



Our Toxic World—Making RICE Less Toxic!!



Dr. Kate Thomsen and Silky

Who doesn't like rice? Cheap and plentiful, it is a staple in many cuisines and blends well into all kinds of dishes. This article is hoping to make you a wise and healthy rice consumer (if you choose to continue eating rice at all!! Yes it's that alarming!)

Rice is a grain that should contain many micronutrients. If eaten daily, small amounts of iron, zinc, manganese, and B vitamins can contribute to a healthy diet. Currently rice is suffering from micronutrient deficiency due to the modern farming practices of imbalanced fertilizers and continuous rice-wheat planting.
Strike #1.

Brown rice is only hulled of the outer husk and still contains the bran and germ – and consequently most of the nutrition. White rice has the bran and germ removed and then is polished or further processed into flour or heated and puffed. Because 75 - 90% of the natural nutrients are lost, white rice is often "enriched" by spraying on vitamins and minerals which are easily washed off in pre-rinsing or cooking.
Strike #2.

Rice grows in wet lowlands or flooded fields where minerals and nutrients in the ground are liberated into the

water and absorbed by the growing rice plant. 80% of rice grown in the US comes from the central southern states (Arkansas, Louisiana, Texas, Mississippi and Missouri) where 30,000 tons of arsenic were dumped into cotton fields in an effort to fight boll weevils. Arsenic laden pesticides were banned 30 years ago but they persist in the soils. This is inorganic arsenic (the most toxic form) and rice accumulates 10 times more of this than other grains. Rice grown organically takes up inorganic arsenic the same way.
Strike #3.

Too much arsenic will affect the poor rice plant and growers have developed arsenic resistant rice strains so that crop yields remain high — it just means your body will be exposed to more arsenic!!!
Strike #4.

Googling facts about rice will often bring you to rice growing industry sites (eg, Arsenicfacts.com) that will refute that rice is poisonous because "arsenic is a natural compound in the soil and all foods probably contain arsenic".
(Too many strikes to continue counting.)

You have to read the scientific papers to see through this hocus-pocus. There is also small amounts of organic arsenic (less toxic) in rice.

Arsenic is a "non-threshold Class 1 carcinogen". Non-threshold means that there is no "safe" level of exposure. Class 1 carcinogens also include asbestos and cigarette smoke. The current federal drinking water standard for arsenic is 10ppb. It was lowered from 50ppb in 2001. (BTW, New Jersey has the lowest drinking water standard for arse-

nic in the US at 5ppb!! Go to nj.gov/dep and search arsenic to find if your location is affected by high levels of naturally occurring arsenic.) These standards are based on amounts that would produce excess cancer deaths over 1 in a million. Previously it was thought to be water but currently food (rice) is our main source of inorganic arsenic exposure and yet no standards have been set that limit the amount of arsenic allowable in foods. A serving of rice has ~ 100ppb of inorganic arsenic!

Inorganic arsenic does not get stored in your body like mercury. It is eliminated within days but frequent passes through your body are opportunities for cell damage. Health conditions associated with exposure to inorganic arsenic include diabetes, cardiovascular disease including high blood pressure, impaired immune function, and cancers of the lung, liver, bladder, kidney and skin. Prenatal exposure increases the risk of pre-term and low birth weight infants. It can be neurotoxic in small children and increase susceptibility to infections. Symptoms of chronic arsenic exposure include: recurring diarrhea, headache, insomnia, loss of appetite, abnormal taste, impaired short term memory and concentration, thickening or discoloration of the skin, small corns or warts on the palms, soles and torso, nausea, abnormal heart rhythms, numbness in the hands and feet and partial paralysis.

Exposure to inorganic arsenic from rice includes rice products: infant rice cereal, rice milk, rice cakes, rice pasta, Rice Krispies, and brown rice syrup (often used

in "healthy" cereal bars, energy bars and shots...)

Arsenic in seafood is mainly organic arsenic – so far thought to be harmless (well at least not as toxic as inorganic arsenic). Hijiki seaweed (another prior health food favorite) however is a hundred times more contaminated with inorganic arsenic than rice!!

So Why Eat Rice?

- The nutrient content is low and will be lower if you prepare it in a way to lower the arsenic

- You can't completely eliminate the arsenic
- There are other grains to eat that aren't toxic!!

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If You Insist on Eating Rice

Limit Exposure:

- pregnant women should reduce or eliminate their rice exposure; arsenic crosses the placenta.
- babies should eat other grains like oat and barley and have infant rice cereal no more than 2 servings per week (max of 1 serving per day)
- Consumer Reports recommends no more than 2 servings (1/2 cup) of rice per week for adults.

Buy Low Arsenic Rice:

- brown basmati from California, India, or Pakistan

Cooking Methods to Reduce Arsenic Content

- Do not use rice cookers – the arsenic is not dumped out but preserved in this low water method
- Parboil and Dump. An August 2020 paper in Science Direct studied different cooking methods of both brown and white rice: unwashed, washed, pre-soaked and parboiled. The parboiled method removed 54% of inorganic arsenic from brown rice and 73% or inorganic arsenic from white rice.
 - o Start by cooking the rice in twice as much water as usual – 4:1 (1/2 cup rice to 2 cups water)
 - o Boil for 5 minutes
 - o Throw the water out
 - o Begin again with the normal cooking ratio – 2:1 (1/2 cup rice to 1 cup water) and simmer until done (usually 20 - 30 minutes)
- Cook rice like pasta: 1/2 cup rice to 5 cups water (very dilute) and dump water when done



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"Modern medicine, for all its advances, knows less than 10 percent of what your body knows instinctively." —Deepak Chopra