MAGNESIUM

The shocking reasons you may not be getting enough of this vital mineral—and how to change that

Q: I have been hearing a lot about magnesium lately. Why is it so important and how much should I take?
—Kim V., Goleta, GA

A: Magnesium intake in the average American diet has declined dramatically in the past 100 years. Boiling vegetables causes a 50-percent magnesium content loss. Brown rice loses 80 percent of its magnesium content when refined into white rice. Magnesium is rarely added back to the soil in conventional farming methods, which depend on synthetic fertilizers. Additionally, most Americans now eat fewer of the foods traditionally rich in magnesium (tofu, legumes, seeds, nuts, whole grains, and green leafy vegetables), preferring calories from refined foods, meat, and dairy products, all of which are low in magnesium.

After potassium, magnesium is the most concentrated intracellular mineral. About 60 percent of the magnesium in the body is found in bone, 26 percent in muscle, and the rest in the organs and blood. Although calcium supplementation gets all the headlines, magnesium deficiency is much more likely to be a problem than calcium deficiency.

Magnesium is critical to almost all enzymatic functions in the body. It is involved in energy production, protein formation, cell replication, and muscle relaxation. For example, magnesium is essential in the biochemical cycle that converts sugar to ATP (adenosine triphosphate, which is the “fuel” or energy for human cells). Just as iron is the mineral “heme” in red blood cells, magnesium is the central heme of chlorophyll, which can be thought of as “plant blood.” A heme is a mineral that acts like a magnet to bind oxygen to living cells. Plant life would not exist without magnesium, and without plants there would be no oxygen for food on the planet, nor any human beings!

Magnesium is also hugely important in contractile tissue—which means muscles and arteries. Magnesium and calcium work together to promote smooth muscle relaxation (magnesium) and contraction (calcium). Because magnesium acts as a natural calcium channel blocker, supplementation to at least the minimal daily requirement of about 500 mg can help reduce blood pressure (vascular resistance) and promote more efficient heart function.

Many cardiovascular problems can be helped with adequate magnesium supplementation. It is well established that people who die from heart attacks (myocardial infarctions) have lower heart magnesium levels than people of the same age dying from other causes. Intravenous magnesium therapy is widely used in Europe to reduce the damage from a heart attack. Because magnesium can improve energy production within the heart and dilate the coronary arteries (promoting improved oxygen flow to the heart muscle), adequate magnesium status will protect against angina, arrhythmias, enlarged heart, congestive heart failure, hypertension, intermittent claudication (a type of intense vascular leg cramp), mitral valve prolapse, stroke, and toxemia of pregnancy.

Magnesium is also well-documented to aid many other common health problems, including fibromyalgia, glaucoma, hearing loss, hypoglycemia, kidney stones, migraines, osteoporosis, PMS, and menstrual cramps. If you are prone to kidney stones, beware of calcium supplementation, as well as spinach, rhubarb, and strawberries, which are high in oxalic acid (which is linked to kidney stones). The only occasionally unwanted side effect of magnesium is that, as a muscle relaxant, it will sometimes cause a loose stool. This simply means your body can’t absorb the whole dose you took the prior day. Try taking magnesium in two divided doses of 250 mg each.

Most forms of magnesium are well absorbed, although magnesium oxide is not the best form. Better forms include magnesium aspartate, citrate, glycinate, or malate. It is best to take magnesium in the evening, when it can act as a light relaxant and promote good sleep. Look for a progressive multivitamin or mineral that contains equal amounts of magnesium and calcium. If you can’t find any, take additional magnesium at bedtime. If you take a supplement that contains, say, 500 mg of calcium and 200 mg of magnesium, hardly any of the magnesium will be taken up, because absorption will be blocked by the calcium.

Magnesium sulfate can be found very inexpensively in big bags on the bottom shelf of most health food stores. This wonderful form of magnesium is more usually known as “Epsom salts” and

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Magnesium Deficient?

Common symptoms of magnesium deficiency include:
- acute pancreatitis
- asthma
- chronic fatigue
- excessive noise/pain sensitivity
- high blood pressure
- kidney stones
- nervousness and anxiety
- muscle spasms/tics/cramps
- memory/concentration problems
- insomnia
- rapid or irregular heartbeats
- chronic constipation
- migraines and tension headaches
- emotional instability

is well absorbed through the skin.
Magnesium very effectively displaces lactic acid (a byproduct of anaerobic respiration), which is why Epsom salts are so helpful to athletes after a hard workout. For any kind of cramping or threatened muscle cramping, make time before bed for a long soak in a warm (not scorching hot) tub of water with several cups of Epsom salts poured into the water. Don’t use Epsom salts internally, because they have too strong of a laxative effect.

Magnetism is not routinely measured on standard lab tests. One reason for this is that by the time magnesium shows up as deficient in the bloodstream, symptoms would most certainly have appeared—magnesium is that critical for heart and other organ function. To evaluate your magnesium status, the best test is a red blood cell magnesium test, which assesses the reserves of magnesium in the body.

Finland may serve as an example of the perils of a high-calcium/low-magnesium diet, which is prevalent in this northern country. Published research shows that the average Finn ingests 1,300 mg of dietary calcium daily (possibly the highest in the world) and yet Finland is plagued with an exceptionally high death rate from cardiovascular diseases. Japan, with the lowest heart disease rate of modernized countries, has a roughly 1 to 1 calcium/magnesium dietary ratio. For most people, about 6 mg of magnesium per kilogram of body weight is necessary to ensure optimal magnesium status. This is almost 3 mg of magnesium per pound of body weight, or 300 mg for a 110-pound person, and 540 mg for a 200-pound person.

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