

# A QUESTION OF GMOs

## A Discussion Guide for Health Educators

People want to make informed food choices, and they look to you for answers—including answers about GMOs (genetically modified organisms).

This discussion guide includes concise, science-based answers to some of the common questions people might ask you about GMOs.



*“GMO” is a common term used to describe a plant, animal, or microorganism that has had its genetic material (DNA) changed using technology that involves specific modification of DNA, such as transferring specific DNA from one organism to another. Scientists often refer to this process as [genetic engineering](#)<sup>1</sup> (GE).*

## Are GMOs Safe to Eat?

Yes. In the U.S., GMO foods are held to the same safety standards as non-GMO foods. GMO foods are carefully studied for safety before they are sold to the public. Since GMO foods were introduced in the 1990s, [research](#)<sup>2</sup> has shown that they are just as safe to eat as non-GMO foods.

## Who Regulates GMOs?

Multiple federal agencies within the U.S. government work to regulate GMOs, including the U.S. Food and Drug Administration (FDA) in the U.S. Department of Health and Human Services, the U.S. Environmental Protection Agency (EPA), and the Animal and Plant Health Inspection Service in the U.S. Department of Agriculture (USDA). Each agency plays a part in ensuring that GMOs are safe for human, plant, and animal health. These agencies also monitor the impact of GMOs on the environment.

## What About Allergic Reactions?

Research shows that GMOs currently on the market are no more likely to cause allergic reactions than non-GMO foods.

Scientists who develop GMOs test to make sure new allergens are not introduced during the development

process. People with food allergies should continue to check food ingredient labels for the presence of allergens of concern to them, whether ingredients are from GMO or non-GMO crops.

## What About Celiac Disease?

There is no evidence that GMOs on the market today cause celiac disease. Celiac [disease](#)<sup>3</sup> is a serious condition that affects the digestive system. It is caused by an immune reaction in response to gluten, which is in wheat, rye, and barley.

If wheat, rye, or barley were ever to be used as a source of protein in a GMO food, FDA would very carefully consider whether that protein was one that would cause a reaction in people with celiac disease.

## Is There a Link Between GMOs and Cancer?

No. GMO crops are not changed in ways that would increase the risk of cancer for humans or animals. The National Academies of Sciences, Engineering, and Medicine [found](#)<sup>4</sup> that cancer rates in the United States, where GMOs are commonly eaten, are similar to cancer rates in Europe and the United Kingdom, where people eat less GMO foods.

## More questions?

These are just a few of the questions you might be asked. Visit [www.fda.gov/feedyourmind](http://www.fda.gov/feedyourmind) to find out more about GMOs.



<sup>1</sup><https://www.fda.gov/food/consumers/agricultural-biotechnology>

<sup>2</sup><https://www.nationalacademies.org/our-work/genetically-engineered-crops-past-experience-and-future-prospects>

<sup>3</sup><https://www.niddk.nih.gov/health-information/digestive-diseases/celiac-disease>

<sup>4</sup><https://www.nap.edu/read/23395/chapter/8>