

The Skinny on *Trans* Fat
By Christine Kemp

WHAT IS THE PROBLEM?

How educated are the people of the United States nation on the topic of nutrition? According to the Center of Disease Control and Prevention, 25.12 % of the nation is obese and 60.5% are considered overweight. A group of Johns Hopkins University researchers have predicted that by the year 2015, 75 % of US adults will be overweight and 41 % will be obese. What's even scarier is that by 2015 the obesity rate in children is expected to jump up from 16% to 24 % (3). Maybe if people picked up a book and got the skinny about the severity of obesity and cardiovascular disease, then they would change a thing or two about their nutritional lifestyle in order to be healthy. The amount of uneducated people in the field of nutrition is highly unfortunate considering obesity contributes to cardiovascular disease, coronary artery diseases, some forms of cancer, and type 2 diabetes, which make up 2/3 of all deaths in the U.S.

WHAT IS TRANS FAT?

A significant factor that has been of controversy over the past few years because it leads to obesity, is the consumption of **trans fatty acids**. Probable reasons that *trans* fats is a problem is because people are unaware of what *trans* fat is, what does to their bodies, where it comes from, what foods it is in, how much they are consuming (because they don't pay attention or due to tricky wordings of packaging labels), the fact that up until about 2006, *trans* fat was not required to be on a nutritional label, or how they can avoid or replace it.

There are four kinds of fats in the food world. Monounsaturated and polyunsaturated are the two healthy fats while saturated fats are unhealthy. *Trans* fatty acids, or *trans* fat, is the fourth and worst kind of fat. *Trans* fat is made via a process that turns a good vegetable oil into a solid oil that provides a longer shelf-life in baked products, a longer fry-life for cooking oils, and a flavor stability of foods (7).

WHERE DO I FIND TRANS FAT?

There is not much concern towards the naturally occurring *trans* fat that is found in low levels in pomegranates, cabbage, peas, or the type found in meat and dairy products due to the fermentation process in the animal's rumens (4). The major dietary sources of this type of fat is found in vegetable shortenings, solid margarines, crackers, candies, cookies, cakes, bread, snack foods, fried foods, baked goods, processed food and most importantly, fast foods- basically anything that comes in a plastic packaged box or wrapper.

Researches have recommended to only consume, at most, 10% of these unhealthy fats (saturated and *trans* fatty acids) of total caloric intake for one day (6). This is approximately 22 grams. To give you a better idea of this, it would mean to consume a little over 3 glazed Dunkin' Donuts. In that is about 13 grams of *trans* fat and 8 grams of saturated fat (11). Mind you, this approximation is the total number of both of the unhealthy fats combined. To make this a little more clear, you can consume this amount with one sitting of Orville Redenbacher's Movie Theater Popcorn (11). It is extremely simple to meet that maximum recommendation, which means it's also extremely simple to over consume unhealthy fats. that cause severe health conditions and diseases due to problems with cholesterol.

CHOLESTEROL AND YOUR HEALTH

There are two types of cholesterol: Low-density lipoprotein (LDL) and High-density lipoprotein (HDL). The intake of *trans* fat results in low HDL and high LDL.

LDL is the “bad” cholesterol because too much can lead to the deadly coronary artery disease.. Too much LDL is problematic because the cholesterol gets deposited in the walls of your arteries as plaque. Plaque buildup then causes a blockage in the arteries that makes it harder for blood to flow to and from your heart, which is what is known as the disease atherosclerosis (5). The hardening of the arteries can eventually completely block your arteries and cause a heart attack or stroke. Levels over 200 mg/dl of LDL put you at a cholesterol crisis.

HDL, on the other hand, is the good cholesterol because it works to prevent coronary artery disease. HDLs are good because they help remove cholesterol from the artery walls and transfer it to the liver to be excreted from the body and prevent LDL buildup in the blood vessels (5). HDL levels should be around 40 mg/dl Levels over 60 mg/dl are exceptionally good and can cancel out with another risk factor for cardiovascular disease.

WILL IT REALLY HARM ME?

The adverse effect that *trans* fat has on the body has become a serious issue. The numbers alone that have been discovered through rigorous research and studies prove how deadly *trans* fat can be. It plays a critical role in the following health issues:

- 30,000 premature coronary deaths per year = 82 deaths per day (7)
- 33% higher risk of heart disease in women (10)
- 50% higher risk of heart disease in people younger than 65 yrs (10)
- 53% more likely to have a heart attack (6)

- High LDL cholesterol, coronary artery disease, type 2 diabetes, heart attacks, death, and obesity-- even when trans fat intake is as low as 3% of total caloric intake (2-7 grams per day based on a 2000 calorie diet) (6)

HOW FAST FOOD COMES INTO PLAY

A perpetual cause of these diseases is the consumption of Fast Foods in America. On a typical day, 30.3 % of children aging from 4-19 years old consume fast food (2). It is not a surprise that fast food consumers also consume more *trans* fat, more total fat, more carbohydrates, more added sugars, more sugar sweetened beverages, less fluid milk, and fewer fruits and vegetables (2). Not only are the fast food eaters taking in more *trans* fat than others, they are also taking in more of all the wrong things!

The reason for this massive intake of *trans* fat is due to the fact that tons of partially hydrogenated oil is used for cooking of French fries, hash browns and most fried chicken products. Burger King's medium fries contain 4.5 grams of *trans* fat and 5 grams of saturated fat, and Wendy's medium fries contain 6 grams and 3 grams of *trans* and saturated fats, respectively. McDonald's large fries contain 8 grams of *trans* fats and has total fat equaling 30 grams. And we're not talking about any supersizing here.

The reason why *trans* fats are essential to fast food restaurants is because of the product quality and customer satisfaction from the specific taste it gives its foods. It is also more cost efficient than alternatives. Because of the dangers that *trans* fat has been proving to cause, and the high levels that are consumed via fast foods, these burger-chain restaurants have been continuously lowering the amount of *trans* fat they use in their foods. As of February of 2004, McDonald's has said that it would have 48% less *trans* fat (11). 48% is a significant

improvement, however, still leaves a fair amount of *trans* and saturated fats in its foods.

McDonald's has also reported that more than 1200 of its US restaurants have switched to a *trans*-fat-free blend of canola, soybean, and corn oils for frying (3). By the end of 2008, Burger King has phased out *trans* fat cooking oil in all of its 7100 US restaurants (3). Wendy's also announced its elimination of *trans* fat oils in August of 2006 (11).

The fact that these fast food industries are replacing or getting rid of as much *trans* fat as they can must tell us something. Even though fast food industries will continue to make America an even fatter and lazier country, hopefully these reductions and replacements will improve heart health.

HOW YOU COME INTO PLAY

Now that you have been sufficiently informed about *trans* fat, you are probably wondering how you can limit these cardiovascular risks in your own diet.

First thing to know is that there are several, alternatives to partially hydrogenated fats and oils. These alternatives include: palm oil, low-linoleic soybeans, canola oils, and tropical oils.

Next thing to know is that manufactures try to be tricky! In 2006, FDA made it a requirement to indicate *trans* fatty acid content in nutrition labels (4), however, companies try to find ways around telling people exactly what they are consuming. A product might not contain the direct wordings of "*trans* fat", but instead might use the terms "partially hydrogenated vegetable oil" or "shortening" in the ingredients list. This is a direct indication that *trans* fat is located in the product.

Another good fact to know is that the ingredients are listed in descending order of predominance, so if "partially hydrogenated" is somewhere in the beginning of the list, it

probably means there is a lot of *trans* fat in the product.

Under FDA regulations, it is said that "if a serving contains less than 0.5 grams of *trans* fat it shall be expressed as zero." This means that products can say that there is zero *trans* fat, when there actually is *trans* fat in the food. For example, a product can read that there is zero *trans* fat but actually contain 0.4 grams per serving. Say, in one sitting 4 servings are consumed, this essentially means that 1.6 grams of *trans* fat have actually been taken in.

It is also good to not be shy and ask when at a restaurant or bakery whether they use partially hydrogenated oil for frying or use it in salad dressings. You never know what they are doing back in the kitchen, so it is nice to be informed of what you could be consuming.

A final trick that industries try to get consumers with is a "cholesterol free" advertisement. The product itself can in fact contain no cholesterol, but if it contains *trans* or saturated fats, then it still raises bad cholesterol. Some common foods and their fatty amounts are found below to help guide you in not exceeding the recommendation (14, 11, 12).

Bad Fats in Common Foods			
Food	Size	<i>Trans</i> Fat (grams)	Total Fat (grams)
McDonald's Fries	Large	8	30
KFC's Chicken Pot Pie	One	14	40
Crispy Chicken Strips	Three pieces	15	19
Bag of Chips	Small	3.2	11.2
Pound Cake	1 Slice	4.3	16.4
Wheat Crackers	50 grams	4	10
Jell-O Pudding	1 Container	1.5	3.5
Glazed Dunkin' Donut	One	4	12.5
Frito-Lay Chips (Tostitos, Tortilla Chips)	6 Chips	0.5	6
Burger King Dutch Apple Pie	1 Wedge	2	12
Nabisco Chocolate Chip Cookies	3 Cookies	1.5	6

TRANS FATTY CONCLUSION

There used to be no consistent indication of *trans* fat intake adversely affecting health between 1960 and 1990 (4). Since then, *trans* fatty acids has been a popular and controversial topic. Food companies, restaurants, and other eateries are becoming more aware and doing their best to replace or phase out the use of these *trans* fatty acids in their food products in order to prevent these deadly diseases and improve the overall health of our nation. However, it is not just up to the authorities to do the best that they can. Everyday consumers must become more knowledgeable about their health.

References

1. A heartfelt legacy from long-lived parents. *Harvard Health Letter* 14(2): 7, 2007.
2. Bowman SA, Gortmaker SL, Ebbeling CB, Pereira MA, Ludwig DS. Effects of fast-food consumption on energy intake and diet quality among children in a national household survey. *Official Journal of the American Academy of Pediatrics*. 113(1): 112-118, 2004.
3. Burger king dethrones trans fats, Weight watching: 75% of Americans fat by 2015. *Tufts University Health and Nutrition Letter*. 3, 2007.
4. Eckel RH, Borra S, Lichtenstein AH, Yin-Piazza SY. Understanding the complexity of trans fatty acid reduction in the American diet: American heart association trans fat conference 2006: Report of the trans fat conference planning group. *Circulation Journal of the American Heart Association* 115(16): 2231-2246, 2007.
5. Gordon, J. How cholesterol works [Online]. How Stuff Works. <http://health.howstuffworks.com/cholesterol.htm> [10 Feb. 2009].
6. The hidden fat: Trans fat is unlabeled--and unhealthy. *Consumer Reports* 63(11): 60-61, 1998.
7. Joseph, S. 2007. Ban trans fat. [Online]. Ban trans fat, Inc. <http://bantransfat.com/index.html> [10 Feb. 2009].
8. Lopez-Garcia E, Schulze MB, Meigs JB, Manson JE, Rifai N, Stampfer MJ, Willett WC, Hu FB. Consumption of trans fatty acids is related to plasma biomarkers of inflammation and endothelial dysfunction. *The Journal of Nutrition* 135(3): 562-566, 2005.
9. Mello MM, Rimm EB, Studdert DM. The McLawsuit: The fast-food industry and legal accountability for obesity. *Health Affairs (Project Hope)* 22(6): 207-216, 2003.
10. Merchant AT, Kelemen LE, de Koning L, Lonn E, Vuksan V, Jacobs R, Jacobs R, Davis B, Teo KK, Yusuf S, Anand SS. Interrelation of saturated fat, trans fat, alcohol intake, and subclinical atherosclerosis. *The American Journal of Clinical Nutrition* 87(1): 168-174, 2008.
11. The stealth fat. *Consumer Reports* 68(3): 28-31, 2003.
12. Taylor, J. Fast food chains ready to reduce trans fat: Is this message on health risks starting to filter through? *Active Living* 15(5): 16-18, 2006.
13. Time to fatten up our diets. saturated and trans fat? no. but replacing carbohydrates with unsaturated fat could lead to longer, healthier life. *Harvard Health Letter* 32(11): 1-3, 2007.

14. The trouble with trans fat. *Harvard Women's Health Watch* 11(7): 1-3, 2004.