

GM foods are more dangerous for children than adults

Excerpted from Jeffrey M. Smith's *Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods*

"Swapping genes between organisms can produce unknown toxic effects and allergies that are most likely to affect children."¹³ —Vyvyan Howard, expert in infant toxico-pathology at Liverpool University Hospital, United Kingdom

Changes in nutrition have a greater impact on the structure and functioning of young, fast-growing bodies. More of the food is converted to build organs and tissues, whereas adults convert more to energy and store this as fat.

The UK Royal Society said that genetic modification "could lead to unpredicted harmful changes in the nutritional state of foods" and recommended that potential health effects of GM foods be rigorously researched before being fed to pregnant or breast-feeding women and babies."¹⁴ Epidemiologist Eric Brunner said that "small changes to the nutritional content might have effects on infant bowel function."¹⁵

Children are more susceptible to problems

Children are three to four times more prone to allergies than adults and "are at highest risk of death from food allergy."¹⁶ Infants below two years old have the highest incidence of reactions, especially to new allergens encountered in the diet. Even tiny amounts of allergens can sometimes cause reactions. One reason for this sensitivity, according to the EPA, is that "An immature gut or permeable mucosal epithelium is more likely to allow a higher degree of macromolecular transport and access to the immune system than the intact barrier of a normal mature gut. . . . The immune system must also be of sufficient maturity. . . . Both systems appear to be functioning optimally by age three to five."¹⁷

According to the Royal Society of Canada, "The potentially widespread use of GM food products as food additives and staple foods, including use in baby foods, may lead to earlier introduction of these novel proteins to susceptible infants either directly or via the presence of the maternally ingested proteins in breast milk."¹⁸

The UK Royal Society suggested that "post-marketing surveillance should be part of the overall safety strategy for allergies, especially of high-risk groups such as infants," but acknowledged that it is not clear "whether such monitoring is feasible for GM food."¹⁹

Children can react to much smaller doses of toxins than adults. Exposure to hormones or endocrine disruptors may also severely affect normal development. And children who are prone to infections may be severely impacted if antibiotics lose their effectiveness due to antibiotic-resistant genes in GM food and the overuse of antibiotics in rbGH treated cows.

Children have a high exposure to GMOs

Children consume a large amount of products that may be genetically engineered. They eat a higher percentage of corn in their diet compared to adults, and allergic

children often rely on corn as a source of protein. Mothers using cornstarch as a talc substitute on their children's skin might also expose them via inhalation. Infants are sometimes reared on soy infant formula. The Royal Society wrote, "Infant formulas, in particular, are "consumed as a single food over extended periods of time by those who are especially vulnerable" and "should be investigated most rigorously."²⁰ Among the potential side effects are changes in soy's natural estrogen mimickers, which may influence sexual development.

Children consume a disproportionately large amount of milk. In the United States and elsewhere, dairy products may come from cows treated with the genetically engineered bovine growth hormone (rbGH). The milk contains increased amounts of hormones and antibiotics and an altered nutritional content (see section 7.1). According to a discussion paper on the public health implications of rbGH, published in the *Journal of the Royal Society of Medicine*, an "infant would be exposed to a dose of IGF-1, which was 12.5 times the recommended minimum."²¹ Samuel Epstein, chairman of the Cancer Prevention Coalition and an expert on the health effects of rbGH, says that risks of high exposure to IGF-1 are "of particular concern . . . to infants and children in view of their high susceptibility to cancer-causing products and chemicals."²² He also suggests that regular exposure might promote "premature growth stimulation in infants, gynecomastia [development of abnormally large breasts on males] in young children."²³

Safety assessments ignore children

An FAO/WHO task force on GM food said that "Attention should be paid to the particular physiological characteristics and metabolic requirements of specific population subgroups, such as infants [and] children."²⁴ In practice, GM safety assessments ignore them. In fact, industry funded studies often use mature animals instead of the more sensitive young ones, in order to mask results (see part 3).

Biologist David Schubert warns, "Since children are the most likely to be adversely effected by toxins and other dietary problems, if the GM food is given to them without proper testing, they will be the experimental animals. If there are problems, we will probably never know because the cause will not be traceable and many diseases take a very long time to develop."

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.

To learn how to choose healthier non-GMO brands, visit 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.

