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The Case for Banning Trans Fats

The FDA's new policy on these deadly artificial fatty acids is long overdue



In November 2013 the U.S. Food and Drug Administration made the welcome, belated determination that partially hydrogenated oils—the primary source of trans fats—could no longer be “generally regarded as safe.” At press time, the ruling is preliminary but expected to become permanent. If it does, it will virtually eliminate industrially produced trans fats in the U.S., saving thousands of lives every year, with minimal cost to industry.

In 1901 German chemist Wilhelm Normann discovered the process of partial hydrogenation, which converts inexpensive liquid vegetable oils into shortenings and margarines and creates trans fats as a by-product. Because these cheaper, longer-lasting products mimicked the traditional cooking fats of European and North American cuisines, many countries quickly incorporated them into their food supplies. In 1912 the inventors of partial hydrogenation received the Nobel Prize. It took decades for scientists to realize how deadly trans fats could be, partly because the food industry and the cardiovascular prevention community dismissed concerns over adverse effects on health, but the evidence continued to mount.

In 1980 my colleagues and I set out to examine in greater detail the relation between intake of trans fats and risk of coronary heart disease. We included trans fats in a comprehensive assessment of diet in the Nurses' Health Study cohort of more

than 100,000 women and developed a regularly updated database of the trans-fat content of foods. After eight years of follow-up and after accounting for known risk factors for heart disease, we found that women with the highest intake of trans fats had a 50 percent higher risk of hospitalization or death attributable to coronary heart disease. Margarine, the primary source of trans fat in 1980, was also associated with greater risk.

Around the same time, Dutch researcher Martijn Katan and his colleagues were investigating the metabolic effects of trans fats among healthy volunteers in carefully controlled feeding studies lasting several weeks. They found that trans fat and saturated fat increased “bad” LDL cholesterol to a similar degree—but unlike any other type of fat, trans fat also reduced “good” HDL cholesterol. Other researchers confirmed these findings and documented additional adverse metabolic effects, including increases in blood concentrations of triglycerides and inflammatory factors. Calculations suggested that eliminating industrially produced trans fats would prevent up to 20 percent of avoidable cardiac disease deaths in the U.S.

By 2003 the FDA found the evidence compelling enough to require that trans fats be included on food labels. Most manufacturers responded by eliminating them entirely. Soon thereafter New York City banned their use in restaurants, and other cities nationwide followed. By 2012 approximately 75 percent of trans fats had been removed from the U.S. food supply. Blood cholesterol levels responded nationally, just as expected.

The U.S. Centers for Disease Control and Prevention has estimated that the 25 percent of trans fats still coursing through the American food supply account for approximately 7,000 premature deaths a year. The FDA's recent decision would prevent those deaths. The food industry most likely will take the new ruling in stride. It has already phased out the large majority of trans fats, and in Denmark they have already been banned for a decade, proving that full elimination is feasible.

The FDA's action is cause for some celebration. It means that the efforts of many scientists from many disciplines will soon lead to the elimination of a major cause of premature death. Because of the FDA's global leadership role, the ruling is even likely to stimulate similar changes worldwide. But we should not get too carried away. It is sobering that it has taken more than a century for this moment to arrive. The case of trans fats should provoke us to consider how future risks might be prevented, detected or eliminated more quickly. **SA**

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