Why You Should Stay Away From Trans Fats Altogether

You know trans fats are bad for you.

High consumption of trans-fatty acids raises cholesterol levels and increases the risk of heart attack, especially among women. It is estimated that consumption of trans-fatty acids in the United States accounts for 30,000 premature deaths per year.

“A 2 percent absolute increase in energy intake from trans fat has been associated with a 23 percent increase in cardiovascular risk,” note researchers from Kansas State University.

But did you know how these diabolical fats are manufactured to make them so dangerous?

Toxic Trans Fats
To understand the toxic potential of trans-fatty acids, you have to know how they affect the body’s use of essential fatty-acids (EFAs).

EFAs have a chemical structure that is polyunsaturated. Technically, this means each molecule of an EFA has two or more double chemical bonds. The double-bonding twists the molecule, giving it a serpentine shape. When incorporated into a cell’s membranes, the snakelike EFA molecules add fluidity and flexibility to the membrane.

But unfortunately, EFAs are rather unstable when exposed to air. The double bonds break down rapidly, producing a toxic form of fat that can be detected in food by its rancidity.

Preservatives may be added to food to prevent this breakdown from occurring, thereby increasing the shelf life of the food.

A natural preservative for fatty acids is vitamin E (alpha-tocopherol), but the most commonly used preservatives are the synthetic antioxidants BHT and BHA.

Gain Shelf Life by Destroying EFAs
Industrial food processing has discovered a more efficient way to prolong the shelf life of products: hydrogenate the fatty acids, destroying the EFAs.

In hydrogenation, the double bonds are broken by hydrogen gas and the unsaturated fatty acids become saturated with hydrogen.

This means that all sites for chemical bonding are filled. Naturally saturated fatty acids are commonly consumed in meat and dairy products. They are also manufactured in your liver and stored in your body's fat cells.

Saturated fatty acids are straight, not twisting, in shape, and impart stiffness and solidity to membranes. Human cell membranes usually have one saturated fatty acid lined up alongside one unsaturated fatty acid, producing just the right blend of stiffness and flexibility for responding properly to signals sent from other cells.

In food processing, the hydrogenation of vegetable oils is usually not complete. It is partial. Partially hydrogenated oils are easier to work with and produce a softer foodstuff than fully hydrogenated oils.

"Partially hydrogenated vegetable oils have been in the American diet since 1900," note University of Illinois researchers.

Chemically, partial hydrogenation converts EFAs into trans-fatty acids, which are unsaturated fatty acids that twist abnormally. Trans-fatty acids do not have the serpentine shape and fluidity of naturally unsaturated fatty acids. Trans-fatty acids are stiff and straight, like saturated fatty acids, but

because they are unsaturated, they replace natural fatty acids in the cell membranes.

The result of trans-fatty acid consumption is stiff cell membranes, abnormal response to signals from other cells, and an increase in dietary requirements for EFAs.

Partially hydrogenated vegetable oils, which are prevalent in manufactured foods, are loaded with these anti-nutrients.

In my book *Superimmunity for Kids*, I warn parents about the dangers of raising their children on margarine and other foods built from partially hydrogenated oils. My arguments derive from research on the chemical effects of trans-fatty acids and knowledge of how this chemistry could distort cell function. Clinical studies have vindicated the warning.

Nutrition researchers now sing together loud and clear: Eat zero trans fats! Read the ingredients on the label, and skip anything that says hydrogenated or partially hydrogenated.

Dr. Leo Galland *is a board-certified internist who is internationally recognized as a leader in nutritional medicine. He has written several dozen scientific papers, textbook chapters, and three highly acclaimed popular books,* The Fat Resistance Diet, Power Healing *and* Superimmunity for Kids.

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