



Cholesterol & Fats: What's the Connection?

Fat in the blood

There are several types of fat that circulate in your blood. Cholesterol is one of those fats. Your body needs cholesterol for many different purposes such as making cell membranes, vitamin D and hormones.

1. Low Density Lipoproteins (**LDL**) are often referred to as “bad” cholesterol because high levels of LDL in the blood promote the build-up of plaque on the arterial walls and increase your risk of cardiovascular disease.
2. High Density Lipoproteins (**HDL**) are often referred to as the “good” cholesterol because they help carry the bad (LDL) cholesterol away from the arterial walls.

Triglycerides are not a form of cholesterol, however, they are a type of fat found in the blood. High levels of triglycerides are often linked to excess weight, alcohol consumption and diabetes.

Cholesterol, Heart Disease and Stroke:

High blood cholesterol is a major risk factor for heart disease and stroke. By lowering your cholesterol, you can significantly reduce your risk of heart disease and stroke. High cholesterol can lead to a build up of plaque in the arterial walls and narrowing of your arteries, a process called atherosclerosis, which can make it harder for blood to flow through your heart and body, putting you at increased risk of circulatory problems, heart disease and stroke.

Dietary fats, oils and cholesterol

You need a certain amount of fat in your diet for healthy functioning. Oils and fats supply calories and essential fats and help our bodies absorb fat-soluble vitamins such as A, D, E and K. Fat also acts as an insulator and thus maintains body temperature and protects internal organs from shock and injury.

The *type* of fat consumed is as important for health as the total *amount* consumed. That's why it's important to choose healthier unsaturated fats most of the time. Eating too much and the wrong kinds of fats (saturated and trans fats) may cause an unhealthy imbalance, raising the bad LDL cholesterol and lowering the good HDL cholesterol. This can increase your risk of high blood pressure, narrowing of the arteries (atherosclerosis), heart attack and stroke.

Canada's Food Guide recommends that you include a small amount 30 to 45 mL (2 to 3 tablespoons) of added unsaturated fat each day (also known as mono- and polyunsaturated fat). This includes oil used for cooking, salad dressings and mayonnaise.

Types of Fats in the Diet

Monounsaturated fats

These have been shown to improve blood cholesterol levels by raising the good (HDL) cholesterol and lowering the bad (LDL) cholesterol. This type of fat is found in olive oil, canola oil, peanut oil, avocados and some nuts such as almonds, pistachios, cashews, pecans and hazelnuts.

Polyunsaturated fats

These fats can lower bad cholesterol levels (LDL cholesterol). One type of polyunsaturated fat is omega-3 fatty acids, which can help prevent blood clotting, reducing the risk of stroke and also helps lower triglycerides, a type of blood fat linked to heart disease. The best sources of omega-3 fat are cold-water fish such as salmon, mackerel, sardines, herring, and rainbow trout. Other sources are canola and soybean oils, omega-3 eggs, flaxseed, walnuts, pecans and pine nuts. If you feel that you are not able to get enough Omega 3's in your diet, you may want to ask your Doctor or Dietitian about a supplement.

Another type of polyunsaturated fat is omega-6. It helps lower LDL cholesterol, but in large amounts its also thought to lower the good (HDL) cholesterol. Eat it in moderation. Its found in safflower, sunflower and corn oils, non-hydrogenated margarine and nuts such as almonds, pecans, brazil nuts and sunflower seeds. It is also in many prepared meals.

Saturated fat

This can raise the bad LDL cholesterol. Foods high in saturated fat include fatty meats, full-fat dairy products, butter, hard margarines, lard, coconut oil and palm oil. You want to limit this kind of fat in your diet to less than 10% of your dietary intake.

Trans fat

Like saturated fat, trans fat raises LDL cholesterol, but it also decreases HDL cholesterol! Try to limit products that list vegetable oil shortening or partially hydrogenated oil in the ingredients. Trans fat is found in partially hydrogenated margarines, deep-fried foods from fast-food outlets (fries, doughnuts), and many packaged crackers, cookies, coffee creamers and commercially baked products.

How much fat should you eat in a day?

Remember that since all fats are calorie-heavy, you'll need to use even the healthier ones in moderation. A healthy eating pattern includes between 20% to 35% of your day's calories from fat. For women, this works out to 45 to 75 grams of fat a day, and for men, 60 to 105 grams of fat a day. The amount of fat a child or adolescent needs depends on their height, build, gender and activity level. Young children need a slightly higher amount of fat for growth and development but this need decreases as they age. A tablespoon (15 mL) of oil, for example, equals about 14 grams.

What is dietary cholesterol?

The liver makes about 80 percent of the cholesterol in your body. The other 20 percent comes from the foods you eat. The foods that raise your blood cholesterol the most are saturated fat and trans fat in such foods as fatty meat and whole-fat dairy products, snack foods and ready-

prepared foods. Foods that have high levels of dietary cholesterol include egg yolks, organ meats, shrimp, squid and fatty meats.

Dietary cholesterol only has an effect in some people. From a nutrition perspective, the best way for controlling blood cholesterol is to eat a healthy diet that is lower in fat, especially saturated and trans fat. Your doctor will advise you on how much food containing dietary cholesterol you should eat.

New Research on Vitamin D:

Some recent research has shown that low vitamin D levels in humans is linked to a greater risk of a heart attack or stroke compared to those with higher levels of Vitamin D and high blood pressure. There have also been past research studies that have shown that higher Vitamin D levels are associated with a decreased risk of Diabetes Type II, a risk factor for heart disease. Vitamin D is also very Important for bone health as it helps the body absorb calcium. In adults, a deficiency in Vitamin D can lead to Osteoporosis. Health Canada recommends 200-600 international units (IU's) of Vitamin D per day based on age, race and exposure to sun.