National Institutes of Health
Office of Dietary Supplements

Magnesium Fact Sheet for Consumers

Magnesium is found naturally in many foods, including legumes, nuts, seeds, whole grains, and green leafy vegetables.

What is magnesium and what does it do?

Magnesium is a nutrient that the body needs to stay healthy. Magnesium is important for many processes in the body, including regulating muscle and nerve function, blood sugar levels, and blood pressure and making protein, bone, and DNA.

The amount of magnesium 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	30 mg
Infants 7–12 months	75 mg
Children 1–3 years	80 mg
Children 4–8 years	130 mg
Children 9–13 years	240 mg
Teen boys 14–18 years	410 mg
Teen girls 14–18 years	360 mg
Men	400–420 mg
Women	310–320 mg
Pregnant teens	400 mg
Pregnant women	350–360 mg
Breastfeeding teens	360 mg
Breastfeeding women	310–320 mg

What foods provide magnesium?

Magnesium is found naturally in many foods and is added to some fortified foods. You can get recommended amounts of magnesium by eating a variety of foods, including the following:

- Legumes, nuts, seeds, whole grains, and green leafy vegetables (such as spinach)
- Fortified breakfast cereals and other fortified foods
- Milk, yogurt, and some other milk products

What kinds of magnesium dietary supplements are available?

Magnesium is available in multivitamin-mineral supplements and other dietary supplements. Forms of magnesium in dietary supplements that are more easily absorbed by the body are magnesium aspartate, magnesium citrate, magnesium lactate, and magnesium chloride.

Magnesium is also included in some laxatives and some products for treating heartburn and indigestion.

Am I getting enough magnesium?

The diets of most people in the United States provide less than the recommended amounts of magnesium. Men older than 70 and teenage girls are most likely to have low intakes of magnesium. When the amount of magnesium people get from food and dietary supplements is combined, however, total intakes of magnesium are generally above recommended amounts.

What happens if I don't get enough magnesium?

In the short term, getting too little magnesium does not produce obvious symptoms. When healthy people have low intakes, the kidneys help retain magnesium by limiting the amount lost in urine. Low magnesium intakes for a long period of time, however, can lead to magnesium deficiency. In addition, some medical conditions and medications interfere with the body's ability to absorb magnesium or increase the amount of magnesium that the body excretes, which can also lead to magnesium deficiency. Symptoms of magnesium deficiency include loss of appetite, nausea, vomiting, fatigue, and weakness. Extreme magnesium deficiency can cause numbness, tingling, muscle cramps, seizures, personality changes, and an abnormal heart rhythm.

The following groups of people are more likely than others to get too little magnesium:

- People with gastrointestinal diseases (such as Crohn's disease and celiac disease)
- People with type 2 diabetes
- People with long-term alcoholism
- Older people

What are some effects of magnesium on health?

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

High blood pressure and heart disease

High blood pressure is a major risk factor for heart disease and stroke. Magnesium supplements might decrease blood pressure, but only by a small amount. Some studies show that people who have more magnesium in their diets have a lower risk of some types of heart disease and stroke. But in many of these studies, it's hard to know how much of the effect was due to magnesium as opposed to other nutrients.

Type 2 diabetes

People with higher amounts of magnesium in their diets tend to have a lower risk of developing type 2 diabetes. Magnesium helps the body break down sugars and might help reduce the risk of insulin resistance (a condition that leads to diabetes). Scientists are studying whether magnesium supplements might help people who already have type 2 diabetes control their disease. More research is needed to better understand whether magnesium can help treat diabetes.

Osteoporosis

Magnesium is important for healthy bones. People with higher intakes of magnesium have a higher bone mineral density, which is important in reducing the risk of bone fractures and osteoporosis. Getting more magnesium from foods or dietary supplements might help older women improve their bone mineral density. More research is needed to better understand whether magnesium supplements can help reduce the risk of osteoporosis or treat this condition.

Migraine headaches

People who have migraine headaches sometimes have low levels of magnesium in their blood and other tissues. Several small studies found that magnesium supplements can modestly reduce the frequency of migraines. However, people should only take magnesium for this purpose under the care of a health care provider. More research is needed to determine whether magnesium supplements can help reduce the risk of migraines or ease migraine symptoms.

Can magnesium be harmful?

Magnesium that is naturally present in food is not harmful and does not need to be limited. In healthy people, the kidneys can get rid of any excess in the urine. But magnesium in dietary supplements and medications, however, should not be consumed in amounts above the upper limit, unless recommended by a health care provider.

The upper limits for magnesium from dietary supplements and/or medications are listed below. For many age groups, the upper limit appears to be lower than the recommended amount. This occurs because the recommended amounts include magnesium from **all** sources—food, dietary supplements and medications. The upper limits include magnesium from only dietary supplements and medications; they do **not** include magnesium found naturally in food.

Ages	Upper Limit for Magnesium in Dietary Supplements and Medications
Birth to 12 months	Not established
Children 1–3 years	65 mg
Children 4–8 years	110 mg
Children 9–18 years	350 mg
Adults	350 mg

High intakes of magnesium from dietary supplements and medications can cause diarrhea, nausea, and abdominal cramping. Extremely high intakes of magnesium can lead to irregular heartbeat and cardiac arrest.

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

Yes. Magnesium supplements can interact or interfere with some medicines. Here are several examples:

- Bisphosphonates, used to treat osteoporosis, are not well absorbed when taken too soon before or after taking dietary supplements or medications with high amounts of magnesium.
- Antibiotics might not be absorbed if taken too soon before or after taking a dietary supplement that contains magnesium.
- Diuretics can either increase or decrease the loss of magnesium through urine, depending on the type of diuretic.
- Prescription drugs used to ease symptoms of acid reflux or treat peptic ulcers can cause low blood levels of magnesium when taken over a long period of time.
- Very high doses of zinc supplements can interfere with the body's ability to absorb and regulate magnesium.

Tell your doctor, pharmacist, and other health care 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.

Magnesium and healthful eating

People should get most of their nutrients from food, advises 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 otherwise may be consumed in less-than-recommended amounts. For more information about building a healthy diet, refer to the *Dietary Guidelines for Americans* and the U.S. Department of Agriculture's MyPlate.

Where can I find out more about magnesium?

For general information on magnesium:

- Office of Dietary Supplements Health Professional Fact Sheet on Magnesium
- Magnesium and Magnesium in diet, MedlinePlus®

For more information on food sources of magnesium:

- U.S. Department of Agriculture's (USDA) National Nutrient Database
- Nutrient List for magnesium (listed by food or by magnesium content), USDA

For more 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 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 brand name is not an endorsement of the product.

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