## The Many Vital Roles of Cholesterol

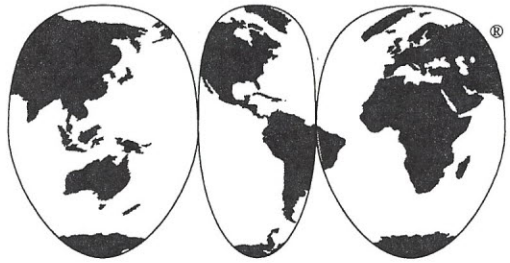
- Cholesterol is produced by almost every cell in the body.
- Cholesterol in cell membranes makes cells waterproof so there can be a different chemistry on the inside and the outside of the cell.
- Cholesterol is nature's repair substance, used to repair wounds, including tears and irritations in the arteries.
- Many important hormones are made of cholesterol, including hormones that regulate mineral metabolism and blood sugar, hormones that help us deal with stress, and all the sex hormones, such as testosterone, estrogen and progesterone.
- Cholesterol is vital to the function of the brain and nervous system.
- Cholesterol protects us against depression; it plays a role in the utilization of seratonin, the body's "feel-good" chemical.
- The bile salts, needed for the digestion of fats, are made from cholesterol.
- Cholesterol is the precursor of vitamin D, which is formed by the action of ultra-violet (UV-B) light on cholesterol in the skin.
- Cholesterol is a powerful antioxidant that protects us against free radicals and therefore against cancer.
- Cholesterol, especially LDL-cholesterol (the so-called bad cholesterol), helps fight infection.

## How to Avoid Heart Disease

- Don't worry about your cholesterol—the stress of unnecessary worry can contribute to heart disease.
- Do not take cholesterol-lowering drugs—they contribute to heart failure.
- Avoid processed food, especially foods containing processed vegetable oils and *trans* fats.
- Eat the meat, fat and organ meats of grass-fed animals.
- Eat plenty of wild-caught seafood.
- Do not consume protein powders, lean meat, egg whites without the yolks or skim milk. High-protein diets lacking the nutrients supplied by animal fats can deplete vitamin A, leading to heart disease.
- Eat liver at least once a week to ensure adequate levels of vitamin $B_{12}$, vitamin $B_6$, folic acid, iron and copper.
- Take cod liver oil and consume plenty of butter from grass-fed cows to ensure adequate levels of vitamins A, D and K.
- Maintain a healthy weight—neither too heavy nor too thin.
- Engage in moderate exercise in the out of doors.
- Do not smoke; avoid exposure to environmental toxins.

SOURCES AND FURTHER INFORMATION
The Cholesterol Myths by Uffe Ravnskov, MD, PhD
www.ravnskov.nu/cholesterol.htm
www.westonaprice.org/moderndiseases

# Myths & Truths about Cholesterol



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# Myths & Truths

MYTH: People with high cholesterol are more prone to heart attacks.
TRUTH: Young and middle-aged men with cholesterol levels over 350 are slightly more at risk for heart attacks. Those who have cholesterol levels just below 350 are at no greater risk than those whose cholesterol is very low. For elderly men and for women of all ages, high cholesterol is associated with a longer lifespan.

MYTH: Cholesterol & saturated fat clog arteries.
TRUTH: There is very little cholesterol or saturated fat in the arterial plaque or clogs. Most of the material is a calcium deposit akin to lime and most of the fatty acids are unsaturated.

MYTH: Eating saturated fat and cholesterol-rich foods will cause cholesterol levels to rise and make people more susceptible to heart disease.
TRUTH: Many studies show no relationship between diet and cholesterol levels; there is no evidence that saturated fat and cholesterol-rich food contribute to heart disease. As Americans have cut back on saturated fat and cholesterol-rich foods, rates of heart disease have gone up.

MYTH: Cholesterol-lowering drugs have saved many lives.
TRUTH: In the two most recent trials, involving over 10,000 subjects, cholesterol-lowering did not result in any improvement in outcome.

MYTH: Countries that have a high consumption of animal fat and cholesterol have higher rates of heart disease.
TRUTH: There are many exceptions to this observation, such as France and Spain. Furthermore, an association (called a "risk factor") is not the same as a cause. In wealthy countries where people eat a lot of animal foods, many other factors exist that can contribute to heart disease.

# Dangers of Statin Drugs

Modern cholesterol-lowering drugs act by inhibiting an enzyme (HMG-CoA reductase) needed for the formation of cholesterol in the liver. These HMG-CoA reductase inhibitors, called statins, are sold as Lipitor, Mevacor, Pravacol, Zocor, etc.

WEAKNESS and MUSCLE WASTING: This is the most common side effect of statin drugs, occurring in as many as one in three users. Muscle aches and pains, back pain, heel pain, weakness and slurring of speech result from statin interference with the production of Coenzyme $Q_{10}$ (Co-$Q_{10}$), needed for the muscles to function.These side effects are more common in active people and may not show up until three years after commencement of treatment.

HEART FAILURE: Rates of heart failure have doubled since the advent of statin drugs. The heart is a muscle that depends on a plentiful supply of Co-$Q_{10}$.

POLYNEUROPATHY: Tingling and pain in the hands and feet as well as difficulty walking occur frequently in those taking statins, conditions often blamed on "old age" rather than on the drug.

COGNITIVE IMPAIRMENT: Many patients have reported memory loss and brain fog, including total global amnesia (episodes of complete memory loss). The implications for pilots and those driving cars and trucks are profound.

CANCER: In every study with rodents to date, statins have caused cancer. Most human trials are not carried out long enough to detect any increase in cancer rates, but in one trial, breast cancer rates of those taking a statin were 1500 percent higher than those of controls.

DEPRESSION: Numerous studies have linked low cholesterol with depression.

# If It Isn't Cholesterol, What Causes Heart Disease?

Many scientists have put forth valid theories for the epidemic of heart disease in western societies. They include:

DEFICIENCY OF VITAMINS A and D: Back in the 1930s, Weston A. Price, DDS, observed that rates of heart attack rose during periods of the year when levels of these fat-soluble vitamins in local butter went down.

DEFICIENCIES OF VITAMINS $B_6$, $B_{12}$ and FOLIC ACID: Kilmer McCully, MD, PhD, demonstrated that these deficiencies lead to elevated levels of homocysteine, a marker for heart disease.

TRANS FATTY ACIDS: Fred Kummerow, PhD, and many others have linked heart disease to the replacement of saturated fats with *trans* fatty acids; saturated fats actually protect against heart disease in many ways.

MINERAL DEFICIENCIES: Deficiencies of magnesium, copper and vanadium have been linked to heart disease.

MILK PASTEURIZATION: J.C. Annand, a British researcher, observed an increase in heart disease in districts that implemented pasteurization compared to those where milk was still sold unpasteurized.

STRESS: Heart attacks often occur after a period of stress, which depletes the body of many nutrients.

Unfortunately, little research money is available for researchers to study these theories; most research on heart disease is funded through the National Heart, Lung, and Blood Institute, which is firmly committed to the flawed hypothesis that cholesterol and saturated fat cause heart disease.