There is a lot of disagreement in nutrition. But one of the few things people actually agree on is the unhealthy nature of trans fats.
On June 16, 2015, the Food and Drug Administration, or FDA, announced it was **banning artificial trans fatty acids** (trans fats) from all food products after a decision by the Obama administration to phase out all partially hydrogenated oils from food products over the next three years.

The FDA announced their decision to **eliminate trans fat from food in the United States by 2018**, with a gradual phase-out period beginning immediately.

The FDA has set a **compliance date of three years (2018)** to remove partially hydrogenated oils (PHOs)

This will allow companies to either **reformulate products without PHOs and/or petition the FDA to permit specific uses of PHOs.**

Many companies have already been working to **remove PHOs from processed foods** and the FDA anticipates that many may eliminate them ahead of the three-year compliance date.
Research has shown that trans fat increases bad cholesterol (LDL) levels and lowers levels of the good cholesterol (HDL) in the body. That can lead to a number of problems, such as hardening of the arteries, heart attack, heart disease and stroke.

A diet high in trans fats can also lead to high blood pressure, obesity, and heart disease. Studies have also indicated that increased trans fat consumption may lead to Alzheimer’s disease, prostate and breast cancer, Type 2 diabetes, liver dysfunction, infertility, depression, and even aggression.
In 2003, the average US adult consumed 4.6 grams of artificial trans fats per day.
This has now been reduced to 1.3 grams per day.

In Europe, the Mediterranean countries were found to have the lowest intakes of trans fats. This may partly explain their low risk of cardiovascular disease.
So what is trans fat, exactly?

Essentially, it’s the type of fat that’s created when hydrogen is added to the chemical structure of a fat, typically vegetable oil.

The addition of hydrogen helps to make the fat more shelf-stable, preventing it from easily spoiling when left out unrefrigerated.

Partial hydrogenation (the process of adding hydrogen to fat) also creates a semi-solid fat, which is necessary in order to prevent foods from melting at room temperature.

Partially hydrogenated oil is also much cheaper than butter, lard, or other semi-solid fats like palm oil.

Trans fats also take much longer to go rancid than traditional fats, making partially-hydrogenated oil a favorite frying oil for restaurants.

Trans fats are created by pumping hydrogen molecules into vegetable oils.

This changes the chemical structure of the oil, turning it from a liquid into a solid.

This process involves high pressure, hydrogen gas, and a metal catalyst.

After they have been hydrogenated, the vegetable oils have a much longer shelf life and are solid at room temperature, with a consistency similar to saturated fats.
**Trans** fats are easy to use, inexpensive to produce and last a long time.

**Trans** fats give foods a desirable taste and texture.

Many restaurants and fast-food outlets use *trans* fats to deep-fry foods because oils with *trans* fats can be used many times in commercial fryers.

The FDA’s anticipated action will remove *trans* fat from a category of foods known as “Generally Recognized As Safe” or GRAS, and place it in the category of food additive, which could open manufacturers up to *liabilities* if they don’t find an alternative.
Trans fat is an unsaturated fatty acid and a byproduct of partially hydrogenated oils (PHOs).

It is found in many processed food products, including margarine, coffee creamer, fast food, frozen pizza, snack foods and other baked goods.

Trans fat is also found in some peanut butter.

It is frequently used by the food industry because it improves flavor stability and shelf life of food.

Unlike mono and poly unsaturated fats, which are liquid at room temperature, or saturated fats, which occur naturally in animal products such as butter and meat, trans fat is man-made by adding a hydrogen atom to oil and changing its molecular structure.
Trans fats originally came about because food manufacturers were looking to find an alternative to saturated fat and it quickly became a cheap and inexpensive way to add fat to foods and make them shelf-stable.

Crisco was one of the first trans fat products, but now, it can be found in everything from donuts to pre-packaged cookie dough to boxed macaroni and cheese to microwave popcorn.

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When saturated fat was fingered as a contributor to high cholesterol, companies such as McDonald’s and Dunkin’ Donuts switched from beef tallow to partially hydrogenated vegetable oil for frying French fries and donuts.

Several countries (e.g., Denmark, Switzerland, and Canada) and jurisdictions (California, New York City, Baltimore, and Montgomery County, MD) have reduced or restricted the use of trans fats in food service establishments.
Before 1990, very little was known about how *trans* fat can harm your health.

In the 1990s, research began identifying the adverse health effects of *trans* fats.

Harvard School of Public Health researchers helped sound the alarm about trans fat in the early 1990s and advocated that it be explicitly listed on food labels.

After much indecision by the FDA and intense lobbying against the addition by parts of the food industry, the FDA finally approved adding trans fat to food labels.

This one-line change on the food label in a massive federal rule has sparked a major makeover of the American food supply.

The FDA once estimated that approximately 95% of prepared cookies, 100% of crackers, and 80% of frozen breakfast products contained trans fat.

Now that trans fat must be listed on food labels, many companies have removed them from their products.
Of course, many foods don’t come with labels, such as foods sold in bakeries, cafeterias, schools, and restaurants. Because consumers cannot tell whether these unlabeled foods contain trans fats—and, in turn, cannot make the choice to avoid trans fat-laden foods—many cities and states have passed or are considering laws to eliminate trans fats in these foods. California signed legislation to phase out trans fats from restaurants by 2010 and from baked goods by 2011, the first state in the nation to do so. New York City became the largest city in the nation to require its restaurants, cafeterias, and schools to go trans free and other cities and towns, such as Boston, are following its lead.

Excess inflammation is believed to be among the leading drivers of many chronic, Western diseases. This includes heart disease, metabolic syndrome, diabetes, arthritis and numerous others. There have been three clinical trials investigating the relationship between trans fats and inflammation. Two found that trans fats increase inflammatory markers such as IL-6 and TNF alpha when replacing other nutrients in the diet. In observational studies, trans fats are linked to increased inflammatory markers, including C-Reactive Protein, especially in people who have a lot of body fat.
Trans fats are believed to damage the inner lining of the blood vessels, known as the *endothelium*.
When saturated fats were replaced with trans fats in a 4 week study, HDL cholesterol was lowered by 21% and the ability of arteries to dilate was impaired by 29%
Markers for *endothelial dysfunction* were also increased when trans fats replaced carbohydrates and monounsaturated fats

American Heart Association journal *Circulation* published research that included 32,826 women participating in the larger Nurses' Health Study, an ongoing trial examining lifestyle and disease risk in women followed since 1976.
All of the women in the trans fat study contributed blood samples between 1989 and 1990.
During six years of follow-up, 166 of the women developed coronary [heart disease](#).
The researchers compared trans fat levels in the stored blood samples of these women with samples from 327 women who did not develop [heart](#) disease.
After adjusting for age, smoking status, and other known heart disease risk factors, higher total trans fat levels in red blood cells were found to be associated with an increased heart disease risk.

Women with the highest blood levels of trans fats were three times as likely to develop coronary heart disease as women with the lowest levels.

The Food and Drug Administration (FDA) estimates that compliance with the regulations will cost the food industry $6.2 billion over 20 years in packaged food reformulations and relabeling, substituting new ingredients, and consumer, restaurant and bakery recipe changes. But the savings from decreased medical costs and other benefits during this time is estimated at $130 billion, demonstrating that the benefits far exceed the cost of compliance. According to the Centers for Disease Control and Prevention, the elimination of partially hydrogenated oils could prevent 10,000-20,000 coronary events and 3,000-7,000 deaths annually.
Your cells are defined by your membranes. They not only separate your cells from another, they also determine **how your cells communicate with each other** and govern their internal actions. Membranes are composed mostly of lipids, with some protein and carbohydrate. The fats are continually renewed and replaced and their composition is affected by the kinds of oils in your diet. The very basic and crucial actions of cells and the proper functioning of your body are to a great extent dependent on the fats you consume every day.
Trans fats are **absorbed in to your cell membrane** where healthy essential fats should be integrated.

The human lipase enzyme is ineffective with the trans configuration, so trans fat **remains in the blood stream** for a much longer period of time and is more prone to arterial deposition and subsequent plaque formation.

Once in your cell membrane, **trans fats can not be replaced**.

Trans fats irreversibly disrupt cell membrane function and communication with other cells.

Trans fats alter arterial wall function leading to soft, weak, and stiff arteries which are susceptible to lesions, injury, and subsequent plaque formation.

Trans fats continue to be present in more than 30% of food on the market including crackers, cookies, cakes, frozen pies and other baked goods, microwave popcorn and other snack foods, coffee creamers, and ready-to-use frostings.
In 2006, the FDA required grocery manufacturers to label trans fat on all foods that contain half a gram or more per serving.

While many companies reformulated recipes, others met the mandate by changing the serving size shown on the label so the amount of trans fat per serving fell below the threshold of ½ or 0.5 a gram.

That also permitted them to legally label the products “trans fat-free.”
Unfortunately, reading labels isn’t enough in all cases. Some processed foods (like regular vegetable oils) can contain trans fats, without any indication on the label or ingredients list. The Journal of Food Lipids reported that one US study found that store-bought soybean and canola oils were analyzed and found to contain 0.56% to 4.2% trans fats, without any indication on the packaging.

The FDA estimates that between 2003 and 2012, people consumed about 78% less trans fat as companies began replacing them with other kinds of oils.
Deep-Fried Food

Because partially hydrogenated oil lasts longer without going rancid, many restaurants deep-fry with it.

Most fast food chains have made the switch to non-hydrogenated oil, but several, like Popeye’s, still haven’t (an order of Popeye’s hash browns contains a whopping 10 grams).

As for what’s in the fryer at your local restaurant, there’s really no way to know, so it’s best to avoid the fried stuff altogether.

Foods with the highest amounts of trans fats include:
Pie Crust

The light, flaky consistency is in pie crusts in many cases due to trans fats.

Margarine

Most margarine is basically vegetable oil that’s been converted into a solid, and the oil needs to be hydrogenated in order to make that happen. For example, Land O’Lakes margarine contains 2.5 grams of trans fat per tablespoon.
Not so long ago, margarine was marketed as a healthier alternative to butter because it's made from vegetable oil instead of dairy or animal products.

But for the margarine to maintain its solid form, many brands (especially stick varieties) depend on hydrogenated oils and are high in trans fat and/or saturated fat.

Steer clear of Shedd’s Spread Country Crock Spreadable Sticks (2 grams trans fat per serving), Blue Bonnet Regular Sticks (1.5 grams per serving), Land O'Lakes margarine sticks (2.5 grams per serving), and Fleischmann’s original stick margarine (1.5 grams per serving).

The butter-versus-margarine debate is a slippery subject.

Some margarines have unhealthy trans fats, while others have confusing health claims.

Meanwhile, some say butter is an "all-natural" choice.
The American Heart Association suggests buying soft, trans-fat-free spreads instead of regular butter or stick margarine.
Choose a blend with the least amount of saturated fat and zero trans fats.
Check the ingredients: If it says partially hydrogenated oils, it still has some trans fat (less than 0.5 gram per serving), even if the label says trans fat free.
These can add up if you have more than one serving.

If you like butter better...
Regular butter is made with one ingredient: cow's milk or cream, churned or shaken until it reaches a semisolid state. By definition, it contains at least 80% milk fat by weight, and it takes about 11 quarts of milk to make 1 pound of butter.
Traditionally, butter comes in salted and unsalted varieties, and it can be found in solid stick form or whipped and packaged in plastic tubs.
You may also find cultured butter, a rich butter made from cultured cream popular in Europe, at your grocery store or specialty foods store.
Most "original" butter sticks contain 100 calories per tablespoon, a typical serving size. One serving has 11 grams of fat, and 7 grams of saturated

Use small amounts: 1 tsp and buy organic, grass-fed

Better: Whipped butter

The process of whipping adds air to the butter, making it lighter and less dense. If you can stick with the same teaspoon or tablespoon-size portion, you'll save up to half the calories and saturated fat by choosing whipped butter in a tub.

Land O'Lakes Whipped Butter, for example, contains 50 calories and 6 grams of fat (3.5 grams saturated), and only 15 milligrams of cholesterol per 1 tablespoon serving.

You can also choose an organic brand like Organic Valley Whipped Butter.
Better: Vegetable-oil blends
A butter blend with added olive or canola oil won't cut calories or fat much or at all—most have 100 calories and 11 fat grams per serving—but it will lower saturated fat and cholesterol.
These are typically softer and easier to spread right out of the refrigerator.
To lower calories, select a "whipped" or a "light" blend.

Vegan Spreads: No animal products
Made with Extra Virgin Olive Oil
Vegan
Lactose-Free
Gluten-Free
Expeller-Pressed Oils
Non-GMO
**Shortening**
Crisco may claim via the nutrition label that it’s trans fat-free, but there’s still hydrogenated oil in the ingredients list.

**Frosting**
Betty Crocker’s frosting can contain up to two grams of trans fats.
Bisquick
Pancake and waffle mixes depend on trans fats for that light texture, and Bisquick still contains 1.5 grams per serving.

Non-Dairy Creamer
Even though creamers claim via the nutrition label that they contain zero grams of trans fat, they’re just rounding down. Partially hydrogenated oil is usually pretty high up in the ingredient list, and adding some to your coffee every morning can certainly add up.
Microwave Popcorn
The “butter” flavor in Pop Secret (and several other brands of popcorn) is just oil with artificial flavoring — and partially hydrogenated oil at that. Pop Secret’s butter flavor contains 15 grams of trans fats per bag.

Animal Fat and Dairy
Trans fats occur naturally in animal-derived fat. It’s present in rather small quantities though, nowhere near as much as in processed foods.
**Store-Bought Cookies and Cakes**

In order to keep cookies and cakes shelf-stable for so long, the fat used can’t go rancid, as butter does. Cheaper and more shelf-stable partially hydrogenated oils are used instead.

**Biscuits**

Most fast food chains have removed trans fats from their biscuits, but the ones you buy in the supermarket (including frozen biscuit breakfast sandwiches) still contain trans fats: Jimmy Dean breakfast sandwiches contain up to three grams, as do Pillsbury Grands! Homestyle Buttermilk Biscuits.
Creamy Frozen Drinks
Most of Dairy Queen’s Blizzards and shakes contain between 0.5 and 1.5 grams of trans fats, as do the shakes at all the other chains (Wendy’s vanilla frosty waffle cone contains six grams, more than any other item on the menu).

Crackers
If it’s a shelf-stable product, it most likely contains trans fats. Even Saltines are no exception. If it contains anything hydrogenated, it contains trans fats.
Use the **Nutrition Facts Label** as your tool for reducing *trans* fat in your diet – which may help decrease your risk of developing cardiovascular disease!

Keep *trans* fat consumption as low as possible by limiting foods that contain *trans* fats formed during food processing. *Trans* fat has no percent Daily Value (%DV), so use the amount of grams (g) as your guide. Goal: 0 grams/day

Look for **partially hydrogenated oils**, a source of *trans* fat, on the ingredient list on a food package. Note: The Nutrition Facts label can state 0 grams of *trans* fat if the food product contains less than 0.5 grams of *trans* fat per serving. Thus, if a product contains partially hydrogenated oils, then it might contain small amounts of *trans* fat even if the label says 0 grams of *trans* fat.

Choose lean cuts of meat and skinless poultry.

Switch from stick margarine to soft margarine (liquid, tub, or spray).

Limit packaged snack foods and commercially prepared (ready-made) baked goods.
Get plenty of foods that are naturally low in fat and high in dietary fiber, such as whole grains, beans, peas, fruits, and vegetables.

Cook and bake with liquid oils (like organic canola or olive oil) instead of solid fats (like shortening, butter, or lard).

Cook with fruit puree instead of some oils!

Try baking, steaming, grilling, or broiling. These cooking methods do not add extra fat.

It’s important to remember that just because processed foods will no longer have trans fats, doesn’t necessarily make those foods healthy!

They could still be high in saturated fat, sodium, or sugar.

It’s all about balance and choosing processed foods less often.
Fully Hydrogenated Fats

- What are fully hydrogenated fats that are sometimes used to replace trans fats?
- Fully hydrogenated fats are not as bad, though more research is needed to better understand their health effects.
- Fully hydrogenated oils, in essence, become saturated fats—but they contain no trans fat.
- The type of saturated fat typically produced is thought to have no significant effect on cardiovascular risk.

The story doesn’t end there, however.
- Fully hydrogenated oils are being used as a supposedly healthier replacement for partially hydrogenated oils.
- But food companies often blend fully hydrogenated oils with liquid vegetable oils and put them through a process called interesterification.
- This changes the structure of the oil so that it performs like a partially hydrogenated oil without the trans fat.
- Sounds great, but we don’t yet know whether interesterified fats might have their own adverse health consequences.
Read the ingredients list.
If you see “partially hydrogenated oil,” that means some trans fat is present, even if the label says “0” trans fat, which is allowed if a serving contains less than 0.5 grams.
Some products, such as Crisco All-Vegetable Shortening, contain both partially and fully hydrogenated oils.
If the label just says “hydrogenated” oil, you don’t know if it’s fully or partially hydrogenated.
You can’t always tell from the label if a fully hydrogenated oil has been interesterified.

All this is more reason to limit or avoid foods that contain any type of hydrogenated oil.
These foods—often baked sweets and snack foods—tend not to be healthy choices anyway.
When eating out, remember to ask which fats are being used to make the food you're ordering. You can also ask to see nutrition information, which is available in many fast food and chain restaurants, and choose a lower fat option.

Remember – GOOD fats like avocados, nuts and seeds and extra virgin olive and walnuts oils are GOOD for health. Keep the good fats in your diet. Get rid of the damaged fats like trans fat and ENJOY GOOD HEALTH!
Let’s Get Cooking!