

What is Iron?

Iron is a metallic substance that occurs naturally in rock and soils.

Environmental Sources and Uses

Iron is commonly found in many rocks and nearly all soils. It can be found in surface and ground waters through the refining of iron ores, corrosion of iron containing metals, and leaching of iron from soil and rocks. Iron is widely used in metallurgy, cookware and food supplements.

Iron and Health

Iron is a major component of hemoglobin, used to transport oxygen and carbon dioxide in the blood. Iron plays a vital role in oxygen utilization and energy requirements in cells.

It isn't easily absorbed by the body. The nutritional requirement varies with age and sex. To meet the actual daily requirement of 1 to 1.5 milligrams (mg) of absorbed iron, the National Academy of Science recommends a dietary allowance of 10 mg for adult males and 18 mg for females of reproductive age. For adults who suffer from iron deficiency, the usual therapeutic oral dose is 200 mg of iron per day. Foods high in iron are meat, eggs, nuts, legumes, cereal, pasta and bread.

Because of inefficient absorption of iron, people are generally well protected from an oral overdose. However, keep young children away from iron supplements to prevent iron toxicity. Ingestion of toxic levels can cause bloody vomit and stools and damage to the liver and kidneys.

Iron Bacteria

Iron bacteria can give a brownish color and a disagreeable taste or odor to the water. These bacteria flourish best under dark conditions and in waters containing dissolved iron and carbon dioxide. Some bacteria use iron as a source of energy while others incorporate iron into their cell structure. Small particles of oxidized iron and jelly-like masses of iron bacteria can clog pipes and water filters.

Drinking Water Standards

There is no health-based standard for iron levels in drinking water. The current recommendation of 0.3 part per million (ppm) is based on aesthetic effects such as taste. Water with high levels of iron can have a metallic taste or be discolored which can stain plumbing fixtures and discolor clothes when laundered.

Get it tested!

The only way to know the amount of iron in your household water is to have your water tested by a certified laboratory. Get a list of certified laboratories online at www.tpchd.org/certifiedlabs or look in the telephone directory under "Laboratories—Analytical".

Remove Iron from your Water

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| Distillation | The distillation process boils water and condenses the evaporated water into a separate container. |
| Chlorination | A chemical process to precipitate out the iron for filtration. |
| Ion exchange | Water passes through a sodium-containing resin which removes the iron. Ion exchange is the process used in home water softeners. |
| Reverse osmosis | Water is passed through a filtering "membrane" specifically made to remove iron. |

If you have additional questions or want more information about your responsibilities as a public water system manager, please contact Tacoma-Pierce County Health Department's Drinking Water Program at (253) 798-6470, option 2, or email us at EHDrinkingWater@tpchd.org