



How to manage your cholesterol



Heart&Stroke™



What is blood cholesterol?

Cholesterol is a fat found in the blood. There are two main types of blood cholesterol: high density or HDL cholesterol and low density or LDL cholesterol.

LDL cholesterol is referred to as 'bad' cholesterol that can form plaque or fatty deposits on your artery walls and block blood flow to the heart and brain, if your LDL level is high.

HDL cholesterol is referred to as 'good' cholesterol because it helps to remove excess cholesterol from the body.

Cholesterol is naturally made by your body but is increased through our diet.

Why **blood cholesterol** matters

High blood cholesterol is one of the major controllable risk factors for coronary heart disease, heart attack and stroke. As your blood cholesterol rises, so does your risk of coronary heart disease.

Dietary cholesterol — found in meat, poultry, eggs and regular dairy products — has less impact on blood cholesterol than foods with saturated and trans fat.

Foods containing saturated fat include processed foods, fatty meats, full-fat milk products, butter and lard. Foods containing trans fat include partially hydrogenated margarines, deep-fried foods and many packaged crackers, cookies and commercially baked products.

Understand your risk

The only way to know if you have high cholesterol levels is to have a simple blood test.

Canadian guidelines recommend having your cholesterol tested if you:

- ☐ Are a male over 40 years of age
- ☐ Are female over 50 years of age and/or post-menopausal
- ☐ Have heart disease, diabetes or high blood pressure
- ☐ Have a waist circumference greater than 94 cm (37 inches) for men and 80 cm (31.5 inches) for women
- ☐ Smoke or have smoked within the last year
- ☐ Have erectile dysfunction
- ☐ Have a family history of heart disease or stroke

The blood test will measure three kinds of fat in your blood. Both HDL (good cholesterol) and LDL (bad cholesterol) and a third fat, triglycerides. High triglycerides also increase your risk factor for heart disease.



Understand your test results

Your test results will include:

- HDL cholesterol (good cholesterol) – Good to have a high number
- LDL cholesterol (bad cholesterol) – Good to have a low number
- Non HDL cholesterol (total cholesterol – HDL cholesterol)
– Good to have a low number
- Triglycerides – High reading may be tracked over time

Your doctor will review your test results along with your risk factors, medical history and present health.

Familial hypercholesterolemia or inherited high cholesterol

People with familial or inherited high cholesterol levels have a much higher risk of heart disease early in life.

If you have a personal or family history of premature heart disease and/or a very high cholesterol level at a young age, you should speak to your physician to see if you are a candidate for genetic testing. If you or any of your family members have familial hypercholesterolemia, it is very important to be treated early.

Tracking your cholesterol levels

You may track your levels using this grid. This can help you notice any changes over time.

Type of lipid	Total cholesterol	LDL cholesterol	HDL cholesterol	Non HDL cholesterol	Triglycerides
Target levels set by your doctor based on your risk factors*					

Your test results

Date	Total cholesterol	LDL cholesterol	HDL cholesterol	Non HDL cholesterol	Triglycerides

*Your doctor will help establish a target level for you based on your personal risk factors.



Prevention and management of high cholesterol

Making positive lifestyle changes can help you prevent heart disease and control your high blood cholesterol levels.

What you eat has a huge impact on your health. Highly-processed foods are a major source of saturated fat and are usually high in calories and sugar. Saturated fat increases LDL or bad cholesterol levels in the blood.

If you eat a healthy, balanced diet, with few or no highly-processed foods and appropriate portion sizes, you will reduce your saturated fat intake.

The Heart and Stroke Foundation recommends that you:



1. Eat a healthy balanced diet

- Choose a variety of whole and minimally processed foods at every meal. This means foods that are either not packaged or have few ingredients.
- Fill half your plate with vegetables and fruit at every meal. Choose vegetables and fruit for snacks. Select fresh, frozen or canned vegetables and fruit. You want them to be plain, without sauce, sugar or salt added.
- Choose whole grains. Look for whole grain breads, barley, oats (including oatmeal), quinoa, brown rice, bulgur, farro, etc.
- Mix up your protein foods. Choose more vegetarian options such as beans, lentils, tofu and nuts. Include vegetarian options as often as possible in your weekly meal plan. Make sure your meat is lean, poultry without the skin and include fish a couple of times per week. Limit your portion sizes. Choose lower fat dairy products or alternatives with no added sugar. Select 1% or skim milk, plain yogurt and lower fat, lower sodium cheeses.
- Choose lower fat dairy products or alternatives with no added sugar. Select 1% or skim milk, plain yogurt and lower fat cheeses.
- Plan healthy snacks with at least 2 different types of food. For example try: hummus and baby carrots; apple wedges and lower fat cheese or plain yogurt with berries.
- Drink water or lower fat plain milk to satisfy thirst. Avoid sugary drinks including soft drinks, sports drinks, sweetened milk or alternatives, fruit drinks, 100% fruit juice and ready-to-drink sweetened coffees and teas.

NOTE:

If your blood cholesterol level is high, your physician or dietitian may recommend restricting your intake of foods high in dietary cholesterol such as egg yolks, organ meats, full-fat dairy products and processed meats.



2. Cook and eat more meals at home

Cooking at home allows you to select whole and minimally processed foods.

- Develop and share skills in food preparation and cooking with your family.
- Buy a healthy cookbook or use the healthy recipes at heartandstroke.ca/recipes. Select the top ten recipes your family loves and get everyone involved in the meal preparation.
- Reduce the amount of sugar, salt and solid fats used in your favourite recipes.



3. Make eating out a special occasion

Eating out usually results in you consuming large amounts of food, more fat, salt and sugar.

- Try to limit the number of times you eat in a restaurant per month.
- When you do eat out, choose restaurants that serve freshly made dishes using whole and minimally processed foods and provide nutrition information.
- Share meals or ask for half the meal to be packed up to eat the next day.



4. Achieve and maintain a health weight

Being overweight or obese increases your LDL or bad cholesterol level, lowers your HDL or good cholesterol level and raises your triglyceride levels. Reducing your weight is a positive way to reduce your blood cholesterol levels.



5. Physical activity

Being physically active will help improve your cholesterol levels and general heart health. Aim for 150 minutes a week. That is less than 25 minutes per day! Choose activities you like. Cycling, swimming, gardening and walking are great ways to keep active.



6. Be smoke-free

Smoking is a risk factor for heart disease. It reduces the level of your HDL 'good' cholesterol. Once you quit, within a few weeks your HDL levels will start to rise.





Know your fats

Dietary fats and oils provide our bodies with energy, provide essential fats and also help absorb fat soluble vitamins such as A, D, E and K.

There are different types of fats: Monounsaturated fats, polyunsaturated fats (Omega 3 and 6), trans fats and saturated fats.

Both the quality and amount of fats you eat matters. It is important to not focus on just one nutrient; it is your overall diet that will make the biggest difference to your health. For example, foods marketed as “low fat” can be highly processed and contain lots of refined carbohydrates, calories, sugar and sodium.

Healthy eating tip	Type of fat	Source
Choose more often	Omega 3 - polyunsaturated	Cold-water fish: Salmon, trout, mackerel, sardines, herring Oils: Canola, soy Nuts and seeds: Walnuts, flaxseed (ground), chia seeds Omega-3 eggs Legumes: Soybeans and products, such as tofu
	Monounsaturated	Oils: Olive, canola, peanut Non-hydrogenated margarine from these oils Salad dressings from these oils Nuts and nut butters: Almonds, pecans, hazelnuts, peanuts Avocados
Eat in moderation	Omega 6- polyunsaturated	Oils: Safflower, sunflower, corn Non-hydrogenated margarine from these oils Salad dressings from these oils Nuts, nut butters and seeds: Pine nuts, sunflower seeds
Choose less often	Saturated	Processed meats: Sausages, bologna, salami, hot dogs, liver or meat paté High-fat meats: Lard, regular or medium ground beef, prime rib, lamb, poultry with skin, duck fat, visible fat from meat Full-fat dairy products: Whole milk, high-fat cheese, cream, butter Oils: Coconut, palm, palm kernel oil
Avoid	Trans	Shortening Hard, hydrogenated margarine Commercial baked goods: Donuts, cookies, crackers, croissants, pastries, pies, commercial muffins Products containing partially hydrogenated oils: Fast food, deep fried food

Nutrition labeling

Almost every packaged food will have an ingredient listing which lists ingredients in descending order starting with highest amount to lowest. Added sugars are grouped together in the ingredient list. If sugar is near the beginning of the ingredient list, that food will be high in added sugar.

Packages also contain a Nutrition Facts Table. This provides information on a single serving size and the calories and nutrients a serving contains.

All of the nutrient information is based on a single serving. You will find information on the amount of fat, cholesterol, sodium, carbohydrate, fibre, sugars, protein and some vitamins and minerals.

When reviewing the Nutrition Facts Table on a package, always look at the sodium, saturated fat and sugar values. If you have a high cholesterol level, you may also need to look at the cholesterol value. The % Daily Value (DV) on the label will tell you whether there is a lot or a little of a nutrient in a single serving.

Remember, reducing your intake of processed foods is the simplest way to achieve a healthier diet.





Plant sterols

Research shows that plant sterols can help lower LDL (bad cholesterol). Plant sterols occur naturally in small amounts in vegetable oils, nuts, whole grains, vegetables and fruit.

It is recommended that you consume 2g of plant sterols per day to help lower your LDL cholesterol.

It is not possible to obtain enough plant sterols naturally from foods.

Foods in Canada are now allowed to have up to 1g of plant sterols per serving added to them. Look for foods fortified with plant sterols such as mayonnaise, margarine and salad dressing.



Medication to lower cholesterol

Sometimes diet and exercise are not enough to lower your blood cholesterol levels. Several drugs are available to lower your blood cholesterol. Your doctor will help you decide which one is best for you. These medications do not cure high blood cholesterol or replace a healthy lifestyle.

This chart lists commonly prescribed cholesterol lowering medications. The generic name is listed first then — in brackets the most commonly prescribed brand name(s). This list does not include every brand name. If your prescription medication is not on the list, ask your pharmacist or other healthcare provider for more information.

Medication class

Use, effects and important information

Statins

- Atorvastatin (Lipitor)
- Fluvastatin (Lescol, Lescol XL)
- Pravastatin (Pravachol)
- Rosuvastatin (Crestor)
- Simvastatin (Zocor)
- Lovastatin (Mevacor)

- Blocks an enzyme that your liver uses to make cholesterol. As a result, your liver makes less cholesterol and picks up LDL (bad cholesterol) from your bloodstream.
- The most widely used kind of medicine for lowering cholesterol.

Cholesterol absorption inhibitor

- Ezetimibe (Ezetrol)

- Lowers the levels of total and LDL-cholesterol in your blood.
- Reduces the absorption of cholesterol from the intestines. The resulting decreased delivery of cholesterol to the liver prompts more clearance of LDL (bad cholesterol) from the blood stream.

Bile acid sequestrants (resins)

- Cholestyramine (Questran)
- Colesevelam (Lodalis)
- Colestipol (Colestid)

- Lowers LDL cholesterol.
- Your body uses cholesterol to make bile, an acid used in digestion. Resins or bile acid sequestrants bind to bile, preventing them from being sent back to the liver. In response, your liver makes more bile, and takes up more LDL (bad cholesterol) from the blood stream to do this.

Fibric acids (fibrates)

- Fenofibrate (Lipidil)
- Bezafibrate (Bezalip)
- Gemfibrozil (Lopid)

- Lowers your triglycerides. Lowering your triglyceride levels can increase the levels of HDL (good cholesterol).

Niacin

- Helps to raise HDL (good cholesterol) and lowers LDL (bad cholesterol) as well as triglycerides.
- A form of vitamin B that should only be taken to lower cholesterol when prescribed by your doctor.

PCSK9 inhibitors

- Evolocumab (Repatha)

- Prescribed if your cholesterol levels are not sufficiently controlled with diet and other cholesterol-lowering medications.
- Helps the liver to lower total cholesterol, LDL (bad cholesterol) and triglycerides in the blood and also raises HDL (good cholesterol).

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