

How Industrial Fats & Oils are Made

- Manufacturers start with the cheapest seeds (usually soy or canola), extracting the oil at very high temperatures and pressures; the last fraction of oil is removed with hexane, a toxic solvent.
- At this point, the oils are a brown, smelly, rancid gunk. They are subjected to steam for cleaning. This destroys all the vitamins and natural antioxidants, but pesticides and solvents remain.
- Additional refining involves more heating, addition of chemicals, drying, degumming, deodorization and the addition of dangerous industrial antioxidants. In all, the fragile liquid oils are heated five times before they are bottled.
- To make hardened fats manufacturers use a process called partial hydrogenation. The oils are mixed with a finely ground nickel catalyst and then put in a reactor where at high temperatures and pressures, they are flooded with hydrogen gas. The molecular structure is rearranged—what goes into the reactor is a liquid oil, what comes out is a smelly, lumpy, gray semi-solid.
- Soap-like emulsifiers are mixed in to remove all the lumps; the oil is steam cleaned (again!) to remove the horrible odor; the oil is then bleached to get rid of the gray color; synthetic vitamins and artificial flavors are mixed in; the mixture is packaged in blocks or tubs and promoted to the public as a health food.

THE FUTURE OF TRANS FATS

In 2013 the FDA determined that *trans* fats were no longer “Generally Recognized as Safe (GRAS),” and the Institute of Medicine determined there is no safe level of *trans* fat consumption. The industry must phase out *trans* fats by 2018. They will be largely replaced by other industrial products, such as “interesterified fats.” No clinical trials exist on metabolism of interesterified fats, just as there were none on the *trans* fats.

“Partially hydrogenated” oil on a food label indicates the presence of *trans* fats. Companies must list *trans* fats on food labels only if there is more than half a gram per “serving,” so many labels indicate zero *trans* fats even though they may be present in considerable quantities.

Good Fats, Bad Fats

The GOOD FATS are traditional fats and oils that mankind has used for thousands of years. These are mostly saturated animal fats. Saturated fats are actually very healthy, needed for proper growth, fertility, healthy babies, cell function, hormone production and optimal function of the heart, lungs and kidneys. They also provide important vitamins A, D and K2.

- Butter and ghee for cooking and spreading
- Cream and whole milk
- Egg yolks
- Lard (pig fat) and bacon grease for cooking
- Tallow (beef fat) for frying
- Duck fat and goose fat (good sources of K2)
- Coconut oil
- Palm oil
- Olive oil for salad dressings
- Sesame seed oil and flaxseed oil (cold pressed) in small amounts
- Cod liver oil in small amounts for vitamins A and D

Anything that contains industrial fats and oils is a BAD FAT:

- Cooking oils
- Margarine
- Spreads
- Shortening
- Artificial whipped cream
- Non-dairy creamers
- Snack foods (chips, pretzels, cookies)
- Cake frosting
- Fried foods
- Commercial mayonnaise
- Dips
- Commercial salad dressings
- Commercial nut butters and spreads
- All fast food, including pizza
- Most restaurant food

Industrial Fats & Oils

The Dangers of Industrial Seed Oils
and Partially Hydrogenated *Trans* Fats



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What are Industrial Fats & Oils?

Industrial fats and oils—also called vegetable oils—came on the market with the invention of the stainless steel roller press in the 1890s. This technology allowed manufacturers to squeeze oil out of hard seeds. Prior to that time, the only plant-based oils came from oily fruits like the olive, coconut and palm fruit, and very oily seeds like flax seed and sesame seeds, which could be extracted using a slow-moving stone press.

The first seeds that manufacturers used to produce vegetable oil were cottonseeds—a waste product of the cotton industry. The manufacturer—Proctor and Gamble—used very clever marketing strategies to advertise the liquid oils for cooking and salad dressings and the industrially hardened (partially hydrogenated) shortenings (such as Crisco) for cooking and baking. They promoted the idea that their cottonseed oil products were safer and healthier than traditional fats and oils like butter, lard, tallow and coconut oil.

Soon manufacturers learned to extract oil from corn, soybeans, safflower and other seeds. Today, 80 percent of all vegetable oil comes from soybeans. They are the basic ingredient in cooking oils, margarine, spreads and shortenings used in the home, and in cookies, pastries, chips, bars, snack foods and commercial fried food.

Since vegetable oils contain no cholesterol (only animal foods contain cholesterol) and are very low in saturated fat, the vegetable oil industry created the false impression that foods containing cholesterol and saturated fat were bad for us, but the vegetable oils were good.

Unfortunately, it is becoming increasingly evident that the industrial fats and oils—whether liquid or solid—cause many health problems in adults and children. Moreover, the traditional fats, especially animal fats, are critical for good health, for fertility and for having healthy children. While there are many unhealthy ingredients in the modern diet, those that have the most serious adverse effects are the industrial fats and oils.

Dangers of Liquid Vegetable Oils

Liquid polyunsaturated vegetable oils cause uncontrolled reactions in the body.

CANCER: Polyunsaturated liquid vegetable oils are very fragile. They easily become rancid, breaking down into compounds called free radicals and aldehydes. These compounds are highly carcinogenic, and especially cause cancer in the presence of carcinogens like industrial chemicals and pesticides.

HEART DISEASE: Although liquid vegetable oils may lower cholesterol levels temporarily, they cause heart disease in other ways; rancid oil molecules initiate damage in the arteries that can lead to plaque build up. They also increase uric acid levels in the blood, a marker that is strongly associated with heart disease.

PREMATURE AGING: Highly reactive vegetable oils cause damage all over the body that can lead to premature aging, especially excessive wrinkling of the skin.

IMMUNE FUNCTION: Polyunsaturated oils interfere with the immune response.

LIVER DAMAGE: Polyunsaturated vegetable oils depress the liver's ability to detoxify.

DEPRESS LEARNING ABILITY: In children, consumption of liquid vegetable oils can depress learning ability.

REPRODUCTIVE ORGANS AND LUNGS: Liquid vegetable oils can be especially damaging to the reproductive organs and the lungs. The lungs need saturated fat to function properly.

POOR GROWTH IN CHILDREN: Children need animal fats like butter to grow strong and tall. Vegetable oils do not supply needed fat-soluble vitamins as animal fats do.

WEIGHT GAIN AND OBESITY: When the body processes polyunsaturated oils, more fat ends up in the fat cells and isn't easily released for energy, signaling the body to find more energy. This makes us feel hungry more frequently, often craving more junk food containing polyunsaturated oils.

Dangers of *Trans* Fats

Hardened industrial fats contain *trans* fats, which inhibit reactions in the body, including enzymes and receptors.

CANCER: Consumption of *trans* fats is associated with increased rates of cancer in many studies; *trans* fats interfere with enzymes the body uses to protect itself against cancer.

DIABETES: *Trans* fatty acids interfere with the insulin receptors in the cell membranes, thus triggering type II diabetes.

HEART DISEASE: *Trans* fats raise the levels of atherogenic lipoprotein-a (Lp(a)) in humans.

IMMUNE FUNCTION: *Trans* fats interfere with both B and T cell functions, thus reducing the immune response.

FERTILITY AND REPRODUCTION: *Trans* fats interfere with enzymes needed to produce sex hormones; they decrease the levels of testosterone in male animals and increase the level of abnormal sperm.

LACTATION: In animals and humans, consumption of *trans* fats lowers the overall fat content in mother's milk, thus compromising the nourishment to the infant. In addition, *trans* fats can cross the mammary gland into mother's milk and interfere with neurological and visual development of the infant.

DEVELOPMENT AND GROWTH: *Trans* fats can cross the placenta, creating many problems for the developing fetus including low birth weight and interference with brain development.

OBESITY: Women who consume *trans* fatty acids have a greater likelihood for obesity than women who do not consume *trans* fats, even though caloric intake is the same.

SOURCES AND FURTHER INFORMATION
westonaprice.org/know-your-fats/
Nourishing Fats by Sally Fallon Morell