

HEALTHY KIDS METALS INFORMATION

Metals

Healthy Kids Minnesota measured twelve metals in children's urine. Metals are naturally found in the environment and get into food, air, and water. Some metals are essential nutrients at low levels. They are also used in industry and farming and can be found in some products we purchase including foods.

If children are exposed to higher levels of some metals, it may harm their health. Some possible health effects include learning and behavior problems, allergic reactions, damage to the lungs, heart and kidneys, and an increase in cancer risk as an adult. However, finding chemicals in a child's urine is normal and does not mean their health will be affected. For most chemicals, scientists are still learning what levels may be unsafe.

Important Note Regarding Lead

Exposure to lead has many harmful health effects for children. Testing urine is not a good way to check for lead exposure so it is not one of the metals included in Healthy Kids Minnesota 2021. **If you are concerned about lead exposure, speak to your child's health care provider or local clinic.**



IMPORTANT GENERAL INFORMATION



Drinking water

Drinking water from private wells is a common way children are exposed to metals. It is important to have your well tested. If unsafe levels of arsenic or manganese are found, installing a water treatment unit or finding a different source for drinking water can reduce exposure. Go to our web page for resources.

The Minnesota Department of Health regularly tests public drinking water to make sure it meets Safe Drinking Water Act standards.



House dust contains metals and other types of chemicals

Cleaning floors and surfaces in your home and keeping dust from building up helps to reduce metals exposure. And, just like handwashing reduces germs, it also washes away chemicals that might be in dust.



Are you bringing metals home from work?

Some types of jobs involve metals such as welding, metal smelting, soldering, plating, and battery manufacturing. Metal dust that is too small to see can attach to your clothing, shoes, skin, and hair while you are working, you can take this dust home with you. This "take-home" exposure can impact young children.

If your work or hobby involves metals, follow safe practices, and take precautions to avoid bringing dust home by showering and changing clothes and shoes right after you are done with work.



Metals are in cigarette smoke

When tobacco plants grow, they take up more metals from the soil than other plants. This makes smoking cigarettes a common way people are exposed to metals. Secondhand smoke can also expose your child to metals. If you do smoke, smoke outside of the home or car and away from your child. For assistance with quitting smoking, you can speak to your doctor or get free help your way with Quit Partner. Call 1-800-QUIT-NOW (784-8669) or visit www.quitpartnermn.com.



Living near industries and businesses that release metals to air or soil

While this exposure is less common, some children who live near certain industrial facilities or contaminated sites may be exposed to metals. To find out if you live near these sites or industries, go to our web page for resources.



Inexpensive metal jewelry

Sometimes inexpensive or costume jewelry can contain these types of metals. If a child chews, sucks on, or ingests the jewelry it can cause high levels of exposure.

We know a lot about how children are exposed and how to limit exposures to three of the metals we tested: arsenic, manganese, and mercury.

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As

ARSENIC

Arsenic

Arsenic occurs naturally in rocks and soil. Some arsenic in the environment is from human activities and was an ingredient in pesticides and wood preservatives.

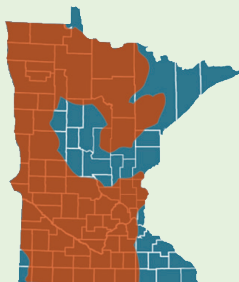
What are common ways kids are exposed?

Food: Arsenic is in certain foods, including:

- Rice and rice-based ingredients, such as some cereals and some infant formulas
- Fruit juices

Drinking Water: About 40% of private wells in Minnesota have arsenic. Arsenic levels tend to be higher in groundwater used for drinking in the areas of the Minnesota map shown in brown. You cannot see, taste, or smell arsenic in drinking water.

Wood Structures: Some older outdoor wood structures like decks or play equipment may contain arsenic if they are not cedar or redwood. Children can be exposed by playing around these wood structures.



What are ways to lower my child's exposure?

Rice is the main source of arsenic in food. If your child eats rice multiple times per week:

- Try serving other grains in place of rice such as wheat, quinoa, corn, oats.
- Offer a variety of rice types and rinse rice well before cooking or cook in extra water.
- Limit consumption of rice-based products.

Limit the amount of juice your child drinks.

Have your private well tested. If arsenic is detected, consider confirming the results with another test and installing a treatment unit or using a different drinking water source.

Have your children wash their hands after playing on wooden structures treated before 2004, and do not burn this wood.

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Mn

MANGANESE

Manganese

Manganese occurs naturally in water, rocks, soil, food, and air. Your body needs some manganese to stay healthy, but too much can be harmful.

What are common ways kids are exposed?

Food: Children get enough manganese to meet nutritional needs from their regular diet – foods like whole grains, nuts, and leafy vegetables. Manganese from the diet is not a health concern.

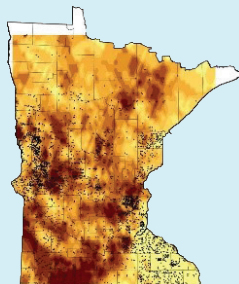
Drinking Water: Manganese occurs naturally in groundwater across Minnesota. About 50% of private wells in Minnesota are estimated to have a manganese level higher than what is safe for an infant to drink. The darker the shade on the map, the more likely it is that private wells in the area have a higher level of manganese.

Jobs and Hobbies: Adults who have certain jobs or hobbies like welding or working in a factory where steel is made may be exposed to high levels of manganese. They can bring the manganese home on clothes or other surfaces, and children can be exposed.

What are ways to lower my child's exposure?

Have your private well tested. If an unsafe level of manganese is detected consider confirming the results with another test and installing a treatment unit or using a different drinking water source.

If you work with metals, follow safe working practices and avoid bringing dust home.





Mercury

Mercury is naturally found in water, food, and air. Mining and industrial sources release mercury into the environment. There are different forms of mercury. Urine tests do not measure all of them.

What are common ways kids are exposed?

Fish: Some types of fish have higher levels of mercury. Large, locally caught fish such as bass, walleye, and northern pike, tend to have the highest levels. Some store-bought fish including tuna do, too.

Products: Mercury used to be more common in some products (like thermometers) than it is now. Mercury is still common in fluorescent light bulbs. When these products break, mercury can get into air.

Skin Lightening: Some skin lightening or other facial products imported from outside the U.S. can contain high levels of mercury. Use of these products releases mercury into indoor air, potentially exposing children.



What are ways to lower my child's exposure?

Avoid using imported facial products for skin lightening, anti-aging, or acne unless you are certain they do not contain mercury. You can check the label but often mercury isn't listed. You can't see, taste, or smell the mercury.

Follow MDH's safe-eating guidelines to reduce mercury exposure from fish. **Note: Healthy Kids Minnesota urine mercury results don't tell us about your child's exposure to the type of mercury found in fish.**

If a glass mercury thermometer or fluorescent light bulb breaks, it must be cleaned up properly. Some ordinary cleanup measures, such as sweeping and vacuuming, can increase children's exposures.

OTHER METALS

The table lists the remaining metals we measured.

As described above, these metals can be found in:

- Air, soil, food, and water
- The workplace (metal smelting, processing, welding, grinding, plating, mining)
- Tobacco smoke
- Releases from industrial sources

Some metals have additional exposure sources that are listed in the table.

OTHER METALS	ADDITIONAL USES AND/OR EXPOSURE SOURCES
ANTIMONY	<ul style="list-style-type: none"> • Certain flame retardants for plastic and fabric • A plastic called "PET" used for food and drink containers (like water bottles and microwaveable or ovenproof plastic trays)
CADMIUM	<ul style="list-style-type: none"> • Shellfish or organ meats (liver, kidney) • Pigments and plastics • Costume jewelry
CHROMIUM	Dietary supplements <i>Note: Children get enough chromium to meet nutritional needs from their regular diet.</i>
COBALT	See general sources to the left
MOLYBDENUM	A flame retardant in polyester and plastics (such as PVC)
NICKEL	Costume jewelry
THALLIUM	See general sources to the left
TUNGSTEN	See general sources to the left
URANIUM	<ul style="list-style-type: none"> • Small amounts in rocks • Sometimes in ground water

SCAN THE CODE FOR MORE INFORMATION AND ADDITIONAL RESOURCES

