

What you should know about

Aluminum



What is aluminum?

Aluminum is the third most common element and the most abundant metal in the earth's crust. In its purified form it is non-magnetic, light-weight, durable, and a relatively soft metal. It ranges in color from a silvery-white to dull gray appearance, depending on the roughness of its surface. Aluminum is found in nearly all rocks and soils and is a component of many common gemstones, such as ruby, sapphire, garnet, emerald, topaz, and turquoise.

Aluminum and its various alloys (aluminum mixed with other metals) are used in a wide variety of applications. Aluminum is used to make a variety of products we use in our daily lives such as pots and pans, beverage cans, aluminum foil, automobile parts, airplanes, wire, home décor, and cooking utensils. Aluminum can also be found in products such as antacids, skin soaps, aspirin, food additives, cosmetics, and antiperspirants. No other metal has as many uses as aluminum.



What happens to aluminum in the environment?

Aluminum occurs naturally in air, water, and soil. The mining of aluminum ores and production of aluminum metal, alloys, and compounds can release additional aluminum into the surrounding environment. Aluminum in the air can bind to small particles and travel long distances before settling or being washed to the ground by rain.



Aluminum is also found naturally in surface water. However, the aluminum content in water could be increased by surface runoff carrying aluminum from the soil to the groundwater, lakes, and rivers. In this situation, higher concentrations of aluminum may occur, but are very unlikely to cause harm.

How might I be exposed to aluminum?

Aluminum is found in both natural and processed foods. Processed foods, such as cheeses, cakes, and cereals can contain higher levels because aluminum compounds are often added to these foods (e.g., baking powder, coloring agents, and anticaking agents) during processing. An average adult in the U.S. eats about 7–9 milligrams (mg) of aluminum per day in their food.



You may also be exposed to aluminum by taking medicines that contain aluminum, such as some antacid and aspirin products. If you take these medications with acidic drinks, such as tea, soft drinks, or fruit juices, you may increase the amount of aluminum you absorb from the medications. Aluminum is also commonly mixed with vaccines to increase their potency and to reduce side effects. Children and adults may be exposed to small amounts of aluminum from vaccinations.

How can aluminum affect my health?

Only a very small amount of aluminum from the food we eat and the water we drink actually enters the bloodstream. Most aluminum that enters your body quickly leaves in feces. Because only a trace amount of aluminum accumulates in the body, natural exposure to aluminum through food, water, and soil is usually not harmful.

Breathing normal levels of aluminum in the air is not generally a problem, but there are some risks associated to inhaling higher levels. Workers exposed to airborne dusts containing high levels of aluminum can have lung problems, such as coughing, asthma, difficulty breathing, and tightness in the chest. Some workers that



breathe excessive aluminum dusts or fumes have experienced seizures, tremors, memory loss, and a loss of coordination. If you have an occupation that involves breathing higher than normal levels of aluminum, proper protective equipment should be used.



Studies have shown that people with Alzheimer's disease tend to accumulate higher levels of aluminum in the brain. However, we cannot say for certain whether aluminum causes the Alzheimer's disease or whether aluminum tends to accumulate in the brain because of the disease process. Some people with kidney disease have been known to store a lot of aluminum in their bodies and sometimes develop bone or brain diseases related to the excess aluminum. Children with kidney problems may be more sensitive to aluminum.

Is there a medical test to determine if I have been exposed to aluminum?

There are medical tests available to check for aluminum in blood, urine, bones, or feces. Urine and blood tests can detect whether you have been exposed to excessive amounts of aluminum. Measuring aluminum in bone can indicate exposure to high levels, but this requires a bone biopsy and is not recommended. Measuring aluminum in feces is not useful because most of the ingested aluminum is eliminated in the feces and levels can vary widely with diet and medication history.

If you are concerned that you may have been exposed to excess aluminum we recommend you discuss it with your personal physician.

For more information, contact the:
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