



Sunny Meadow

MEDICAL CLINIC

Are you near a AA battery? If so, pick it up and feel its weight. That's roughly how much of the mineral magnesium you have in your body — about [25 grams](#), or a little less than an ounce. Magnesium has many health benefits, and plays a vital role in many bodily functions, yet it gets almost no press compared to its more famous buddies, iron and calcium.

While magnesium abounds in nature — it's the seventh most common element on earth, by weight — we aren't getting nearly enough of it to achieve and maintain optimal health. Somewhere between [10-30% of people](#) worldwide — and [around 50%](#) of Americans — appear to be deficient. **Magnesium deficiency is so common and widespread that it's been called a [public health crisis](#).**

And compounding the problem is the fact that it's hard to accurately measure magnesium levels in the body. Tests look at serum magnesium (in the blood) and not intracellular magnesium (the concentration of magnesium within cells, where it's needed). It's a little like trying to figure out the financial health of a bank by counting the money in the Brinks vans going to and from the building. There's some relationship, but it's far from the whole story.

But what exactly does magnesium do in your body? What are the health benefits of magnesium? And why are so many of us deficient these days? Read on to find out!

What is Magnesium?

Magnesium is a mineral needed to support a number of critical functions in your body. For instance, it helps maintain normal blood pressure, keeps your bones strong through the metabolism of calcium and potassium, and helps to keep your heartbeat steady. It's a cofactor involved in over [300 enzyme](#) systems that regulate biochemical reactions. And it's a necessary component for energy production, DNA and RNA synthesis, and muscle and nerve function.

Magnesium is also an electrolyte, which means it carries an electric charge when dissolved in bodily fluids like blood. However, the majority of magnesium in your body is uncharged and is bound to proteins or stored in your skeleton. Approximately half of the magnesium in your body is [found in bone](#), with very little circulating in blood. In fact, less than 1% of your body's magnesium is in your bloodstream. And it remains very tightly controlled — primarily by your kidneys — which determine magnesium excretion or retainment.



6 Magnesium Health Benefits



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Getting enough magnesium is not only essential for everyday physiological functioning. It plays a substantial role in the prevention of numerous health conditions, too. Below are some of the most researched magnesium health benefits.

1. Improved heart health

A 2017 [meta-analysis](#) of 11 studies published in *Nutrition Journal* concluded that magnesium levels circulating in the blood are inversely associated with the incidence of heart disease and hypertension. While more research is needed to determine optimal serum levels of magnesium, researchers were able to identify higher levels as having a protective effect on heart health.

Specifically, for every 0.1 mmol/L increase in circulating magnesium, there was a 4% lower incidence of hypertension.

Furthermore, a [2005 study](#) reviewed 20 randomized trials and found that administering intravenous or intramuscular magnesium prior to heart surgery was effective in preventing post-operative atrial fibrillation (AF), or irregular heartbeat. Blood clots, stroke, heart failure, and other complications can result from AF.

In other research, magnesium supplementation has also been beneficial in [lowering](#) high blood pressure, especially among people with insulin resistance, prediabetes, and other high-risk groups.

2. Reduced risk for osteoporosis

Magnesium and calcium work together to keep your bones strong and healthy, so it makes sense that getting enough of these minerals can help slow or prevent skeletal weakening that often happens with age. A [2017 study](#) published in the journal *Nutrients* examined associations between skeletal muscle mass, grip strength, bone density, and dietary magnesium among 156,575 men and women ages 39-72 from the UK Biobank cohort. The researchers found a significant association between magnesium intake and bone health. This suggests that getting enough magnesium in the diet could help maintain musculoskeletal health as you age and even prevent osteoporosis and bone fractures.

3. May help prevent type 2 diabetes

In addition to the link between magnesium and heart health, the 2017 [meta-analysis](#) mentioned above also found that higher circulating levels of magnesium were associated with a lower risk for developing type 2 diabetes. However, there has been no

determination of optimal blood levels yet. A [2016 study](#) published in *Nutrients* evaluated the dose-response relationship between magnesium intake and type 2 diabetes risk, looking at 25 studies, including 637,922 individuals, 26,828 of whom had the disease. After adjusting for BMI and age, the authors were able to identify a 8-13% reduction in risk for type 2 diabetes for every 100 mg/day increment of dietary magnesium intake.

4. May improve sleep patterns and quality

Magnesium is known to have a calming effect for many people, which may help improve sleep. This could have substantial health benefits, considering that an [estimated 50%](#) of older adults have some degree of insomnia, or difficulty sleeping at night. A [2012 study](#) published in the *Journal of Research in Medical Sciences* found that 500 mg of supplemental magnesium, taken daily for eight weeks, resulted in subjectively improved sleep patterns among elderly individuals with insomnia, compared to a placebo group. Although total sleep time didn't significantly differ between the two groups, those who received magnesium reported better sleep quality and less waking at night and early morning. In a 1998 [study](#), a small group of older adults with insomnia were given 12.4 mmol of magnesium supplementation daily for four to six weeks. The study participants found that rates of restless leg syndrome decreased and that overall sleep efficiency improved.

5. May reduce and prevent migraines

A [heavily studied](#) health benefit of magnesium is the relationship between magnesium and migraines. Many researchers believe that magnesium deficiency may trigger waves of altered cortical activity, clumping of blood platelets in the brain, constricted blood vessels, and release of certain neurotransmitters that can lead to migraines. How much magnesium helps? Research on this is

inconsistent, perhaps in part because not everyone has the same level of need. Some people suffering from migraine headaches have found that supplemental doses of [up to 1000 mg](#) of magnesium can alleviate their symptoms. But some people also find that doses that high can cause diarrhea or abdominal pain.

6. May help regulate mood

Getting enough magnesium may also help uplift your spirits. And some people use magnesium against depression. A [2017 study](#) published in *PLoS One* aimed to determine if over-the-counter magnesium chloride supplementation improved symptoms among 126 adults in outpatient primary care clinics with reported mild-to-moderate depression. The participants received an intervention of 248 mg of magnesium per day for six weeks. And then, they underwent six weeks of no treatment as the control. Using the Patient Health Questionnaire-9, researchers found that magnesium supplementation resulted in significant improvement in depression scores. And 61% of the participants said they would continue using magnesium in the future.