

The dangers of trans fatty acids and hydrogenation

By the US National Sunflower Association

A major new report issued by the Institute of Medicine of the National Academies of Science (NAS) states that there is no safe level of trans fatty acids and recommends consuming as few trans fatty acids as possible while still consuming a nutritionally adequate diet.

The report concludes that trans fatty acid intake is associated with elevated total and 'bad' low-density lipoprotein (LDL) cholesterol, and therefore increased risk of coronary heart disease. Since low levels of trans fatty acids are found naturally in some nutrient-rich animal products, it is recommended that consumption of the trans fatty acids found in fried or processed food be minimised as much as possible.

Update on trans fat labelling

In 1999 the Food and Drug Administration (FDA) proposed regulations that would force manufacturers to list the trans fat content on product labels to allow consumers to identify the amount of trans fat in food.

Currently, trans fat is included in the 'total fat' values, which creates some confusion about the health implications of trans fat. In response, some groups have advocated that, since saturated fat and trans fat both raise your total and 'bad' LDL cholesterol, they should appear on the same line on the label. To date, however, the FDA supports the position that the saturated fat and trans fat values should be listed separately.

The FDA issued final regulations in early 2003 that required trans fat to be listed on labels. The labelling regulations

and subsequent educational activities will heighten interest in alternative 'healthy fats' to improve the nutritional quality of baked and fried food.

History of hydrogenation

Some of the food in the Western diet that currently contributes to the consumption of trans fatty acids include some margarines, cookies, crackers, pastries, fried food, dairy products and meats. In addition, many oils have been hydrogenated when used commercially to increase shelf life and heat stability, especially when used for frying. This processing adds harmful trans fat to the oil.

Trans fatty acids are created in the food supply by the process called hydrogenation, which dates back to the 1900s. This process entails heating liquid oils in the presence of metal catalysts and hydrogen that hardens the oil into margarine and shortening. The resultant hydrogenated fat has become widely used in food over the past 20 years, mostly because it was viewed as a healthier alternative to animal fats, which contain saturated fat and cholesterol.

Trans fat increased in the food supply as the industry responded to the health community's call to reduce saturated fat in processed food, while consumers still demanded a tasty alternative.

Without hydrogenation, manufacturers found that the healthier liquid oils spoiled more quickly than saturated fats, could not withstand the high heat used in deep fryers, and made baked goods runny. Hydrogenated fats solve these technical problems and are pleasing to the consumer since they provide a good taste, better texture and increased shelf life.

Currently, the FDA estimates that 42 700 products on grocery store shelves contain either fully or partially

hydrogenated oils, which indicates the possible presence of trans fatty acids.

Research on trans fat

More recently, research revealed cause for concern relating to the negative health effects of trans fatty acids. The scientific evidence has been mounting over the past few years and now supports the need for trans fat labelling regulations. As is the case with saturated fat, trans fatty acids have consistently been reported to raise total and 'bad' LDL cholesterol levels.

In addition, evidence shows that trans fats lower the 'good' high-density lipoprotein cholesterol, whereas saturated fats do not. The effects of trans fatty acids on blood lipids and lipoprotein concentrations are viewed as strong risk factors for the development of cardiovascular disease.

Recommendations for trans fat

Although there is no established daily value for trans fat, the new report from the NAS says trans fat should be as limited as possible in people's diets. Currently, trans fatty acids constitute approximately 2 to 2,5% of total energy in the American diet.

The current daily value for saturated fat is less than 10% of total calories, yet it currently accounts for between 12 and 14% of total energy. Together saturated fat and trans fat currently constitute an average of 15% of total calories in the American diet, much higher than the latest reports and guidelines recommend. Public education and the provision of information about trans fatty acid content on food labels will help consumers lower their intake of these harmful fats and switch to 'good fats' in their diet. 🍌

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