

THE REAL STORY:

THE FACTS ABOUT U.S.-GROWN RICE AND ARSENIC

THINK
RICE

U.S.-GROWN

The USA Rice Federation wants to provide you with evidence-based answers for the hard questions you might have about rice and arsenic. The U.S. Rice Industry is committed to producing a wholesome and nutritious product and wants you to enjoy and feel comfortable consuming U.S.-grown rice.

LET'S ANSWER YOUR QUESTIONS

"What is arsenic?"

arsenic (noun): natural element found in air, water, soil, and as a result, food and water.

There are two forms of arsenic – inorganic and organic. Both forms occur naturally in food. Organic, which presents almost no human health threat, and inorganic, which can pose health threats if consumed at high levels. Organic and inorganic arsenic refer to its chemical characteristics and should not be confused with how organic food is marketed.

"What foods contain arsenic?"

Arsenic is naturally found in fruits, vegetables, fish and grains. There are trace amounts of arsenic in most foods as all plants, even those grown organically, take up arsenic from the soil they are grown in.¹⁻³ Arsenic can also be found in contaminated water.¹⁻³ The FDA and EPA closely monitor the arsenic content of our food and water supply.

"What happens when I eat or drink something that has arsenic in it? Is there a difference in arsenic exposure from food or from water?"

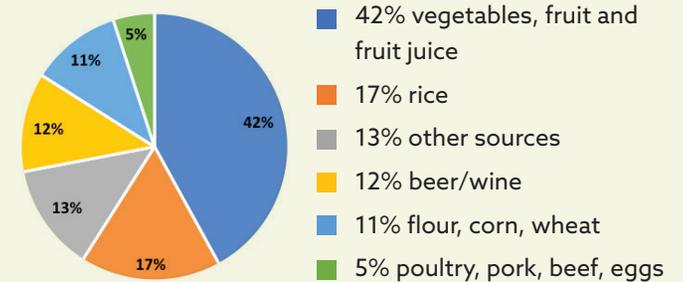
The human body is designed to efficiently remove impurities and contaminants from the environment it is exposed to. When you ingest arsenic from food it will be processed by the body and most will be removed in your urine. Inorganic and organic arsenic are typically removed within a few days. However, arsenic in water is absorbed more completely by the body, which is why there are different maximum safety limits set for food and water.

"I have heard rice contains arsenic. Is it safe to consume?"

Yes, rice is safe to consume! All varieties of U.S.-grown rice, including brown rice, and products made with U.S.-grown rice, such as rice cereal, meet established international health standards for arsenic.

The U.S. rice industry is committed to producing a wholesome product. In a study completed by the World Health Organization, U.S.-grown rice contained the lowest levels of inorganic arsenic compared to the other countries studied.⁵ **As a nutrient rich, whole grain, rice is an important part of a varied, well balanced diet.**

COMMON DIETARY SOURCES OF INORGANIC ARSENIC*



"Rice is not only safe to consume, it is recommended as one way to meet the grain recommendation. If consumers were to avoid foods because they contain natural arsenic they would have to avoid fruits, vegetables and beer as they provide over half the dietary arsenic and grains which provide another 30%. In fact, the FDA has stated that there is no reason to change your consumption unless you are one of the many who are not eating enough of the recommended amounts of fruit, vegetables and whole grains."- Julie Miller Jones, PhD, CNS, CFS





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"Should I limit how much rice I eat because it has arsenic?"

Research shows that people who consume larger amounts of rice are linked to having a healthier diet overall and one that is more in line with Dietary Guidelines for Americans. Data from the National Health and Nutrition Examination Survey 2007-2008 found no increased risk for heart disease or cancer due to rice consumption.⁶ New research from Tufts University, even links low consumption of whole grains to higher risk of preventable cancer.⁷

"Does infant rice cereal have a high amount of arsenic? Should I avoid feeding it to my baby?"

The FDA and American Academy of Pediatrics recommend feeding your baby a variety of foods, including rice cereal.² U.S. grown rice and infant rice cereal, made with U.S.-grown rice, meets the FDA and international regulations for arsenic.

"As with dietary advice for adults, variety has lots of advantages. Consider serving your baby different cereals to not only introduce an array of taste experiences and textures, but also to get the various vitamins, minerals proteins and dietary fiber that each individual cereal has to offer." - Julie Miller Jones, PhD, CNS, CFS

"As a whole grain, U.S.-grown rice provides fiber as well as important vitamins and minerals. Including rice in your diet provides energy and helps you meet nutrient recommendations." Joanne Slavin, PhD, RDN



How are arsenic levels measured?

The arsenic levels in food, like rice, are measured in parts per billion. One part per billion is a single square of toilet paper in a roll that stretches from New York City to London. U.S.-grown rice has always tested below international safety standards for arsenic. *The USA Rice Federation works closely with the FDA, as well as U.S. rice farmers, to ensure rice products sold in the U.S. meet safety standards.*

BOTTOM LINE

Arsenic is naturally found in all plants and virtually everything that grows in the ground. It is present in all fruits, vegetables, breast milk and seafood.¹⁻³ Eliminating sources of arsenic from your diet will only result in nutrition deficiencies. The U.S. Rice industry is dedicated to producing delicious rice that meets international safety standards and those set by the FDA.

"The bottom line is rice is a high-quality carbohydrate and a healthy component of a well-balanced diet. Arsenic occurs in a wide range of healthy foods, fruits, vegetables and rice. Dietary recommendation support more of these plant-based foods to improve health and prevent chronic diseases." Joanne Slavin, PhD

References:

- ¹ Marcason, W. What are the current findings concerning arsenic in foods? *J Acad Nutr Diet.* 2015; 115(6): 1028
- ² Center for Food Safety and Applied Nutrition. Metals - Arsenic in Food and Dietary Supplements. March 2019. <https://www.fda.gov/Food/FoodborneIllnessContaminants/Metals/ucm280202.htm>. Accessed April 2, 2019
- ³ Agency for Toxic Substances and Disease Registry at the Centers for Disease Control and Prevention. Division of Toxicology and Environmental Medicine. Toxic Substances Portal - Arsenic. August 2007. <http://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=19&tid=3>. Accessed April 2, 2019
- ⁴ Xue J, Zartarian V, Wang SW, Liu SV, Gerogopoulos, P. Probabilistic Modeling of Dietary Arsenic Exposure and Dose and Evaluation with 2003-2004 NHANES Data. *Environ Health Perspect.* 2010; 118(3):345-50.

- ⁵ Joint Food and Agriculture Organization of the United Nations/World Health Organization Food Standards Programme Codex Committee on Contaminants in Food. Discussion Paper on Arsenic in Rice. 2011. ftp://ftp.fao.org/codex/meetings/cccf/cccf5/cf05_10e.pdf. Accessed April 2, 2019.
- ⁶ Kennedy, E and Luo, H. Association between rice consumption and selected indicators of dietary and nutritional status using National Health and Nutrition Examination Survey 2007-2008. *Ecol Food Nutr.* 2015;54(3):224-39.
- ⁷ Zhang FF, Cudhea F, Shan Z, Michaud D, Imamura F, Eom H, Ruan M, Rehm C, Liu J, Du M, Kim D, Lizewski L, Wilde P, Mozaffarian D. Preventable cancer burden associated with poor diet in the united states. *JNCI Cancer Spectr.* 2019.