

Arsenic in apple juice: Should you be worried about Walmart's recent recall?

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Arsenic is called the "king of poisons and the poison of kings," due to its [historical use in assassinations](#).

Now, Walmart has issued a recall for [apple juice](#) sold in 25 states, citing

elevated levels of the toxin. With apple season just around the corner, should you be concerned?

"Apple juice can still be considered a safe beverage if consumed in moderation and if it meets regulatory standards for [arsenic levels](#)," says Darin Detwiler, associate teaching professor at Northeastern University and a food policy expert. "However, I would advise consumers—especially children—to vary their diet and not rely solely on apple juice or other single-source beverages. Diversifying fluid intake with water and other safe beverages helps mitigate potential risks."

As for an individual apple, "I wouldn't worry too much," says Kimberly Garrett, an environmental toxicologist and a postdoctoral research associate working at Northeastern's PFAS Project lab.

"Juices can be made from the concentration of a lot of apples which also concentrates any persistent contaminants," Garrett says. "Fresh apples are a healthy snack, so I wouldn't dissuade anyone from enjoying a few."

What is arsenic and where does it come from?

Arsenic is a heavy metal that occurs naturally in the earth's crust, usually in organic forms, but also has been processed and used in various forms in industries including metal manufacturing, chemical manufacturing and agriculture.

Garrett notes that both inorganic and organic arsenic are hazardous to human health, but inorganic arsenic—"the form used in famous murder mysteries"—is generally regarded as "more acutely toxic."

Detwiler elaborates.

"Long-term exposure to inorganic arsenic is linked to various health

problems, including [skin lesions](#), [cardiovascular disease](#), and an increased risk of cancers, such as skin, bladder, and lung cancer," he says. "In children, prolonged exposure can lead to developmental effects, cognitive impairment, and potential hormonal disruptions."

Moreover, the risk is cumulative—meaning the [health impacts](#) are more likely if arsenic intake is consistent over a long period, Detwiler notes.

How much inorganic arsenic is allowed in apple juice?

The US Food and Drug Administration limit for [inorganic arsenic](#) in apple juice is 10 parts per billion—meaning that each liter of apple juice can contain no more than 10 micrograms of the toxin. The same standards apply to products that contain apple juice, like fruit blends or mixed fruit drinks, Detwiler notes.

The apple juice recalled by Walmart exceeded this standard, and the FDA gave the recall a more urgent classification, saying the affected product may temporarily cause adverse health consequences, but is unlikely to cause serious or irreversible medical issues.

The recall applies to 9,535 cases of Great Value brand apple juice. But just as arsenic is cumulative in the body, it persists in the environment.

"It is unfortunately fairly common in the environment due to its historical industrial use and environmental persistence," Garrett says. "It can be difficult to remove from soil and it doesn't go away on its own; even if arsenic-containing pesticides have not been applied to cropland recently."

How does arsenic end up in fruit?

Although different plants react to arsenic differently, apple trees pull it from the soil and it ends up in the fruit, Garrett says.

"We've consistently seen recalls due to arsenic in the fruit itself," Garrett says. "It's unfortunate that this keeps happening, and it's why the FDA has recommended action limits for arsenic in apple products specifically."

Detwiler says several factors can also contribute to arsenic getting from the ground to the store shelves. These include gaps in testing or inspections, inconsistent testing standards and procedures, international suppliers who source apples from countries with different agricultural practices and varying [regulatory standards](#) for pesticide use and environmental protection, and a lack of leadership in the [food industry](#).

"Ensuring [food safety](#) is not just about reacting to current concerns but about proactively safeguarding the public's health through science-based policies, continuous monitoring, and effective communication," Detwiler says.

"It's vital to create a food safety culture that prioritizes transparency, where companies and regulators work together to prevent contamination and mitigate risk. This means investing in research to understand the pathways of contaminants like arsenic, implementing rigorous quality control measures and keeping consumers informed."

Provided by Northeastern University

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