

GENETICALLY ENGINEERED SOYBEANS MAY CAUSE ALLERGIES

Dr. Joseph Mercola¹

"I used to test for soy allergies all the time, but now that soy is genetically engineered, it is so dangerous that I tell people never to eat it—unless it says organic."

-Allergy specialist John Boyles, MD

Beginning in 1996, genes from bacteria and viruses have been forced into the DNA of soy, corn, cotton, and canola plants, which are used for food. Ohio allergist John Boyles is one of a growing number of experts who believe that these genetically modified (GM) foods are contributing to the huge jump in food allergies in the US, especially among children. The UK is one of the few countries that conduct a yearly food allergy evaluation. In March 1999, researchers at the York Laboratory were alarmed to discover that reactions to soy had skyrocketed by 50% over the previous year. Genetically modified soy had recently entered the UK from US imports and the soy used in the study was largely GM. John Graham, spokesman for the York laboratory, said, "We believe this raises serious new questions about the safety of GM foods."

Genetic Engineering May Provoke Allergies

There are many ways in which the process of genetic engineering may be responsible for allergies. The classical understanding is that the imported genes produce a new protein, which may trigger reactions. This was demonstrated in the mid 1990s when soybeans were outfitted with a gene from the Brazil nut. While scientists attempted to produce a healthier soybean, they ended up with a potentially deadly one. Blood tests showed that people allergic to Brazil nuts reacted to the beans. It was never marketed.

The GM variety planted in 91% of US soy acres is called Roundup Ready—engineered to survive otherwise deadly applications of Monsanto's Roundup herbicide. The plants contain genes from bacteria, which produce a protein that has never been part of the human food supply. Since people aren't usually allergic to a food until they have eaten it several times, no tests can prove in advance that the protein will not cause allergies.

As a precaution, scientists compare this new protein with a database of proteins known to cause allergies. According to criteria recommended by the World Health Organization (WHO) and others, if the new GM protein contains amino acid sequences that have been shown to trigger immune responses in other proteins, the GM crop should not be commercialized (or additional testing should be done). Sections of the protein produced in GM soy, however, are identical to shrimp and dust mite allergens. But the soybean got marketed anyway. Frighteningly, **the only published human feeding study on GM foods ever conducted verified that the gene inserted into GM soy transfers into the DNA of our gut bacteria and continues to function.** This means that years after we stop eating GM soy, we may still have the potentially allergenic protein continuously produced within our intestines.

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Damaged Soy DNA Creates New (Or More) Allergens

The process of creating a GM crop produces massive collateral damage in the plant's DNA. Native genes can be mutated, deleted, permanently turned on or off, and hundreds may change their levels of protein expression. This can increase existing allergen, or produce new unknown allergens. Both appear to have happened in GM soy. Levels of one known soy allergen, trypsin inhibitor, were up to seven times higher in cooked GM soy compared to cooked non-GM soy. Another study discovered a unique, unexpected protein in GM soy, likely to trigger allergies. In addition, of eight human subjects who had a skin-prick (allergy-type) reaction to GM soy, one did not *also* react to non-GM soy, suggesting that GM soy is uniquely dangerous.

Increased Herbicides, Digestive Problems and Allergies

Farmers use nearly double the amount of herbicide on GM soy compared to non-GM soy; higher herbicide residues might cause reactions. GM soy reduces digestive enzymes in mice. If proteins "digest" slowly in humans, there is more time for allergic reactions (possibly to *many* food proteins).

Eating GM Foods is Gambling With Our Health

Documents made public from a lawsuit revealed that FDA scientists were uniformly concerned that GM foods might create hard-to-detect allergies, toxins, new diseases, and nutritional problems. Their urgent requests for required long-term feeding studies fell on deaf ears. The FDA doesn't require a single safety test. The person in charge of that FDA policy was Monsanto's former attorney, who later became their vice president. Buying products that are organic or labeled non-GMO are two ways to limit your family's risk. Another is to avoid products containing any ingredients from the seven GM food crops: soy, corn, cottonseed, canola, Hawaiian papaya, and a little bit of zucchini and crook neck squash. This means avoiding soy lecithin in chocolate, corn syrup in candies, and cottonseed or canola oil in snack foods.

To learn more about the health dangers of GMOs, and what you can do to help end the genetic engineering of our food supply, visit [**www.ResponsibleTechnology.org**](http://www.ResponsibleTechnology.org). To learn how to choose healthier non-GMO brands, visit [**www.NonGMOShoppingGuide.com**](http://www.NonGMOShoppingGuide.com).

International bestselling author and filmmaker Jeffrey Smith is the leading spokesperson on the health dangers of genetically modified (GM) foods. His first book, *Seeds of Deception*, is the world's bestselling and #1 rated book on the topic. His second, *Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods*, provides overwhelming evidence that GMOs are unsafe and should never have been introduced. Mr. Smith is the executive director of the Institute for Responsible Technology, whose Campaign for Healthier Eating in America is designed to create the tipping point of consumer rejection of GMOs, forcing them out of our food supply.