

# OPTIMAL HEALTH UNIVERSITY™

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## Think All “Trans-Fat Free” Foods Are Healthier? Think Again, Say Researchers

*As more and more cities consider banning trans fats, researchers warn that the No. 1 fats being used as replacement may be as destructive to health — or possibly more so (Nutr Metab 2007;4:3).*

*Your doctor at Hickory Chiropractic Clinic focuses on promoting wellness in all aspects of patients’ lives. That’s why this office strives to remain up to date on cutting-edge wellness research, including studies involving nutrition.*

*While your doctor at Hickory Chiropractic Clinic advocates that patients avoid consuming any trans fat, it’s also vital to avoid the unhealthy replacements to trans fats, known as interesterified fats.*



### Give Your Lifestyle an Attitude!

Deciding to reduce dietary fat is an integral step toward developing a wellness attitude. The foundation of a wellness-oriented lifestyle, however, is the spine.

Chiropractic care centers on the correction of dysfunctional areas in the spine termed **vertebral subluxations**. This condition is linked with an array of disorders, including asthma, ear infections, back pain, carpal tunnel syndrome and headaches. Your doctor at Hickory Chiropractic Clinic uses gentle and effective maneuvers called **chiropractic adjustments** to correct vertebral subluxations and prevent recurrence.



### Out With Trans Fat

Trans fats are created through a process known as partial hydrogenation, which involves adding hydrogen to the molecule of an unsaturated compound. The hydrogenation of vegetable oils makes them solid at room temperature and improves their stability: a major “plus” for food manufacturers.

Trans fat is linked with a plethora of health concerns, including cardiovascular disease. Specifically, trans fat raises LDL (“bad”) cholesterol, while lowering HDL (“good”) cholesterol. In addition, research indicates that consuming trans fats ups the risk of diabetes, infertility, immune dysfunction, breast cancer and prostate cancer.

New York City outlawed the use of trans fats (partially hydrogenated oils) in restaurants. Similar bans are currently under consideration in other cities, including Boston and Chicago.

In addition, many restaurant chains and food manufacturers have voluntarily eliminated the use of trans fats in response to demand from consumers and health-care organizations.

### What’s Replacing Trans Fat?

Some restaurants and food manufacturers are replacing trans fat with healthier alternatives. Ultimately, the best alternatives are monounsaturated lipids, such as olive oil and canola oil — which boost beneficial HDL while lowering harmful LDL.

Other companies are replacing trans fats with unsaturated fats or saturated fats that have been left in their natural state and not hydrogenated. Unsaturated fats include most vegetable and seed-based oils. Saturated fats include animal fats, such as butter and cream. While these fats are not as destructive to health as trans fats, they (particularly saturated fats) have been linked with a bolstered risk of cardiovascular disease and other disorders.



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Unfortunately, researchers estimate that the No. 1 fat replacing trans fat is another manufactured type of fat, known as interesterified fat, or fully hydrogenated oils. Interesterified fat is a modified fat that involves hydrogenation followed by rearrangements of fat molecules through a process called interesterification.

### **What's Wrong With Interesterified Fat?**

Research conducted in Malaysia and at Brandeis University shows that interesterified fat raises blood glucose and depresses insulin in humans — common precursors to diabetes. Furthermore, like trans fat, interesterified fats still adversely depress beneficial HDL cholesterol (*Nutr Metab* 2007;4:3).

The study shows that interesterification, which unnaturally rearranges the position of individual fatty acids on the fat molecule, can alter metabolism in humans.

As part of the experiment, researchers compared trans fats (partially hydrogenated soybean oil) and interesterified fats (hydrogenated soybean oil) with an unmodified saturated fat (palm oil).



Thirty human volunteers participated in the study, which strictly controlled total fat and fatty acid composition in the participants' diets. Each subject consumed all three diets in random

rotation during four-week diet periods. This study confirmed previous studies in animals and humans, indicating once again that trans fats lower HDL, while boosting LDL.

In addition, the study found that interesterified fat had a similar, though weaker, impact on cholesterol. However, it also appeared to alter glucose metabolism much more profoundly than do trans fats.

“In this study, we discovered that trans fat also has a weak negative influence on blood glucose. The newer replacement for trans, so-called interesterified fat, appears even worse in that regard, raising glucose 20 percent in a month,” explains study co-author, biologist and nutritionist, K.C. Hayes.

### **Implications of the Research**

When asked to comment on the implications of their study, the researchers provided key insight into the possible health effects of interesterified fats.

“One of the most interesting aspects of these findings is the implication that our time-honored focus on fat saturation may tell only part of the story,” notes Hayes.

“Now it appears that the actual structure of the individual fat molecule is critical, that is, the specific location of individual fatty acids, particularly saturated fatty acids, on the glycerol molecule as consumed seems to make a difference on downstream metabolism of fat and glucose,” Hayes continues.

“This is the first human study to examine simultaneously the metabolic effects of the two most common replacement fats for a natural saturated fat widely incorporated in foods. As such, it is somewhat alarming that both modified fats failed to pass the sniff test for metabolic performance relative to palm [oil] itself,” adds Dr. Kalyana Sundram, study co-author.

“Whether this reflects the amount of test fat consumed, underlying genetics

of the specific population examined, or some unknown factor, requires further study because the apparent adverse impact on insulin metabolism is a troubling finding.”



### **How Do I Determine if a Food Includes Trans Fat or Interesterified Fat?**

In ingredient lists, look for the terms “partially hydrogenated,” “hydrogenated” or “fully hydrogenated” preceding the name of any type of oil. “Partially hydrogenated” designates a trans fat. “Hydrogenated” or “fully hydrogenated” refers to an interesterified fat.

Foods most likely containing these fats include baked goods, margarines, fried foods and packaged snack items.

Contact restaurants you frequent to inquire if they use any partially hydrogenated or fully hydrogenated oils. Request a response in writing. Many major chain restaurants also offer nutritional information online.

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