

Selenium Fact Sheet

Selenium is a naturally occurring element widely, but unevenly distributed in rocks and soils throughout the earth's crust. It is an essential nutrient for humans and other animals; small amounts of selenium are needed to stay healthy. It has been used as a human dietary supplement, as a feed additive for poultry and livestock, and as a fertilizer additive to enrich selenium-poor soils. Selenium is used in many industrial processes, such as the manufacturing of electronic semiconductors, as a decolorizer for ceramics and glass, and as a component of pigments in plastics, paints, enamels, inks, and rubber. It is also used in some medicated anti-dandruff shampoos and in some pesticides. Selenium is easily absorbed in the body following ingestion and by inhalation; it is not easily absorbed through the skin. The major source of selenium intake by the general population is from food, especially in areas with naturally high levels of selenium in the soil and from selenium-containing dietary supplements, and to a lesser extent from water.

Selenium is found in:

- Some foods, specifically seafood, meat, and grains. Very low levels are in many of the foods we eat.
 - o However, in some parts of the United States, especially in the western states, some soils naturally have higher levels of selenium and some plants can build up selenium to levels that harm livestock feeding on them. In these areas, people could be exposed to too much selenium, if they eat a lot of locally grown grains and vegetables or animal products that have built up high levels of selenium.
- Some drinking water sources, especially in areas known to have high levels of selenium in the rocks and soil.
- Certain dietary supplements.
- Anti-dandruff shampoos.
- The air, water, and soil around coal burning plants, hazardous waste sites, and industrial processes where selenium is produced, processed, or converted into consumer products, such as:
 - o Electronics.
 - o Glass.
 - o Rubber.
 - o Paints and inks.
- Some agricultural fertilizers, pesticides, and/or livestock feeds.

Possible health concerns from excessive exposure to selenium:

- Ingesting high-levels of selenium over many years (usually more than 2-5 years) can cause a disease called selenosis. The signs and symptoms of selenosis include:
 - o Hair loss.
 - o Nail brittleness.
 - o Discoloration and loss of teeth.
 - o Neurological abnormalities, including numbness or loss of feeling and control in the extremities.
- We do not know how common selenosis is among the general population of the state. Furthermore, we cannot determine with available data what level of exposure to selenium would cause this disease to develop.

Possible actions one can take to reduce excessive exposure to selenium:

- If you use dietary supplements or shampoos that contain selenium, make sure you use them according to the manufacturer's directions.
- Maintain a balanced diet for you and your children.
- If you work with selenium, take all precautions to avoid bringing selenium-containing dust home on your clothing, skin, hair, or tools.

For more information, visit: <http://www.atsdr.cdc.gov/toxfaqs/tfacts92.pdf> or <http://www.atsdr.cdc.gov/ToxProfiles/tp92.pdf> or <http://www.4csbc.org/pages/selenium.html>

For any other questions, please call 1-888-878-8992

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