

Everything you need to know about trans fats

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Russell de Souza says artificial trans fats are on their way out, but you can still find them in microwave popcorn, some stick margarines, and fried and baked snack foods. Credit: McMaster University

Nearly 12 years after it was first recommended, the federal government

has announced its intention to ban partially hydrogenated oils in all food sold in Canada.

Partially hydrogenated oils are the main source of trans fats, which are known to raise levels of "bad" cholesterol and lower levels of "good" cholesterol.

To find out more, we talked to dietician, nutrition epidemiologist and assistant professor in the Department of Health Research Methods, Evidence and Impact Russell de Souza. He says that, gram for gram, no other fat appears to affect [heart disease](#) as much as trans fat.

What are partially hydrogenated oils?

Partially hydrogenated oils are liquid oils that have been made semi-solid through treatment with hydrogen at high temperatures and pressures. This new product behaves like saturated fat, and can be used for baking and cooking by the [food](#) industry.

What is a trans fat?

Fats are either saturated or unsaturated, which is a way of describing their chemical structure.

Saturated fats are solid at [room temperature](#), like a stick of butter. Unsaturated fats are liquid at room temperature, like [canola oil](#). Trans fats are semi-solid at room temperature owing the position of one (or more) of its chemical bonds being in the "trans-" rather than the "cis-" position.

There are two types of trans fats: natural and artificial. Artificial trans fats start off as [vegetable oils](#), which are liquid at room temperature.

To make trans fats, ordinary vegetable oil, like canola oil, is hardened by treatment with hydrogen at [high temperatures](#) and pressures. This chemical reaction converts a liquid into a semi-solid or solid, that behaves like saturated fat, and can be used for baking and cooking by the [food industry](#).

In what kinds of food can it be found?

Artificial trans fats are on their way out. You can still find them in some stick margarines, microwave popcorn, and fried and baked snack foods.

Natural trans fats, which we eat in very small quantities, come from eating beef (or dairy products), lamb, and deer; in animals like these, known as ruminants, bacteria living in the stomach make small amounts of trans fat.

What effect does it have on human health?

Trans fats raise [bad cholesterol](#) and reduce good cholesterol levels; saturated fats generally raise both bad and good cholesterol levels.

Compared with saturated fats, trans fats also increase inflammation in the body and are harmful to the cells that line the arteries.

In animal studies, trans fats have been linked to weight gain—notably belly fat—and may hamper the ability of insulin to drive blood sugar (glucose) where it needs to go.

Will banning it really make a difference in the heart health of Canadians?

I think so, because we, and others, have shown that even a small amount

of trans fats (2% of energy) can raise your risk of heart disease by 30%.

Gram for gram, no other fat appears to affect heart disease this much.

This ban will help ensure that those products which don't carry nutrition labels (such as some foods you buy in bakeries, and fried foods) are trans fat free.

It can be difficult to know how much trans fats you get from these products—so knowing that we're down to none is good.

Most trans fats are in pretty low supply in Canada as a result of a voluntary reduction program (more than 97% of products that once contained these fats no longer have them—so the industry has really helped here). Most margarines have not contained trans fats for a number of years, and many are great sources of healthy fats.

Why do decisions like this take so long when they seem to make so much sense?

Many products were reformulated in the 1970s and 1980s to remove saturated fats. At the time, many nutrition scientists and policy makers believed that [partially hydrogenated oils](#) were better for you because they were made from plant oils and thus not saturated. Many companies, in a desire to claim health benefits of "vegetable oils" changed their product formulations entirely.

Trans fats also then had the benefit of being cheaper and having longer shelf-life. Thus, they became attractive to industry, and those of us who ate those foods got used to the taste. So, in order to change back to formulations without [trans fats](#), industry must come up with a product that consumers will like just as much, and keep costs reasonable. I

suspect this balancing act has been the delay.

Provided by McMaster University

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