

The Facts on Cholesterol and Fats

Glossary

CHOLESTEROL

Cholesterol is a fatlike substance that is found in the tissue of humans and other animals. It plays important roles in cell membrane structure, certain hormones, and manufacturing vitamin D. Our livers produce all the cholesterol that we need for these important functions. Excess cholesterol can contribute to atherosclerosis (clogging of the arteries). When health care professionals look at the results of a blood test, they want to see a *total* cholesterol level of 200 mg/dl *or less*. The total cholesterol is the sum of the cholesterol in LDL, HDL and triglyceride particles.

LDL CHOLESTEROL (Low Density Lipoprotein)

LDL carries cholesterol through the bloodstream, dropping it off where it is needed for cell building and leaving any unused residue of cholesterol as plaques on the walls of the arteries. For LDL, or low-density lipoprotein, a healthy reading for someone with diabetes is 100 mg/dl *or less*. If you have diabetes and heart disease, the desired number is 70 mg/dl *or less*. LDL is often called "bad cholesterol" because it transports cholesterol to cells. And cholesterol from this particle can get deposited in blood vessel walls.

HDL CHOLESTEROL (High Density Lipoprotein)

As it circulates in the bloodstream, HDL picks up cholesterol that has been deposited in the arteries and brings it back to the liver for reprocessing or removal. For HDL, or high-density lipoprotein, a healthy reading for women is 55 mg/dl *or more*. For men, the comparable figure is 45 mg/dl *or more*. HDL is considered the "good cholesterol" because it is like a garbage scavenger – this particle picks up cholesterol from blood vessels and other locations and carries it back to the liver for disposal.

TRIGLYCERIDES

Triglycerides are fats that circulate through the bloodstream along with cholesterol. For triglycerides, otherwise known as blood fats, a healthy reading is 150 mg/dl *or less*. The triglyceride blood particles carry triglycerides all throughout the body: intestines to liver, liver to fat and other cells, fat and other cells back to the liver. A small amount (about one-fifth) of the triglyceride blood particle is actually cholesterol. So, when triglycerides go up, the total cholesterol also goes up, and the reverse holds true – when the triglycerides are lower, the total cholesterol is lower.

DIETARY CHOLESTEROL

Cholesterol is found in all foods from animal sources: meat, eggs, fish, poultry and dairy products. Some animal foods contribute substantial amounts of cholesterol, while others contribute only small amounts. There is no cholesterol

in any plant-derived foods. Excess dietary cholesterol may increase blood cholesterol, which can increase the risk of coronary heart disease.

SATURATED FATS

Fats that are naturally solid at room temperature are saturated fats. Saturated fats are found in animal products like lard, fats in meat, chicken skin, butter, ice cream, milk fat, cheese, etc. Tropical oils (coconut oil and palm oil) are also highly saturated. Dietary saturated fats tend to increase blood cholesterol levels, which in turn increases risk of coronary heart disease.

HYDROGENATED FATS and TRANS-FATS

Hydrogenation is a chemical process that changes liquid vegetable oils into semi-solid *or* solid fats. During the process of hydrogenation the chemical structure of the fat changes to a form called trans. Examples are shortening and margarine. Trans-fats are often found in bakery products, crackers, cookies and restaurant fried foods. Check label ingredients for hydrogenated fats. Also, some food labels now list grams of trans-fat under the Total Fat section. Using trans-fats will tend to lower HDL "good cholesterol" and increase LDL "bad cholesterol." *These fats should be strictly limited.*

POLYUNSATURATED FATS

Polyunsaturated fats are vegetable oils that are liquid at room temperature. Examples: safflower, corn, soybean, cottonseed, and sunflower oils. Using polyunsaturated fats tends to lower LDL "bad cholesterol," but can also lower HDL "good cholesterol" if eaten in excess. However, overall they tend to improve the ratio of good to bad cholesterol when substituted for saturated or trans-fats. Polyunsaturated fats are considered a heart healthy choice.

MONOUNSATURATED FATS

Monounsaturated fats are vegetable oils that are liquid at room temperature. Examples: olive oil, peanut oil, avocados, nuts and canola oil. Replacing saturated fats in the diet with monounsaturated fats can help lower LDL "bad cholesterol" without lowering the HDL "good cholesterol". This makes monounsaturated fats a heart healthy choice.

OMEGA-3 FATTY ACIDS

Omega-3 fatty acids help protect against hypertension, coronary heart disease and stroke. They do this by lowering triglycerides and total cholesterol, while raising HDL "good cholesterol". They also discourage unwanted blood clotting. Omega-3 fatty acids are found in fatty fish such as tuna, salmon, mackerel, herring, sardines, sea bass, pompano, lake trout, and halibut. Vegetarian sources include flax seeds, walnuts, soybeans, and their respective oils. Additional sources include canola oil, tofu, and soy milk.

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