



Arsenic in Rice

What you need to know

Rice has always been a gluten-free staple. It's easy to find, familiar, cheap, and even Aunt Gertrude can figure out how to make it for you safely. Studies show that by far, rice is the most frequently consumed grain on a gluten-free diet. Because it's hypoallergenic and has a neutral flavor, many gluten-free products rely on rice as a primary ingredient, and most of the gluten-free flour blends on the market are rice-based. However, there are growing concerns about the quantity of arsenic that rice contains and its impact on health – especially for the gluten-free population.

The Problem with Arsenic

Arsenic naturally occurs in soil. Some areas contain more arsenic than others. The problematic arsenic in question recently is a kind called inorganic arsenic, which was an ingredient in pesticides and fertilizers used in agriculture for almost a century until the US banned it in the 1980s. However, inorganic arsenic residues remain in the soil, and it may also still be used in other countries.

At low doses, inorganic arsenic is a carcinogen linked to higher rates of skin, lung, and bladder cancer, type 2 diabetes, and heart disease. Even frequent, small amounts of arsenic seem to be a problem, as they can lead to impaired memory, fatigue, learning difficulties, or gastrointestinal distress. Obviously, that's bad news. Young children and babies in utero are most at risk. While there are no federal standards or regulations in the US for arsenic in food, there are regulations for the arsenic levels in water.

In the past few years, researchers have investigated high levels of arsenic in juice. Most recently the focus has turned to rice. Since rice is grown submerged under water, it easily absorbs arsenic from the soil and water. So if rice is grown in an area where there was a history of extensive pesticide use, the arsenic content may be very high.

Arsenic for the Gluten-Free Community

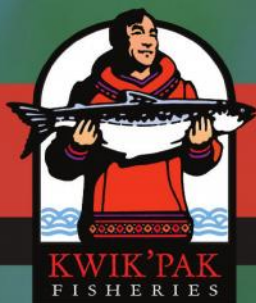
Arsenic in rice is a big deal for the gluten-free community. As a whole, we eat a whole lotta rice. If you have rice milk with breakfast, gluten-free toast with rice flour for lunch, and brown rice pasta with dinner, it adds up quickly. Consumer Reports (CR) first got the word out broadly in 2012. The January 2015 issue examined arsenic in rice, and particularly how it affects people who are gluten-free.

BOTTOM LINE: There's definitely enough arsenic in rice to potentially be a problem, but before you pitch your rice, there's a lot we can all do to cut down on the risk and keep rice a balanced option.

In terms of cooked rice, the varieties with the highest levels of arsenic include:

- ✘ Brown rice
- ✘ Rice from Arkansas, Louisiana, or Texas
- ✘ Labeled as "Grown in the US" (not labeled as from California)

This makes sense, because arsenic-based pesticides were sprayed on cotton fields in the Midwest for years. Arsenic also accumulates in the outer layers of rice, which is why brown rice has higher levels.

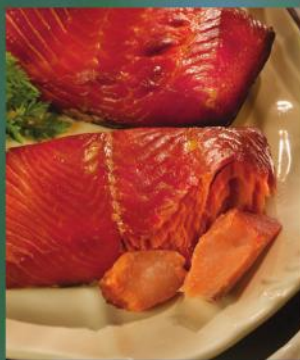


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The lowest levels (safest) are found in:

- ✓ White basmati rice from California, India, and Pakistan
- ✓ Sushi rice from the US
- ✓ Other grains, such as amaranth, buckwheat, millet, and corn

Of course, when we pick up a package of crackers or a loaf of gluten-free bread, we rarely have good info on where the rice was grown. Certain products tested extremely high in arsenic, especially:

- ✗ Hot rice cereal
- ✗ Rice pasta
- ✗ Rice cakes
- ✗ Rice cereals

According to CR, “children should rarely eat hot rice cereal or rice pasta ... just one serving of either could put kids over the maximum amount of rice they should have in a week.” Yowza. One serving of rice cakes is just under the weekly recommended maximum as well, and they recommend avoiding rice milk for young children. Another big red flag is brown rice syrup in infant formula. A 2012 Dartmouth study showed that some formulas contain levels of arsenic from brown rice syrup that can harm an infant or young child.

Because adults are naturally bigger and heavier than children, we can consume a little more arsenic without a problem. Still, the CR recommendation is less than 4.5 servings of rice per week for adults and 2.5 servings a week for children.

Tricia Thompson, MS, RD is a pioneering gluten-free researcher. She’s been testing products for gluten contamination for years and more recently started testing foods for arsenic, too. She says, “At Gluten Free Watchdog we have just started testing rice-based gluten-free foods for arsenic. Breakfast cereals were the first products tested.” The first batch of testing included Rice Chex® and a variety of the other usual suspects. Results for rice-based pastas, bread products, flours, mixes, and the like will be posted during the summer of 2015. Thus far, the results have been a mixed bag, with some items testing above the proposed maximum levels under consideration by Codex and the European Union. Members of Gluten Free Watchdog (glutenfreewatchdog.com) can access more detailed info on the results for each of those products.

Unfortunately, at this point in time, the FDA is taking a “wait and see” approach and promised to do more research. But what’s a gluten-free consumer to do in the meantime?

- ✓ Vary your grains. Swap rice for some amaranth, buckwheat, millet, quinoa, or corn.
- ✓ Choose rice sourced from California, India, and Pakistan.
- ✓ Vary your starches. Try sweet potatoes, quinoa pasta,

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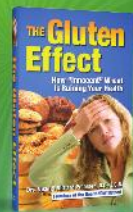
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- ✓ spaghetti squash, beans, and other vegetables.
- ✓ Rinse your rice before cooking. Some of the arsenic can be filtered out.
- ✓ Switch from rice milk to almond, hemp, hazelnut, or flax milk.
- ✓ Include some grain-free or rice-free products.
- ✓ Try a baking blend without rice flour or experiment with almond or coconut flours. Personally, I've found that sorghum flour is a good substitute for brown rice flour.
- ✓ Contact companies of rice-based products and ask questions about arsenic. The more interest we demonstrate, the more likely companies will intentionally use low arsenic sources of rice.

Although many people choose organic foods to avoid pesticides, since arsenic is in the soil, unfortunately organic doesn't offer any protection against arsenic.

Thompson says, "Knowledge is power and there is knowledge in data – testing data. Consumers can use test results (both for gluten and arsenic levels) to help make food choices. Many consumers may not realize that the FDA does not require manufacturers to test their labeled gluten-free foods for gluten contamination. Support from the gluten-free community will allow us to continue testing foods for both gluten and arsenic. Because we do not take sponsorship money

from manufacturers, Gluten Free Watchdog is a true independent voice for the gluten-free consumer."

My two cents: *If you're concerned about arsenic in the foods your family is eating, consider joining Gluten Free Watchdog to get updated information on common gluten-free products. Consider how much rice you and your family are consuming, and start branching out to other alternatives. Also, keep an eye on groups like Consumer Reports that are pushing the FDA to take action.* [SGF](#)

References:

"FAQ Responses Regarding Arsenic in Food Containing Brown Rice Syrup." dartmouth.edu/~toxmetal/assets/pdf/arsenicinfoodfaq.pdf

As always, consult a medical professional before beginning any new protocol.



ABOUT THE AUTHOR:

Cheryl Harris is an award-winning Registered Dietitian, Nutritionist, and Certified Wellness Coach helping clients learn to live and love a gluten-free lifestyle. She is a contributor to the Washingtonian and Today's Dietitian and has presented for the FDA, USDA, and many others. Find Cheryl at harriswholehealth.com and gfgoodness.com.

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