

## How scientists evaluate potential health problems of GMOs

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One major public concern about GMOs is their affect on human health. Are there differences in nutritional content, allergic response, or undesired side effects such as toxicity, organ damage, or gene transfer? To address these concerns, over 100 research studies have compared effects of traditional food to GM food. Major health groups, including the American Medical Association and World Health Organization, have concluded that GM foods are safe for consumers.

Studies in rodents have tested the toxicity of GMOs. Despite massive ingestion of GMO potato, tomato, or sweet pepper, studies demonstrated no differences in the vitality or health of the animals, even at the microscopic level.

To discern whether GMO crops affect fertility or embryos during gestation, researchers again turned to studies on rats. For each generation, they tracked the fertility of parents and compared the health of the embryos from parents that ate GMOs to those with parents that did not. There were no differences in reproductive health or development.

Some wondered if genetically modified DNA would be unstable, causing damage (via unintentional mutations) to whomever would consume it. But studies in rodents show that genetically modified DNA did not cause increased mutations in consumers.

Others raised concerns that modified DNA in GMO foods may somehow transfer to organisms that eat them. But multi-generational studies in rats show that despite 5 generations of exposure to GMOs, the researchers were unable to detect modified genes in the rats' DNA.

After more than 20 years of monitoring researchers around the world, many of the suspicions surrounding the effects of GMOs on health, our offspring, and our DNA have been addressed and tested. GMOs have been found to exhibit no toxicity, in one generation or across many.

*Editor's Note: This post is part of a series on GMOs in a special edition of the online magazine "Signal to Noise", produced by Science in the News. You can read the entire series here: [Signal to Noise Special Edition: GMOs and Our Food](#)*

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