



Stomach pain after eating apples?

Sometimes when I eat an apple, I get a stomachache afterward. Could it be from pesticide residues?

It's highly unlikely that your stomach pains are coming from pesticide residues. In fact, there's no evidence to support that notion.

It's true that apples tend to land high on the list of the highly publicized Environmental Working Group's annual Shopper's Guide to Pesticides in Produce. In fact, in its 2014 report, the organization said nearly all apples it tested were positive for at least one pesticide residue.

Although that sounds alarming, the report doesn't say much about the levels of pesticides detected. The organization uses data gathered by the U.S. Department of Agriculture to come up with its listings. In the data the group used for its 2014 guide, 743 of the 744 apples tested had residues lower than the government limits, most of them much, much lower. Remember, just because something is detected in minuscule amounts doesn't mean it's harmful. As with any substance, it's the dose that makes the poison.

A 2011 study in the *Journal of Toxicology* — written in direct response to the advocacy group's annual listings — analyzed the data and found that exposures to commonly detected pesticide residues pose a negligible risk — so low, in fact, that substituting organic produce for conventionally grown

“would not result in any appreciable reduction of consumer risks.”

Avoiding apples and other produce is a bigger risk: Their health benefits are well-documented.

Still, the stomach pains you describe are not uncommon after eating apples. So, what's going on?

A food intolerance is possible. A set of carbohydrate intolerances are suspected to play a role in some types of abdominal pain. If the problem is severe, you'll want to check with your doctor to get a diagnosis.

The organization Food Intolerances Diagnostics suggests people with this type of intolerance avoid foods with a fructose content of more than 3 grams per serving, or a fructose-to-glucose ratio greater than 1. A fresh apple has 6 grams of fructose per 100-gram serving (or 3.5 ounces), and a fructose-to-glucose ratio of about 2.

If this is what's going on, only you can decide if you enjoy eating a fresh, crisp apple enough to endure any resulting discomfort.

Finally, as with all fresh produce, don't forget to rinse it thoroughly under running water first, preferably just before eating. That will dislodge any surface dirt and bacteria and wash it away.

Chow Line is a service of Ohio State University's College of Food, Agricultural, and Environmental Sciences and its outreach and research arms, Ohio State University Extension and the Ohio Agricultural Research and Development Center. Send questions to Chow Line, c/o Martha Filipic, 2021 Coffey Road, Columbus, OH, 43210-1043, or filipic.3@osu.edu.



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