

Frequently Asked Questions: Heavy Metals in Spices

Are spices safe for consumers?

There is a consensus among global regulators that spices are safe for human consumption. While spices are an integral part of most people's diet, they are consumed in small amounts as ingredients in food and do not account for a large portion of each person's daily food intake, especially when compared to other food groups. In fact, the average American eats a fraction of a gram of spices per day amounting to only 0.01 percent of a person's total diet. As such, contributions by spices to heavy metal exposure, if any, would be very minor compared to consumption of other foods. Assessments which evaluate the presence of metals in spices and account for typical consumer exposure demonstrate that consuming spices is safe.

How do U.S. regulatory authorities address heavy metals in spices?

The Food and Drug Administration (FDA) has established a testing protocol and monitoring program for heavy metals, or "elements," in all foods, which includes screening imports to ensure food products entering the United States are safe. Additionally, FDA requires manufacturers to address toxic elements, such as heavy metals, in compliance with the Food Safety Modernization Act. FDA develops guidance levels for toxic elements in products determined to be the most significant for public health, but has not identified levels of concern for spices. Additionally, the FDA has not included spices as part of the agency's Closer to Zero initiative, which identifies actions the agency will take as it seeks to reduce exposure to toxic elements from foods eaten by babies and young children.

Why is ensuring the availability of spices so important to consumers?

While spices play an essential role in adding flavor to different cuisine types, importantly, they also have health benefits. The Dietary Guidelines for Americans highlight that "spices and herbs can help flavor foods when reducing added sugar, saturated fat, and sodium, and they also can add to the enjoyment of nutrient-dense foods, dishes, and meals that reflect specific cultures." Additionally, there is a growing body of research on the potential for certain spices to improve health. For example, there is interest in the impact of spice consumption on improving cardiovascular and metabolic health, providing antioxidants, and supporting the gut microbiome.

Why are trace amounts of heavy metals found in spices?

As with any food product, the concentration of heavy metals in spices naturally varies due to where and how spices are grown, environmental factors, soil conditions, and harvesting and processing methods. Spices come from dozens of crops grown in many different countries around the world. Heavy metals are naturally occurring elements in the Earth's crust, so any natural product that comes into contact with soil or groundwater has the potential to take up trace amounts of heavy metals that cannot be removed.



