

MAGNESIUM'S MAGNITUDE

The Crucial Mineral You Shouldn't Count Out

By John McCormack

Many patients experience symptoms like muscle spasms, fatigue, weakness, and tingling sensations for quite some time before seeking help. “I was hesitant to discuss how I was feeling with my provider at first. I just assumed I felt the way I did because of working, caring for my home, family, and just the stress of daily life,” says Lisa Inman, CMA (AAMA), a medical assistant and procedure scheduler at Logan Health Wellness & Pain Management in Kalispell, Montana.

Eventually, Inman brought her concerns to her primary care physician's attention. The physician ordered magnesium and vitamin D supplements, and within weeks, Inman felt significant relief.

Inman's experience is not an anomaly. Patients often assume that their common aches and pains are a part of ordinary life. Fortunately, patients are discovering that they can address certain health conditions through complementary treatments such as magnesium supplements. In fact, the global complementary and alternative medicine market is set to grow from about \$82 billion in 2020 to \$405 billion in 2028.¹

More patients could benefit from such treatments if health care professionals—including medical assistants—keep holistic health in mind. While patients should always consult a physician before starting supplements, all health care professionals can empower patients to reach their health and wellness goals by understanding the ins and outs of magnesium and sharing seven truths with patients.



1. Magnesium Is a Vital Component of Overall Health

Part of being an integrative sports medicine specialist and surgeon is recognizing magnesium's connection to bone health, proper muscle contraction, and physical performance, says David Geier, Jr., MD, an orthopedic surgeon and former director and assistant professor of orthopedic surgery at the Medical University of South Carolina, Charleston. Though, he also acknowledges that magnesium does much more.

“Magnesium affects a lot of the different functions in the body. ... It's involved in blood sugar and insulin regulation, blood pressure, your heart's [contractions and] beating patterns, your blood vessels' [constriction] and [expansion], and nerve transmission. There's a whole range of different things that magnesium plays a role in,” notes Dr. Geier.

As one of the seven essential macrominerals, magnesium is a cofactor in over 300 enzyme systems that regulate diverse biochemical reactions in the body²:

- Protein synthesis
- Muscle and nerve function
- Blood glucose control
- Blood pressure regulation
- Energy production
- Oxidative phosphorylation
- Glycolysis

- Structural development of bone

Magnesium also contributes to the active transport of calcium and potassium ions across cell membranes, which is critical to nerve impulse conduction, muscle contraction, and normal heart rhythm.²

2. A Lack of Magnesium Can Truly Hurt

Because magnesium affects so many functions, having optimal levels in your body is essential, notes Dr. Geier. People with a magnesium deficiency could suffer from high blood pressure, high blood sugar, headaches, muscle cramping, anxiety, and sleep difficulties.³ Magnesium may also prevent or treat some chronic conditions, including Alzheimer disease, type 2 diabetes, cardiovascular disease, and migraine headaches.⁴

3. Signs of Magnesium Deficiency Can Fall through the Cracks

Symptoms associated with magnesium deficiency include a loss of appetite, nausea, vomiting, fatigue, weakness, muscle cramps, numbness, tingling, seizures, personality changes, and heart rhythm changes or spasms.

However, many of these symptoms tend to fly under the radar. “So, the problem with that is we can start to have increased pain, headaches, [and] muscle weakness. However,

it's generalized. It's nonspecific, and low magnesium many times goes completely unrecognized," says Jennifer Gantzer, DC, MS, DACBN, FACN, a clinical sciences educator at National University of Health Sciences in St. Petersburg, Florida.

Low magnesium levels are also often one of the many factors that contribute to the development of conditions such as hypertension or diabetes. "Patients might already be having subtle symptoms of diabetes because there are systemic things that are happening in addition to the electrolyte imbalances," says Dr. Gantzer. "So outright magnesium deficiency doesn't necessarily, per se, have isolated magnesium symptoms."

4. Achieving Optimal Levels of Magnesium Is Key to Overall Health

"Very few people have excessive levels of magnesium from natural living. Most people simply don't have enough," says Dr. Geier.

As such, providers must ensure that patients get the recommended daily allowance for magnesium intake²:

Age	Male	Female
1–3 years	80 milligrams (mg)	80 mg
4–8 years	130 mg	130 mg
9–13 years	240 mg	240 mg
14–18 years	410 mg	360 mg
19–30 years	400 mg	310 mg
31–50 years	420 mg	320 mg
51 years and older	420 mg	320 mg

5. Acquiring Magnesium through Food Is the Way to Go

Magnesium is an essential mineral. "This means it has a physiological role in the body. However, our body cannot make it. That means we have to eat it or we have to supplement it," says Dr. Gantzer. "[Magnesium] has to come from outside sources."

People ideally acquire the recommended amount of magnesium from food. By eating the right foods, people can acquire magnesium and other key nutrients such as potassium and calcium.

"We want to eat the natural sources. That's the best way to allow for normal daily [required] levels [of magnesium] to be satisfied. If you eat a plant-based food, that's high in all the minerals—you're getting this perfect collective of nutrients," says Dr. Gantzer. She suggests the following foods for getting proper amounts of magnesium and other nutrients:

- Leafy greens (e.g., spinach, kale, Swiss chard, and broccoli)
- Avocados
- Nuts (e.g., almonds, cashews, and walnuts)
- Seeds (e.g., sunflower, pumpkin, and chia)
- Grains (e.g., rice, corn, and oatmeal)
- White fish and oysters
- Legumes (e.g., beans and lentils)

6. Supplements Are an Option, If Used Correctly

While acquiring magnesium from food is best, supplements can also help.

Taking the proper magnesium dose is crucial. Too high of a dose of magnesium may be counterproductive, as the body absorbs smaller amounts of the nutrient with doses of more than 500 mg. "[Then], you're defeating the purpose [of taking a supplement]. You're going to absorb less of [the magnesium]. So that means it's better to take a lower dose of magnesium because more of that is going to get into the body," says Dr. Gantzer.

Additionally, a magnesium dose of more than 500 mg could act as a laxative and cause diarrhea, adds Dr. Gantzer.

7. Magnesium Can Interact with Medications

Several types of medications may interact with magnesium supplements or affect magnesium levels. For example, magnesium could decrease the absorption of oral bisphosphonates—such as alendronate (Fosamax)—which is used to treat osteo-

porosis. Additionally, magnesium can form insoluble complexes with antibiotics, and chronic treatment with loop diuretics can increase the loss of magnesium in urine and lead to magnesium depletion.²

Put Your Own Mask on First

With unprecedented levels of stress and burnout in the health care industry, caregivers must pay attention to their holistic health and zero in on factors such as magnesium. "The healthier and better your own body works, the better you can act as the mentor or care provider for patients," says Dr. Gantzer.

Several years ago, when he was experiencing burnout and was unable to find a solution, Dr. Geier turned to an integrative care physician for help. He now takes a more comprehensive approach to his health and uses complementary treatments such as magnesium supplements. This approach proved so successful that Dr. Geier transformed his practice from focusing on traditional orthopedic surgery to integrative orthopedic sports medicine.

Inman also finds plenty of opportunities to share her experiences with patients. Ultimately, she concludes that medical assistants can play a key role by helping "patients understand that getting enough magnesium not only helps maintain good health but can help manage stress, migraines, muscle aches, and pain." ♦

References

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