

Manganese Fact Sheet for Consumers



Legumes are a rich source of manganese.

What is manganese and what does it do?

Manganese is a mineral that your body needs to stay healthy. Your body uses manganese to make energy and protect your cells from damage. Your body also needs manganese for strong bones, reproduction, blood clotting, and a healthy immune system.

How much manganese do I need?

The amount of manganese you need depends on your age and sex. Average daily recommended amounts are listed below in milligrams (mg).

Life Stage	Recommended Amount
Birth to 6 months	0.003 mg
Infants 7–12 months	0.6 mg
Children 1–3 years	1.2 mg
Children 4–8 years	1.5 mg
Boys 9–13 years	1.9 mg
Girls 9–13 years	1.6 mg
Teen boys 14–18 years	2.2 mg
Teen girls 14–18 years	1.6 mg
Adult men	2.3 mg
Adult women	1.8 mg
Pregnant teens and women	2.0 mg
Breastfeeding teens and women	2.6 mg

What foods provide manganese?

Many foods contain manganese. You can get recommended amounts of manganese by eating a variety of foods, including the following:

- Whole grains, such as brown rice, oatmeal, and whole-wheat bread
- Clams, oysters, and mussels
- Nuts, such as hazelnuts and pecans
- Legumes, such as soybeans and lentils
- Leafy vegetables, such as spinach and kale
- Some fruits, such as pineapple and blueberries
- Tea
- Many spices, such as black pepper

What kinds of manganese dietary supplements are available?

Manganese is available in many multivitamin/multimineral and other dietary supplements. Supplements contain many forms of manganese, such as manganese sulfate and manganese aspartate. Scientists don't know whether any form of manganese in supplements is better than any other form.

Am I getting enough manganese?

Most people in the United States get enough manganese from the foods they eat.

What happens if I don't get enough manganese?

Manganese deficiency is very rare in the United States. A deficiency might cause the following symptoms:

- Weak bones and poor growth in children
- Skin rashes and loss of hair color in men
- Mood changes and worse premenstrual pain than normal in women

What are some effects of manganese on health?

Scientists are studying manganese to understand how it affects health. Here are some examples of what this research has shown.

Bone health

You need manganese in combination with other minerals and vitamins for healthy bone formation. But more research is needed to understand the role of manganese in maintaining or improving bone health.

Diabetes

You need manganese to help break down the starches and sugars that you eat. But its effect on the risk of diabetes is unknown. More research is needed to understand whether manganese plays a role in the development of diabetes.

Can manganese be harmful?

Studies have not shown any harm from the manganese in food. But some people have developed manganese toxicity by consuming water containing very high levels of manganese. Another cause of manganese toxicity is inhaling large amounts of manganese dust from welding or mining work.

The symptoms of manganese toxicity include tremors, muscle spasms, hearing problems, mania, insomnia, depression, loss of appetite, headaches, irritability, weakness, and mood changes.

People should not consume more manganese than the upper limits from food, beverages, or dietary supplements unless their healthcare provider recommends doing this.

The daily upper limits for manganese are listed below.

Ages	Upper Limit
Birth to 6 months	Not established
Infants 7–12 months	Not established
Children 1–3 years	2 mg
Children 4–8 years	3 mg
Children 9–13 years	6 mg
Teens 14–18 years	9 mg
Adults	11 mg
Pregnant and breastfeeding teens	9 mg
Pregnant and breastfeeding adults	11 mg

Are there any interactions with manganese that I should know about?

Manganese is not known to interact or interfere with any medicines.

Tell your doctor, pharmacist, and other healthcare providers about any dietary supplements and prescription or over-the-counter medicines you take. They can tell you if the dietary supplements might interact with your medicines or if the medicines might interfere with how your body absorbs, uses, or breaks down nutrients, such as manganese.

Manganese and healthful eating

People should get most of their nutrients from food and beverages, according to the federal government's *Dietary Guidelines for Americans*. Foods contain vitamins, minerals, dietary fiber, and other substances that benefit health. In some cases, fortified foods and dietary supplements may provide nutrients that people otherwise might consume in less-than-recommended amounts. For more information about building a healthy diet, see the *Dietary Guidelines for Americans* and the U.S. Department of Agriculture's (USDA) MyPlate.

Where can I find out more about manganese?

For more information about manganese:

- Office of Dietary Supplements Health Professional Fact Sheet on Manganese

For more information on food sources of manganese:

- USDA, FoodData Central

For advice on buying dietary supplements:

- Office of Dietary Supplements, Frequently Asked Questions: Which brand(s) of dietary supplements should I purchase?

For information about building a healthy diet:

- MyPlate
- *Dietary Guidelines for Americans*

Disclaimer

This fact sheet by the Office of Dietary Supplements (ODS) provides information that should not take the place of medical advice. We encourage you to talk to your healthcare providers (doctor, registered dietitian, pharmacist, etc.) about your interest in, questions about, or use of dietary supplements and what may be best for your overall health. Any mention in this publication of a specific product or service, or recommendation from an organization or professional society, does not represent an endorsement by ODS of that product, service, or expert advice.



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