



There are usually no signs or symptoms of high blood cholesterol; many people don't know their level is too high. Everyone 20 years of age and older should have their cholesterol levels checked at least once every five years, as discussed with his/her doctor.

**HITTING YOUR CHOLESTEROL TARGETS**

Many scientific studies have shown that you can significantly lower your risk of heart attack or stroke by reaching target lipid levels. Your doctor will set targets with you based on your personal risk factors, age, total cholesterol and HDL levels, smoking status, and blood pressure.

In general, target cholesterol levels (in mmol/L) are:

Total cholesterol	Less than 5.2
LDL	Less than 3.5
HDL	Higher than 1.0 for men; higher than 1.3 for women
Total cholesterol/ HDL ratio	Less than 5.0
Triglycerides	Less than 1.7

If your doctor determines that you are at "high" risk for heart disease events in the future (e.g. you have a history of heart disease, you have diabetes and are over 30, you have several risk factors) he or she may recommend more aggressive targets (i.e. LDL less than 2.0 mmol/L and a total cholesterol/HDL ratio of less than 4.0).

It is important for you to know your cholesterol numbers and targets. If you aren't sure, ask your doctor at your next appointment. It's a good idea to write them down. Keeping track of your levels can help keep you motivated towards reaching your goals. Make sure you keep up your healthy diet and exercise routines even if you are taking medication. Your heart health depends on it!



**WHERE TO FIND MORE INFORMATION**

**The Heart and Stroke Foundation of Canada**  
 222 Queen St., Suite 1402  
 Ottawa, Ontario K1P 5V9  
 Phone: 613-569-4361  
*Check your local phone listings for the regional office nearest you or visit their website.*  
[www.heartandstroke.com](http://www.heartandstroke.com)

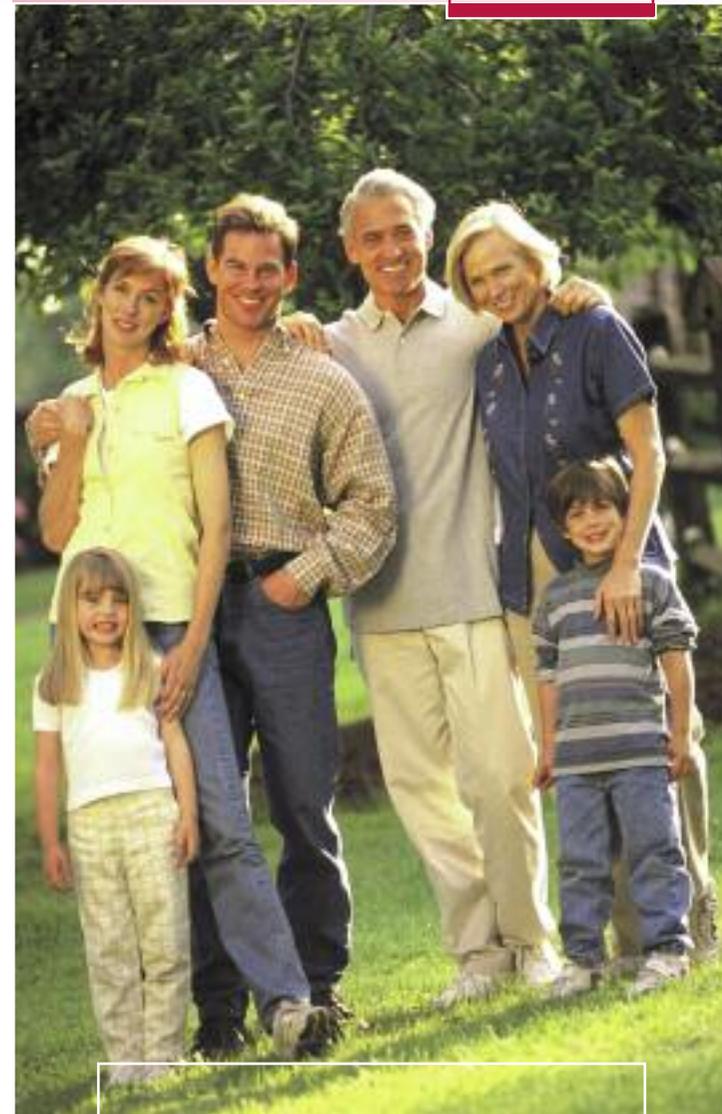
**Health Canada- Healthy Heart Kit**  
[www.phac-aspc.gc.ca/ccdpc-cpcmc/hhk-tcs/english/index\\_e.htm](http://www.phac-aspc.gc.ca/ccdpc-cpcmc/hhk-tcs/english/index_e.htm)

**Health Canada- On the Road to Quitting**  
<http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/quit-cesser/now-maintenant/road-voie/index-eng.php>

**Canada's Physical Activity Guide**  
[www.paguide.com](http://www.paguide.com)

**Eating Well With Canada's Food Guide**  
[www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php)

The information found in this PROfile health brochure is of a general nature only. It is not intended to replace the advice of your pharmacist, physician, or other healthcare provider. If you have questions relating to your specific health concerns, please contact your personal healthcare provider.



**Your PROfile Pharmacist**  
 has many resources available to help you manage your cholesterol and is always pleased to discuss your health concerns!

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# Cholesterol Management





## WHY IS TOO MUCH CHOLESTEROL A PROBLEM?

Cholesterol is a fat (“lipid”) found in the blood and every cell of the body. The liver makes about 80% of the cholesterol in our bodies. The other 20% comes from our diet, particularly from eating foods rich in saturated or trans fats.

Our bodies couldn’t function without cholesterol- it is an important building block to make cell membranes, hormones and vitamin D. However, when we have too much of the “bad” type of cholesterol in our blood, we are much more likely to get heart disease.

High blood cholesterol is also known as hypercholesterolemia, hyperlipidemia, or dyslipidemia. Cholesterol is transported through the blood by 2 main lipoproteins:

**Low density lipoproteins (LDL)** or “bad cholesterol”: excess cholesterol carried by LDL builds up on the walls of blood vessels to form “plaques”. This condition is known as “atherosclerosis” or narrowing of the arteries. As the arteries become clogged and damaged, the risk for problems like angina, heart attack, and stroke goes up.

**High density lipoproteins (HDL)** or “good cholesterol”: higher HDL levels may help protect from atherosclerosis, heart attack, and stroke by carrying excess blood cholesterol away from blood vessel walls back to the liver, where it is removed from the body.

**Triglycerides** are a different type of fat found in our blood, but they are often measured at the same time as cholesterol levels. High triglyceride levels are linked to an increased risk of heart disease.



## HOW CAN I IMPROVE MY CHOLESTEROL LEVELS WITHOUT MEDICATION?

Almost 40% of Canadians have high blood cholesterol. The first step for everyone looking to improve their cholesterol levels is to adopt a basic heart-healthy lifestyle.

**Diet** - Eat a heart-healthy diet low in saturated and trans fats, and rich in fruits, vegetables, and whole grains. Increasing the soluble fibre in your diet (oat bran, kidney beans, rice bran, citrus fruits) can help lower blood cholesterol up to 10%.

The Heart and Stroke Foundation recommends that 20-35% of our daily calories come from fat. All fats are not equal when it comes to their effect on cholesterol levels!

- **Good choices:** monounsaturated and polyunsaturated fats (found in vegetable oils, nonhydrogenated margarines, nuts and seeds) and omega-3 fatty acids (found in “fatty” fish like salmon, omega-3 eggs, flaxseed, walnuts, pecans). These fats may improve cholesterol levels when used in place of saturated fats.
- **Avoid or limit saturated and trans fats** (fatty meats, egg yolks, full-fat dairy products, butter, lard, shortening, palm and coconut oils, fast foods, snack foods, and many prepared foods). These choices are most likely to have a negative effect on your cholesterol levels.

**Weight** - Being overweight tends to increase the levels of “bad” LDL and triglycerides while lowering your “good” HDL. Losing just 5 kg can have important health benefits, including a lower risk for heart disease.

**Physical activity** - Regular exercise can cut your risk of heart disease and stroke nearly in half! Aim to accumulate 30-60 minutes of moderate activity on most (or all) days of the week. This can raise your “good” HDL levels.

**Nonsmokers** tend to enjoy higher “good” HDL levels than smokers. Smokers have a 70% higher risk of heart disease than non-smokers. Be smoke-free.

If your triglycerides are high, the following can help bring them down: more physical activity, limiting alcohol, and trading sugary, high fat foods for more fruits, vegetables, and whole grains.



Some people have an inherited tendency for high cholesterol levels. Sometimes, medication needs to be added to diet and exercise to reach goal cholesterol levels. Several different types of medication are available. Your doctor will work with you to choose one that will improve the type of blood fat (LDL, HDL, triglyceride) that is not at target levels.

**Statins** - These medications are used most frequently for cholesterol lowering because they are the most effective for reducing levels of LDL (bad cholesterol). They also increase levels of HDL (good cholesterol) to varying degrees. Statins work in the liver to block cholesterol production.

Statins can reduce LDL cholesterol by up to 50% or more. Lowering LDL can reduce the risk of heart attack by 40%. Common statin drugs include atorvastatin, lovastatin, simvastatin, pravastatin, and rosuvastatin. Drinking grapefruit juice with the first three examples can increase your risk of side effects such as muscle pain or rare liver problems. Talk with your PROfile Pharmacist if you have any concerns about this or any other potential drug interactions.

**Fibrates** - These medications are used mostly for their triglyceride-lowering effects. They also help to increase HDL levels. Examples of fibrates include fenofibrate and bezafibrate.

**Niacin** - This medication is a type of vitamin B that is used in large doses to lower LDL, raise HDL, and reduce triglycerides. Facial flushing is a common side effect of this medication.

**Resins** - These medications lower cholesterol by binding with bile acids in the intestinal tract. Since bile acids are tied up, the liver is required to take cholesterol out of the blood to make more of this digestive substance. Resins can interact with many medications. Your PROfile Pharmacist can recommend a schedule for taking your medication that best suits your needs and lifestyle.

**Ezetimibe** - This medication blocks the absorption of cholesterol ingested from food. It can be used alone, but is usually combined with a statin.