

*straight talk*  
about cholesterol



Canadian eggs are part of the Heart & Stroke Foundation's Health Check™ program. Health Check™ is a national food information program developed to help consumers make healthy food choices.

\*Enjoying a variety of foods is part of healthy eating. Eggs are a nutritious food and, like many foods, should be eaten in moderation. Canadian egg producer's financially support the Health Check™ education program. This is not an endorsement. For more information, please visit [www.healthcheck.org](http://www.healthcheck.org).

**Developed by the Registered Dietitians at Egg Farmers of Canada.**

Aussi disponible en français

For more information visit us at [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca). To contact a dietitian or for general inquiries e-mail us at [contactus@livingwellwithcholesterol.ca](mailto:contactus@livingwellwithcholesterol.ca).

# healthy choices

## A healthy lifestyle starts with you

Good health is all about making the right choices. If you're concerned about cholesterol and want to reduce your risk of heart attack and stroke, the best place to start is by making a few simple changes to your lifestyle.

Choosing nutritious foods more often, exercising regularly, reducing the amount of unhealthy fat in your diet – it doesn't take much to make a BIG difference in your health. **And it all starts with you.** So take charge of your life and start making healthy choices today. Find out what you can do to help keep your cholesterol under control.

Also visit us online at [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca).



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## What is cholesterol?

Cholesterol is a soft waxy substance produced mainly by your liver. Cholesterol is found in every cell of your body and helps to maintain your nervous system, skin, muscles, liver, intestines and heart.

### What is it used for?

People often think that all cholesterol is bad for you. But cholesterol plays an important role in keeping your body healthy. It is used to build cell walls and to produce vitamin D, digestive juices and many hormones. Your body simply cannot function properly without a certain amount of cholesterol.<sup>1</sup>

### Types of Cholesterol

There are two types of cholesterol: **blood** and **dietary** cholesterol.

**Blood** cholesterol is produced by your liver and makes up 80% of the cholesterol circulating in your bloodstream. The other 20% is absorbed from the foods you eat. There are two types of blood cholesterol: HDL (“good”) cholesterol and LDL (“bad”) cholesterol.

**Dietary** cholesterol is found mainly in foods of animal origin, such as red meat, poultry, dairy products, egg yolks and certain types of shellfish.

### Did you know?

Your body performs a delicate balancing act to keep your blood cholesterol at a healthy level. If you eat foods high in cholesterol, your body naturally compensates by reducing the amount of cholesterol produced by your liver. If you don't get much cholesterol from your diet, then your liver increases cholesterol production to meet your body's needs.

### Is cholesterol a health concern?

Cholesterol is not a health concern if you maintain healthy blood cholesterol levels. However, too much cholesterol (LDL, triglycerides) in your bloodstream has been linked to serious health problems, such as heart disease, stroke and diabetes.

## Good and bad cholesterol

Cholesterol travels through the bloodstream attached to certain proteins. This combination of cholesterol and protein is called a lipoprotein. When you hear people talking about “**bad**” and “**good**” cholesterol, they are usually referring to the two major types of lipoproteins:

### Low-density lipoproteins or LDL cholesterol

carry cholesterol from your liver to the rest of your body, where it is used for cell growth and repair.

If you have too much LDL in your bloodstream, cholesterol can build up on the walls of your arteries, forming deposits called plaque. Plaque deposits can narrow your arteries, reducing the flow of blood to your heart. This gradual narrowing and clogging of the arteries is known as atherosclerosis.

Plaque can also break off from the artery walls, forming blood clots that may cause heart attack, stroke or sudden death. Because high levels of LDL can put you at risk for heart disease and other serious illnesses, it is often referred to as “**bad**” cholesterol. Your goal should be to keep your LDL levels low.

### High-density lipoproteins or HDL cholesterol

remove LDL cholesterol from your arteries and carry it back to the liver, where it is eliminated as waste.

HDL is known as “**good**” cholesterol because it reduces the amount of LDL in your bloodstream and helps prevent plaque from building up in your arteries. You should keep your HDL levels high to protect your heart from disease.

### What causes high blood cholesterol?

The causes of high blood cholesterol are complex. Your family history, age and even your gender can put you at risk for high cholesterol. You'll find more information about the risk factors for high cholesterol on page 11 or by visiting [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca).

## You don't have to limit dietary cholesterol

If you are healthy and eating a well-balanced diet, you don't have to limit dietary cholesterol. In fact, avoiding nutritious foods like eggs, lean meats and dairy products may actually do you more harm than good because it deprives your body of nutrients you need for good health.

### Choose lower fat foods more often

Most healthy adults are able to maintain normal blood cholesterol levels simply by living a healthy lifestyle. One of the most important strategies for controlling your cholesterol levels is to reduce the amount of fat in your diet. Dietary fat such as saturated and *trans* fats is much more likely to increase your blood cholesterol levels than dietary cholesterol.

#### Did you know?

A large, long-term study showed that people who ate 5 or more eggs a week had a **lower risk of heart disease** than people who ate less than 1 egg per week.<sup>5</sup>



## The fat-cholesterol connection

There is a very close connection between your cholesterol levels and the types of fat in your diet. Certain types of fat are healthy for you because they help to improve your cholesterol levels. A diet high in unhealthy fat, like saturated and *trans* fats, can be very harmful. These unhealthy fats raise the amount of LDL ("bad") cholesterol in your blood and increase your risk of heart disease.

### Choose healthy fats more often

When it comes to fats, it's all about making the right choices. Reducing the amount of unhealthy fats in your diet and replacing it with healthier types of fat like polyunsaturated and monounsaturated fats is an important step in managing your cholesterol levels.

### Why do we need fat?

You need a certain amount of fat in your diet for energy and cell growth. Fat also helps your body absorb the fat-soluble vitamins A, D, E and K. The concern however, is that many people eat much more fat than they really need.

### How much fat do you need every day?

A healthy eating pattern includes between 20% to 35% of your day's calories from fat.

- **For a woman** this means about 45 to 75 grams of fat a day
- **For a man** this means about 60 to 105 grams of fat a day

If you have heart disease, diabetes or other health conditions, you should have even less fat in your diet.

### How much fat is in one large egg?

One large egg contains 5 grams of total fat. With only **1.5 g of saturated fat and no *trans* fat**, eggs are an excellent choice for a healthy diet.

## Know your fats

The four major types of fat in the foods we eat are saturated fat, *trans* fat, polyunsaturated fat and monounsaturated fat. The cholesterol level in your body can be affected by the different types of fat you consume. Unhealthy fats such as saturated and *trans* fats raise LDL (“bad”) cholesterol levels in your blood.

## Unhealthy fats

### Saturated fat

- increase LDL (“bad”) cholesterol and raise total blood cholesterol levels
- are found in fatty cuts of meat, poultry skin lard, and whole-fat dairy products such as butter, cheese and ice cream
- are also found in some vegetable oils including palm, palm kernel and coconut oils

### Trans fat

- are more harmful than saturated fat because they raise LDL (“bad”) cholesterol, lower HDL (“good”) cholesterol and increase triglyceride levels
- are found in all foods made with shortening or partially hydrogenated vegetable oils such as baked goods and processed foods (e.g. muffins, cookies, doughnuts, French fries, etc.)
- small amounts of naturally-occurring *trans* fats are also found in some meat and dairy products

### Triglycerides

- are the most common type of fat in your body
- are a source of energy – triglyceride levels increase after eating
- high triglyceride levels are associated with excess intake of simple sugars, refined carbohydrates, saturated fat, *trans* fat and alcohol

**The connection between triglycerides and heart disease is not clear but people with high cholesterol, heart disease and diabetes often have elevated triglyceride levels.**

## Healthy fats

Clinical studies have shown that **replacing the unhealthy saturated and *trans* fats** in your diet with healthier monounsaturated and polyunsaturated fats **is more effective in reducing heart disease risk** than simply reducing the total amount of fat that you eat.

### Polyunsaturated fats

- reduce risk of heart disease and stroke by lowering LDL (“bad”) cholesterol
- are found in corn, safflower, soybean and sunflower oils, non-hydrogenated margarines made with these oils, nuts and seeds
- also provide omega-6 and omega-3, two essential fats that your body needs for cell growth but cannot make by itself

Learn more about omega-3s and your health on page 10.

### Monounsaturated fats

- lower LDL (“bad”) cholesterol and increase HDL (“good”) cholesterol
- are found in olive, canola and peanut oils, non-hydrogenated margarines made with these oils, avocados, nuts and seeds
- usually contain higher amounts of vitamin E, an important antioxidant

Wondering how to add more heart-healthy foods to your diet? You'll find practical advice and suggestions in the ***Your Diet Your Decision*** booklet or by visiting [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca). And don't forget to try the **delicious, low-fat recipes** included in this kit!



## Omega-3 fatty acids

Omega-3 fatty acids are healthy fats that help protect your heart by lowering the amount of LDL (“bad”) cholesterol in your blood. Omega-3 fatty acids are essential for good health but your body can’t produce them by itself. You have to get omega-3 fatty acids from the food you eat.

### Common sources of omega-3 fatty acids:

- fattier fish such as salmon, trout, herring, swordfish, cod, bluefish and mackerel
- canola and soybean oils
- flaxseed
- omega-3 eggs
- nuts such as walnuts, pecans and pine nuts

### What are the health benefits of omega-3 fatty acids?

Omega-3 fatty acids are important for good vision, brain function and normal growth and development. Clinical studies have shown that omega-3 fatty acids also help to reduce the risk of heart attack and stroke by:<sup>7</sup>

- lowering blood pressure
- reducing the risk of blood clots and blocked blood vessels
- protecting against abnormal heart rhythms that can cause sudden death
- preventing hardening of the arteries

**Health Canada recommends that people of all ages include omega-3 fatty acids in their diet every day.<sup>6</sup>**

*The recommended amounts for adults aged 19 and over are:*

**men** – 1.6 grams daily

**women** – 1.1 grams daily

### Omega-3 eggs

Omega-3 enriched eggs provide a natural, convenient nutritious and inexpensive way to add more omega-3 fatty acids to your diet. One large omega-3 egg provides between  $\frac{1}{4}$  and  $\frac{1}{3}$  of the recommended daily amount of omega-3 fatty acids. **Omega-3 eggs are also low in unhealthy saturated and trans fats**, which makes them an excellent addition to a well-balanced diet.

## Are you at risk?

Anyone can develop high cholesterol at any age. High cholesterol comes with no warning signs and can damage your health before you even know you have it. That’s why it’s important to recognize the risk and deal with it seriously.

### Your lifestyle can put you at risk

Your lifestyle has a tremendous impact on your health. If you smoke, don’t exercise and eat a high-fat diet, your risk of developing high cholesterol and heart disease increases dramatically.

Fortunately, it only takes a few lifestyle changes to improve your health and well-being. You’ll learn more about the benefits of healthy living in the **Get Active and Healthy for Life** booklet.

### Common risk factors for high cholesterol

#### Risk factors you can’t control:

- You are a man over 40
- You are a woman over 50 or post-menopausal
- You are of First Nations, African or South Asian descent
- You have a close family member (mother, father, brother, sister) with a history of heart disease, stroke or high cholesterol
- You have had a heart attack or stroke

#### Risk factors you can control:

- You are overweight – Body Mass index (BMI) over 25 or waist circumference more than 102 cm/40 inches (men) or 88 cm/35 inches (women)
- You are physically inactive – less than 20 minutes of vigorous exercise, 30 minutes of moderate exercise or 60 minutes of light exercise, at least 4 days a week
- You smoke or recently stopped smoking
- You eat a diet high in saturated and *trans* fats
- You drink excessively
- You have high levels of stress
- You have high blood pressure
- You have diabetes

## Understanding your test results

The only way to find out if your blood cholesterol levels are too high is to have your blood tested. High cholesterol has no symptoms and can develop with no warning signs. Without this simple blood test, you may not know that you have high cholesterol until your health is at risk.

A cholesterol test provides your doctor with important information about the amount and types of fat in your blood.

What the test measures	What it tells your doctor
<b>Total cholesterol</b>	The total amount of all types of cholesterol in your blood.
<b>Low density lipoprotein (LDL)</b>	The amount of LDL (“bad”) cholesterol in your blood.
<b>High density lipoprotein (HDL)</b>	The amount of HDL (“good”) cholesterol in your blood.
<b>Total cholesterol/HDL cholesterol ratio</b>	<p>The ratio of total cholesterol to HDL (“good”) cholesterol in your blood.</p> <p>The total cholesterol/HDL ratio is a more sensitive measurement, and is considered to be a better indicator of heart disease risk, than total cholesterol alone. A low ratio of total cholesterol to HDL is associated with a lower risk of heart disease.</p>
<b>Triglycerides</b>	The amount of triglycerides in your blood. High triglyceride levels are linked to low levels of HDL cholesterol and are strongly associated to heart disease, diabetes and high cholesterol.

### How often should I have my cholesterol tested?

Your risk factors and cholesterol test results will determine how often you need to be tested. Regular blood tests are recommended for people who have a higher risk of developing high cholesterol.

## Setting cholesterol targets

If your cholesterol levels are too high, your doctor will set targets for improvement and will monitor you regularly to see if you are meeting those targets. The good news is that most people can reach their cholesterol targets by making lifestyle changes. Some people may also need medication to control their cholesterol.

Before setting your cholesterol targets, your doctor will consider a variety of factors that affect your risk of heart disease and stroke, including your age, gender, weight and lifestyle. Your goal should be to keep your LDL levels low and your HDL levels high.

### Understanding the numbers

In Canada, cholesterol measurements are given in millimoles per litre, which is abbreviated as: mmol/L. The new Canadian guidelines for lipid treatment and management<sup>8</sup> recommend the following cholesterol targets:

If your risk of heart disease* is:	your LDL cholesterol target should be: AND	your total cholesterol/HDL cholesterol ratio target** should be:
High (20% or higher)	less than 2.0 mmol/L <b>AND</b>	less than 4.0
Moderate (11-19%)	less than 3.5 mmol/L <b>AND</b>	less than 5.0
Low (10% or lower)	less than 5.0 mmol/L <b>AND</b>	less than 6.0

\* based on your risk factors  
 \*\* because this is a ratio, there is no unit of measurement

**Triglycerides** – The Canadian guidelines do not provide specific triglyceride levels for each risk category but recommend 1.7 mmol/L as the preferred triglyceride target for most people.

The United States uses a different system of cholesterol measurement. Learn how to convert American measurements to Canadian by visiting [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca).

## Questions to ask your doctor about your cholesterol test results

- What do my cholesterol levels mean?
- What are my cholesterol targets?
- How often should I have my cholesterol levels tested?
- What do I have to do to reach my cholesterol targets?
- How does exercise affect my cholesterol levels?
- How much physical activity do I need each week?
- How does my diet affect my cholesterol levels?
- What foods should I eat, limit and/or avoid?
- Do I need to lose weight? If so, how much should I lose?
- How does smoking affect my cholesterol levels?
- How does alcohol affect my cholesterol levels?
- Can I be referred to a dietitian for dietary counseling?

## Managing your cholesterol

Lowering your blood cholesterol levels can dramatically reduce your risk of serious illnesses like heart attack and stroke. In fact, **lowering your cholesterol levels is one of the most important steps you can take in protecting your long-term health.**

Everyone is unique, so finding the best way to manage your cholesterol levels will depend on many factors including your age, weight, gender and your risk of developing heart disease. For most people, making lifestyle changes is a good place to start.

### A healthy diet lowers cholesterol levels

Adopting healthier eating habits is one of the keys to effective cholesterol management. To keep your cholesterol in check, experts recommend that you eat a nutritious, balanced diet that's low in unhealthy saturated and *trans* fats and high in vegetables, fruit, fibre and healthy unsaturated fats including omega-3 fatty acids.<sup>8</sup>



## Eggs and a healthy diet

Eggs have always been an excellent choice for a healthy diet. They're low in saturated fat, contain only 70 calories and have no *trans* fat.

### An egg a day is ok

More importantly, new scientific research confirms that the dietary cholesterol in eggs has very little effect on blood cholesterol levels in healthy adults.<sup>2</sup> Major clinical studies have shown that **there is no relationship between egg consumption and an increased risk of heart disease or stroke.**<sup>4,5</sup> Experts now agree that most people can eat up to one egg a day without increasing their heart disease risk.<sup>5,\*</sup>

\* An egg a day may not be appropriate for people who have diabetes or are genetically more sensitive to dietary cholesterol.

#### What the studies tell us

Researchers at the Harvard School of Public Health found that **healthy adults who ate up to 1 egg a day (7 eggs a week) had little or no increased risk of heart disease.** The study monitored the diets and health outcomes of more than 100,000 men and women for up to 14 years.<sup>4</sup>

Another significant 20-year study also confirmed that eating more than 7 eggs a week did not increase the risk of stroke or heart disease in healthy adults.<sup>5</sup>

#### Eggs – a natural part of a healthy diet

Eggs play an important role in a well-balanced, heart-healthy diet. According to *Canada's Food Guide*, two eggs are considered a serving of the Meat and Alternatives food group.<sup>9</sup>

If healthy eating is important to you, it's good to know that Canadian eggs meet all the criteria of the Heart and Stroke Foundation's Health Check™ program.

Get the facts about eggs and cholesterol at [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca).

## Take control of your cholesterol today!

Lowering your blood cholesterol levels is one of the most important steps you can take in protecting your long-term health. For most people, making some lifestyle changes is a good place to start.

**Eat less unhealthy fat** – Unhealthy saturated and *trans* fats put your heart health at risk by lowering your HDL (“good”) cholesterol and raising your LDL (“bad”) cholesterol and triglyceride levels.

**Choose healthy fats more often** – Replacing saturated and *trans* fats with monounsaturated and polyunsaturated fats is one of the most effective ways to lower your blood cholesterol levels.

**Add omega-3 fatty acids to your diet** – Omega-3 fatty acids help to reduce the risk of heart disease.

**Eat more fibre** – The soluble fibre in whole grain foods can help reduce blood cholesterol levels<sup>10,11</sup>, especially in people with high cholesterol.

**Be more active** – Engaging in physical activity most days of the week will decrease your risk of heart attack and stroke by 50%.

**Maintain a healthy weight** – Being overweight lowers your HDL cholesterol, increases your LDL and triglyceride levels and puts you at risk for serious health problems.

**Stop smoking** – Stopping smoking can reduce your risk of heart attack and stroke by as much as 36%.<sup>8</sup>

**Want to know more?** Browse through the *Healthy Choices* kit or visit [www.livingwellwithcholesterol.ca](http://www.livingwellwithcholesterol.ca) for delicious recipes and practical information on active living and healthy food choices.

