

# MAGNESIUM DEFICIENCY: The “Silent Epidemic”

Magnesium deficiency is on the rise in the North American population. Not surprisingly, magnesium associated deficiency disease states and health problems are also on the rise, including high blood pressure and heart disease. This concerning situation has been termed the “silent epidemic.”

**This article answers common questions about magnesium and its deficiency, including:**

1. Why is magnesium so important to my health?
2. Which conditions are associated with magnesium deficiency and benefit from its supplementation?
3. Who is most at risk for magnesium deficiency?
4. How do I know if I am deficient in magnesium?
5. What are the best ways to improve my magnesium status?

## Why is magnesium so important to my health?

Magnesium is needed for more than 300 biochemical reactions in the body. It helps maintain normal muscle and nerve function, keeps heart rhythm steady, supports a healthy immune system, and keeps bones strong. Magnesium also helps regulate blood sugar levels, promotes normal blood pressure, and is known to be involved in energy metabolism and protein synthesis.

## Which conditions are associated with magnesium deficiency and benefit from its supplementation?

Large scale studies have found that higher intakes of magnesium are associated with reduced risk of hypertension, heart disease, and diabetes. Other studies have found higher intakes of magnesium to be protective against loss of bone mineral density and osteoporosis, metabolic syndrome and depression.

Clinical studies have shown that magnesium supplementation reduces blood pressure and support its use in reducing the frequency and intensity of migraines, improving glycemic control in diabetes,



treating depression, insomnia, restless leg syndrome and hearing loss.

Magnesium also appears to have therapeutic value in treating asthma, anxiety, muscle spasms and pain, and potentially much more.

## Who is most at risk for magnesium deficiency?

Individuals most at risk for magnesium deficiency have specific health problems or conditions that limit magnesium absorption or cause an excessive loss of magnesium.

The health status of the digestive system and the kidneys significantly influence magnesium status.

Gastrointestinal disorders that impair absorption such as Celiac and Crohn's disease can limit the body's ability to absorb magnesium. Chronic or excessive vomiting and diarrhea may also result in magnesium depletion.

Healthy kidneys are able to limit urinary excretion of magnesium to make up for low dietary intake. However, excessive loss of magnesium in urine can occur in cases of poorly-controlled diabetes and alcohol abuse or be the side effect of some medications, such as diuretics (e.g. Lasix, Bumex, Edecrin, and hydrochlorothiazide).

Other medicines that may result in magnesium deficiency include antibiotics (e.g. Gentamicin, Amphotericin), Proton Pump Inhibitors (e.g. Nexium, Dexilant, Prilosec, Prevacid) used over the long-term, medications used to treat cancer (e.g. Cisplatin), among others.

Individuals with chronically low blood levels of potassium and calcium may have an underlying problem with magnesium deficiency.

Older adults are at increased risk for magnesium deficiency for multiple reasons (e.g. lower dietary intake, decreased absorption, increased excretion, medication use).

## How do I know if I am deficient in magnesium?

Dietary surveys suggest that many North Americans do not get recommended daily amounts (RDAs) of magnesium (420mg for adult men and 320mg for adult women). Furthermore, there is some controversy over whether the RDAs are adequate to not just prevent overt deficiency but to maintain optimal health and prevent disease.

The classic symptoms and signs of overt magnesium deficiency include loss of appetite, nausea, vomiting, fatigue, weakness, numbness, tingling, muscle spasms and cramps, seizures, personality changes, and irregular heart rhythms. However, many of the symptoms and signs of low magnesium (vs. overt deficiency), including elevated blood pressure, imbalanced blood sugar levels, decreased bone mineral density, low mood, etc. are not unique to low magnesium, making it difficult to diagnose. Moreover, low magnesium states may be asymptomatic or showing no outward signs (e.g. heart disease).

Blood tests can be helpful in determining magnesium deficiency but are not definitive. The standard test is the serum magnesium test, which determines the amount of magnesium in the blood. However, only 1% of the body's magnesium is actually located extracellularly (in the blood). The RBC (red blood cell) magnesium test offers a more accurate measurement of magnesium because it evaluates the intracellular levels of magnesium.

Thus, rather than relying on overt deficiency symptoms and/or blood tests alone, the experts advise the suspicion of magnesium deficiency whenever the risk factors for related conditions are present.

## What are the best ways to improve my magnesium status?

Eating a variety of vegetables (especially dark-green, leafy ones), legumes (beans and peas), nuts and seeds, and whole, unrefined grains every day will help provide recommended intakes of magnesium and maintain normal storage levels of this mineral.

Increasing dietary intake of magnesium can often restore mildly depleted magnesium levels. However, increasing dietary intake of magnesium may not be enough to restore very low magnesium levels to normal.

For those experiencing the symptoms of magnesium deficiency and those suffering from chronic diseases related to magnesium deficiency, supplementation of magnesium is often recommended.

There are several ways to supplement magnesium. The first way is through oral supplementation. Healing Foundations now carries Magnesium powder by Innate Response. It offers a therapeutic dose of the most well absorbed forms of magnesium blended with organic whole food. We also carry Magnesium in tablet form. This formulation provides the nutrition of organic spinach, a specialized immune blend as well as plant-sourced enzymes.

The second way of supplementing magnesium is transdermally (topically). Magnesium applied to the skin can be absorbed directly into your cells, bypassing the digestive system. This can be particularly useful for people who experience gastrointestinal upset when they take too much magnesium orally. The most familiar form of transdermal magnesium supplementation is epsom bath salts. The other forms include gels, lotions and sprays.

Magnesium supplementation is very safe for the most part. Higher doses of orally supplemented magnesium can cause diarrhea and abdominal cramping. Also, people with kidney disease may not be able to excrete excess amounts of magnesium. Therefore, it is important to consult with your healthcare practitioner about how to properly dose magnesium.

**Ask Your ND if magnesium supplementation is right for you!**



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