

Health Risks of GM Foods

from *Genetic Roulette: The Documented Health Risk of Genetically Engineered Foods*, by Jeffrey M. Smith. © copyright Institute For Responsible Technology 2008
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Did you know... Genetically modified organisms (GMOs) are not safe. They have been linked to thousands of toxic and allergenic reactions, thousands of sick, sterile, and dead livestock, and damage to virtually every organ and system studied in lab animals.

Did you know... genetic modification is radically different from natural breeding. Genetic engineering transfers genes across natural species barriers, using imprecise laboratory techniques that bear no resemblance to natural breeding. Gene insertion is done either by shooting genes from a “gene gun” into a plate of cells or by using bacteria to invade the cell with foreign DNA. The altered cell is then cloned into a plant. These processes create massive collateral damage, causing mutations in hundreds or thousands of locations throughout the plant’s DNA. Natural genes can be deleted or permanently turned on or off, and hundreds may change their levels of expression. The inserted gene is often rearranged; it may transfer from the food into our body’s cells or into the DNA of bacteria inside us. And the GM protein produced by the gene may have unintended properties or effects.

Genetically Modified Organism = GMO = Genetically Engineered = GE

Functioning GM genes in YOU

Unlike safety evaluations for drugs, there are no human clinical trials of GM foods. The only published human feeding experiment verified that genetic material inserted into GM soy transfers into the DNA of intestinal bacteria and continues to function. This means that long after we stop eating GM foods, we may still have their GM proteins produced continuously inside us. Animal studies show that DNA in food can

travel into organs throughout the body, even into the fetus.

◆ If the antibiotic gene inserted into most GM crops were to transfer, it could create super diseases resistant to antibiotics.

◆ If the gene that creates Bt -toxin in GM corn were to transfer, it could turn our intestinal flora into living pesticide factories.

GM soy & allergic reactions

➤ Soy allergies skyrocketed by 50% in the UK, soon after GM soy was introduced. A human subject showed a skin prick allergic-type reaction to GM soy, but not to natural soy.

➤ The level of one known soy allergen is as much as 7-times higher in cooked GM soy compared to non-GM soy.

➤ GM soy also contains an unexpected allergen-type protein not found in natural soy.

➤ Although the World Health Organization recommends a protein screening protocol, the GM soy, corn, and papaya in our food supply fail those tests— because they have properties of known allergens.

GMOs cause immune reactions to non-GM foods

● If proteins “digest” slowly, there is more time for allergic reactions. Because GM soy reduces digestive enzymes in mice, it may slow protein digestion and promote allergies to many foods.

● A mouse test indicated that people eating GM peas could develop allergies both to the peas and to a range of other foods. The peas had already passed all the allergy tests normally used to get GMOs on the market. It took this advanced mouse test, which was never used on the GMOs we eat, to discover that the peas could be deadly.

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Bt-toxin in corn and cotton: linked to allergies & deaths

The biotech industry claims that Bt-toxin is harmless to humans and mammals because the natural bacteria version has been used as a spray by farmers for years. Bt in GM crops is designed to be more toxic than the natural spray and is thousands of times more concentrated. Hundreds of people exposed to Bt spray have had allergic-type symptoms. Mice fed Bt had powerful immune responses and damaged intestines.

⇒ Bt Corn: Farmers in Europe and Asia say that cows, water buffaloes, chickens, and horses died from eating Bt corn varieties. About two dozen US farmers report that Bt corn varieties caused widespread sterility in pigs or cows. People in at least five villages in the Philippines fell sick when a nearby Bt corn variety was pollinating.

GM potatoes, GM canola: liver & stomach problems

- ♦The stomach lining of rats fed GM potatoes showed excessive cell growth- which may be a precursor to cancer – and damaged organs and immune systems.
- ♦Rats fed GM potatoes had smaller, partially atrophied livers.
- ♦The livers of rats fed GM canola were 12-16% heavier.

GM soy: reproductive & liver problems, & infant mortality

- ❖ More than half the offspring of mother rats fed GM soy died within three weeks.
- ❖ Male rats and mice fed GM soy showed changes in their testicles; the mice had altered young sperm cells.
- ❖ The DNA of mouse embryos whose parents ate GM soy functioned differently than those whose parents ate non-GM soy.
- ❖ Many offspring of female rats fed GM soy were considerably smaller, and more than half died within three weeks (compared to 10% of the non-GM soy controls).

❖GM soy altered mouse liver cells in ways that suggest a toxic insult. The changes reversed after their diet switched to non-GM soy.

GM food supplement caused deadly epidemic

In the 1980s, a contaminated brand of a food supplement called L-tryptophan killed about 100 Americans and caused sickness and disability in another 5,000-10,000 people. The source of contaminants was almost certainly the genetic engineering process used in its production. The disease took years to find and was almost overlooked. It was only identified because the symptoms were unique, acute, and fast-acting. If all three characteristics were not in place, the deadly GM supplement might never have been identified or removed.

If GM foods on the market are causing common diseases or if their effects appear only after long-term exposure, we may not be able to identify the source of the problem for decades, if at all. There is no monitoring of GMO-related problems. There are no long-term animal studies. Heavily invested biotech corporations are gambling away our health for profit.

Help end the genetic engineering of our food supply

When the tipping point of consumer concern about GMOs was achieved in Europe in 1999, within a single week virtually all major food manufacturers committed to remove GM ingredients.

**What can you do? Join G.E. Free B.C.
Go to: www.gefreebc.org
Get update emails by subscribing at contact@gefreebc.org
Buy organic, non-GMO, food. Support non-GMO farmers. Plant non-GMO seeds & save seeds. Support the ban on Terminator seeds. Tell stores & schools & companies & politicians we do not want GM food.**