

## Arsenic in Rice and Rice Cereal: What You Need to Know



*Seven Things Pregnant Women and Parents Need to Know About Arsenic in Rice and Rice Cereal*

**You may be surprised to learn that there is arsenic in rice.**

In fact, rice is not the only food or beverage that contains arsenic. It's also found in vegetables, fruits, and many other foods. The U.S. Food and Drug Administration (FDA) has been monitoring the presence of arsenic in food as part of its ongoing oversight of the safety of the food supply. And now we've looked at arsenic in infant rice cereal.

### 1. How does arsenic get in your food?

Arsenic is an element in the Earth's crust and is present in very small amounts in water, soil and air. Crops absorb arsenic as they grow. That's how it gets into foods and beverages — it's not an additive or ingredient — and it cannot be completely eliminated.

There are two forms of arsenic, organic and inorganic, with inorganic being the more toxic. The term "organic" in this case has nothing to do with types of farming. It's about chemical elements. If arsenic atoms bond with carbon, the compound is organic. If there's no carbon present, it's inorganic.

### 2. What about arsenic in rice?

Rice is a staple of the global diet, and is also a leading dietary source of inorganic arsenic, both because of how commonly it's consumed and because as rice plants grow, the plant and grain tend to absorb arsenic more readily than other food crops.

That, in part, is what led us to look more closely at arsenic in rice. In 2013, FDA released test data for the levels of inorganic arsenic in most types of rice grain and rice-based foods and beverages consumed in the United States. The agency tested about 1,300 samples of rice and rice products in all.

That testing was expanded on infant rice cereal because, relative to body weight, infants consume about three times more rice than adults, primarily through infant rice cereal. In fact, data show that people consume the most rice, relative to their weight, at 8 months of age primarily because rice cereal is commonly the centerpiece of an infant's diet.

### 3. What are the potential health effects?

It has long been known that arsenic is a carcinogen. However, more recently, concerns have been raised about potential developmental effects on infants and adverse pregnancy outcomes.

In addition to extensive testing, FDA has completed a thorough analysis of a growing body of scientific studies linking adverse pregnancy outcomes to intake of relatively high levels of inorganic arsenic during pregnancy. The agency also found that exposure may result in a child's decreased performance on certain developmental tests that measure learning.

Related to cancer, FDA estimated that exposure to inorganic arsenic in rice and rice products causes an additional four cases of lung and bladder cancer over the lifetime for every 100,000 people in the United States. This estimate would account for far less than 1 percent of the nation's lung and bladder cancer cases.

## 4. What is FDA doing in light of its findings?

FDA has issued draft guidance to industry proposing a limit, or “action level,” of 100 parts per billion for inorganic arsenic in infant rice cereal. (Of note, the European Commission recently established a parallel level for rice intended for the production of food for infants and young children.) FDA testing found that the majority of infant rice cereal currently on the market either meets, or is close to, the proposed action level.

What FDA is asking food manufacturers to do will reduce the exposure for infants and, based on our testing, the agency believes this is feasible for the companies. FDA tested 76 samples of infant rice cereals on the market and found that nearly half of them — 47 percent — already meet the proposed limit. Moreover, most of the samples tested — 78 percent — were either at or below 110 parts per billion.

This is not the first time the federal government has limited arsenic in foods or beverages. The Environmental Protection Agency has set a limit for inorganic arsenic in drinking water, and FDA has already set action levels, or recommended limits, for bottled water and apple juice.

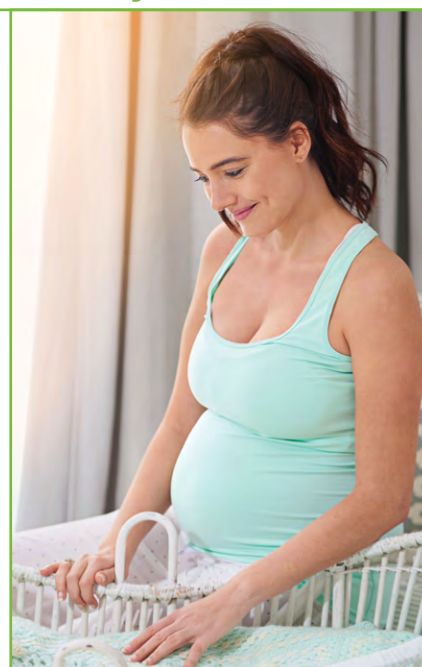
## 5. If you have an infant or are pregnant, what should you do?

Based on the FDA’s findings with respect to inorganic arsenic in rice, the agency offers the following advice to parents and caregivers of infants. It is consistent with advice given by the American Academy of Pediatrics.

- Feed your baby iron-fortified cereals to be sure she or he is receiving enough of this important nutrient.
- Rice cereal fortified with iron is a good source of nutrients for your baby, but it shouldn’t be the only source, and does not need to be the first source. Other fortified infant cereals include oat, barley and multigrain.
- For toddlers, provide a well-balanced diet, which includes a variety of grains.

Also based on the FDA’s findings, it would be prudent for pregnant women to consume a variety of foods, including varied grains (such as wheat, oats, and barley), for good nutrition.

Published studies, including new research by the FDA, indicate that cooking rice in excess water (from six to 10 parts water to one part rice), and draining the excess water, can reduce from 40 to 60 percent of the inorganic arsenic content, depending on the type of rice — although this method may also remove some key nutrients.



## 6. If you’re an adult, what should you do?

The FDA did not find a scientific or public health basis to recommend that the general population of consumers change its rice consumption based on the presence of arsenic.

But the agency’s general advice about eating a well-balanced diet that’s not based on any one food extends to all consumers, including toddlers, older children and adults. Eating a variety of foods is more nutritious and if there are substances in food (like arsenic) where reducing exposure is prudent, you’re minimizing that exposure.

## 7. Is it ok for me to eat rice and give it to my children?

Consumers can certainly eat rice as part of a well-balanced diet. Based on our scientific assessment, we think it would be prudent for parents and caregivers to feed their infants a variety of fortified infant cereals, rather than to rely solely on infant rice cereal. We also encourage pregnant women to eat a variety of foods, including varied grains.