

# Canola

Canola oil contains alpha-linolenic acid or ALA, for short. ALA is the essential omega-3 fatty acid and helps reduce risk of heart disease and stroke. One tablespoon (15mL) of canola oil provides the recommended daily ALA intake for women and 80% of the recommended daily intake for men.

Cardiovascular diseases like heart disease and stroke are the number one killer of adults in North America today. Many factors, such as not smoking, being physically active and controlling your blood pressure, reduce your risk of heart disease. Eating a diet rich in omega-3 fatty acids from plants and fish may also help protect you from heart disease and stroke.

## Food Sources of Omega-3 Fatty Acids

Omega-3 fatty acids are a family of polyunsaturated fatty acids. The parent or head of the omega-3 family is alpha-linolenic acid (ALA). ALA is essential in the human diet because our bodies cannot make it. ALA is found in the fats and oils of canola, flax, wheat germ and soybeans; nuts such as walnuts, pecans and pine nuts; and red and black currant seeds. ALA makes up about 11% of the fatty acids in canola oil. Canola oil is a major source of ALA for North Americans because it is widely used in salad and cooking oils, margarines and processed foods.

Our bodies convert some of the ALA we eat to two other omega-3 fatty acids: eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). The best food sources of EPA and DHA are fatty fish such as mackerel, salmon, herring, trout, sardines and blue fin tuna. With the exception of these fatty fish, most species of fish are poor sources of EPA and DHA. Most fish, beef, pork and poultry contain small amounts of ALA.

## ALA Protects Against Heart Disease

Studies carried out in the early 1970's found that Inuit who ate traditional diets rich in fish and fish oil had lower blood cholesterol and LDL-cholesterol than Danes of the same age and sex. (LDL-cholesterol is the "bad" cholesterol.)

Dozens of studies have since confirmed that populations such as Alaskan natives and Japanese fishers who regularly eat marine animals and fatty fish have low rates of heart disease. Now there is evidence that ALA found mainly in plants also protects against heart disease.

## Omega

The term "omega" refers to the chemical structure of the fatty acid. Sometimes the letter "n" is substituted for the word omega. Alpha-linolenic acid is an omega-3 or n-3 fatty acid.



## Canola is a Good Plant Source of Omega-3 Fatty Acids

### Healthy Actions of Omega-3 Fatty Acids

Omega-3 fatty acids protect against heart attacks and strokes in several ways. They enter the body's cells, making them more fluid and flexible. They improve blood cholesterol, make platelets in the blood less sticky and help keep the regular rhythm of heartbeats. These actions help keep arteries healthy, thus reducing the risk of fatal heart attacks and strokes.

### Boosting Omega-3 Fatty Acid Intake

Hunter-gatherers who lived 10,000 years ago ate more omega-3 fatty acids in their diets than North Americans do today. Part of the reason for this difference is that North Americans eat ample amounts of cereal grains such as wheat, maize (corn) and rice, which are low in omega-3 fatty acids. Today's consumers also eat meat derived from livestock fed cereal grains in their feed. In short, North Americans do not eat enough omega-3 fatty acids.

One way to increase omega-3 fatty acid intake is to use canola oil and non-hydrogenated canola margarine regularly in cooking and baking.



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## Canola and Omega-3 Fatty Acids

One of the most famous studies of plant omega-3's and heart disease risk was the Lyon Diet Heart Study. It was carried out among adults who had already survived one heart attack. In this study, volunteers were assigned randomly to eat their usual diets (the control group) or to eat a Mediterranean-type diet (the intervention group). Volunteers in the intervention group ate a diet rich in ALA derived mainly from a canola oil-based margarine. The Mediterranean-type diet also included olive oil and some fish, but the main source of ALA was canola oil.

Over the course of the study, the volunteers in the intervention group increased their ALA intake by 68%. By the study's end, they had lower blood cholesterol and higher blood HDL-cholesterol compared with the control group who ate a low-ALA diet. (HDL-cholesterol is the "good" cholesterol.) In fact, eating a diet rich in ALA was linked with a 70% reduction in coronary events and cardiac deaths. The study's findings were so compelling that the trial was halted for ethical reasons, allowing volunteers in the control group to benefit immediately from the study's results.

Researchers with the Lyon Diet Heart Study found that the protective effect of the high ALA diet was maintained for up to four years after the first heart attack. This unexpected finding was due to the volunteers' eating a high-ALA diet long after the study had officially ended. In short, the Lyon Diet Heart Study showed that a simple dietary change – using a canola oil-based margarine on a regular basis – may be an effective way of preventing sudden cardiac events.

Other studies, involving thousands of adults living in the United States, have reported similar findings. The Multiple Risk Factor Intervention Trial (MRFIT), for example, involved more than 12,000 men aged 35 to 57 years who had a high risk of developing heart disease. The MRFIT study found that death from coronary heart disease and all causes was lowest in those men who had the highest intakes of ALA. Similar findings were reported for 43,757 men in the Health Professionals Follow-up Study and for the more than 80,000 women in the Nurses' Health Study.

## ALA Protects against Stroke

In the MRFIT study, middle-age men with high levels of ALA in their cells – a reflection of their ALA-rich diets – had a low risk of stroke, even after other stroke risk factors such as smoking and high blood pressure were taken into account. In the MRFIT study, the amount of ALA in the men's cells predicted who was likely to have a stroke and who was not.

## Canola Oil is a Good Source of ALA

Canola oil is a good source of ALA, providing 1.3 g per tablespoon. One tablespoon (15mL) of canola oil provides the recommended daily intake of OALA for women and 80% of the recommended intake for men. Using canola oil regularly in cooking and baking adds ALA to the diet and helps protect against heart disease, the leading cause of death in North America today.

## References

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Factsheet researched and written by Diane H. Morris, Ph.D., R.D.

FOR FURTHER INFORMATION ON THIS, OR ANY OTHER SUBJECT RELATED TO CANOLA, PLEASE CONTACT:

### In Manitoba

Phone (204) 982-2100  
Fax (204) 942-1841  
admin@canola-council.org  
ellen@canolainfo.org

### In Saskatchewan

Phone (306) 387-6610  
Fax (306) 387-6637  
dorothy@canolainfo.org

### In Alberta

Phone (780) 454-0844  
Fax (780) 451-6933  
simone@canolainfo.org



**CANOLA**  
**CANADA**  
CANOLA COUNCIL  
OF CANADA

**400-167 Lombard Ave.**  
**Winnipeg, Manitoba**  
**Canada R3B 0T6**

[www.canola-council.org](http://www.canola-council.org)