

NIH...Turning Discovery Into Health

Progress in Heart, Lung, and Blood Research

High Blood Cholesterol

Today, many people know that a diet high in saturated fat and cholesterol can lead to clogged arteries and heart attacks, but that was not always common knowledge. The landmark Framingham Heart Study of the National Heart, Lung, and Blood Institute (NHLBI), begun in 1948, helped identify the primary risk factors for heart disease. We now know that they include high blood pressure and cholesterol, smoking, obesity, diabetes, and physical inactivity. Through NHLBI health campaigns and clinical guidelines, the findings of the Framingham Heart Study have been disseminated as clear messages of actions people can take to improve their health, such as quitting smoking or eating healthier diets.

During World War II, before the NHLBI was established, two million Americans died from heart disease — many times more than died from conflict-related injuries in the war itself. Today, although heart disease remains the leading cause of death in the United States, changes in behavior and the widespread implementation of effective medical and surgical treatments, many of them developed with NHLBI support, have dramatically reduced the death rate. People are now also much more aware of their cholesterol level, due in part to routine blood tests that measure it.

In 1985, NHLBI-supported researchers Michael S. Brown, M.D., and Joseph L. Goldstein, M.D., were awarded the Nobel Prize in Physiology or Medicine for contributing to the understanding of cholesterol metabolism. Their discovery set the stage for an entirely new class of drugs, called statins, that block the normal way the body makes cholesterol. Statins have revolutionized heart disease prevention and treatment by helping millions of Americans who have heart disease, or are likely to develop it, to lower their cholesterol.



The NHLBI is a leader in the development of evidence-based clinical practice guidelines for physicians and their patients. Its most recent cholesterol guidelines—Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (ATP III; currently being updated) emphasize the need for people with multiple risk factors to take steps to address each of them. NHLBI-funded studies have revealed that people can inherit a tendency toward high blood cholesterol. This means we could one day have genetic tests to screen for high cholesterol risk and help prevent heart disease.

Imagine the Future...

Miniature plaque-detecting “smart” particles seek out clogged arteries and clear them without surgery.

Personal genome-screening determines people’s risk for high cholesterol, allowing them to prevent future heart disease.

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