’s Never Too Late to Lower Your Cholesterol

“Prevention is the key to decreasing your risk of cardiovascular disease,” says Dr. Stone. “In fact, studies show it’s never too late to lower your cholesterol, since older adults benefit from controlling cholesterol in similar ways as younger adults.”

The first line of prevention is to follow a healthy lifestyle:

- Maintain a healthy weight by eating a low-fat, low-calorie diet. This includes fruits, vegetables

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Test	Level in mg/dL (milligrams per deciliter of blood)		
	Desirable	Borderline (low risk)	High Risk
<b>Total Cholesterol</b>	below 200	200-239	240 or higher
<b>LDL (‘bad’) Cholesterol</b>	below 130	130-159	160 or higher
<b>HDL (‘good’) Cholesterol</b>	60 or higher	35-59	below 35
<b>Triglycerides</b>	below 200	200-400	above 400

**Note:** People with heart or blood vessel disease are already at risk and therefore should have an LDL of 100 mg/dL or less.