

# Magnesium Magic

## By Terri Saunders

Minerals provide the physical elements that comprise life and of all the minerals on Earth, none are as essential to life as the element magnesium. The Chinese word for magnesium is “mei” meaning beautiful mineral, and traditional Chinese healers consider it to be paramount in healing properties due to its ability to prevent and cure disease, maintain health and promote longevity. Dr. Jerry Aikawa refers to magnesium as the most important mineral to man and all other living organisms.

Deposits of magnesium were discovered by man near the ancient Greek city of Magnesia. Magnesium sulfate (Epsom salts) was employed then as a laxative and still is today. Magnesium was also used to heal a variety of conditions including heartburn, depression, vertigo, ulcers, kidney stones, jaundice, gout and worms. In the last 40 years, over 1,000 laboratory studies have been conducted revealing at least a hundred other health conditions that magnesium supplementation can successfully treat, and yet modern medicine still does not recognize its broad impact on health.

Foods that are rich in magnesium are whole grains, nuts, seeds, and green leafy vegetables, with the highest amounts found in pumpkins seeds, seaweeds and spirulina. Magnesium is at the center of the chlorophyll molecule, so dark green plants are particularly high in magnesium, provided of course that enough magnesium was present in the environment in which the plants were grown. The concentration of magnesium and other minerals in our food has declined drastically over the last several decades as a result of modern agricultural methods. Our bodies were designed to obtain magnesium from our food and do not have a mechanism for storing it. It is estimated that 70% of the population is severely deficient in this vital nutrient. While dietary magnesium intake a century ago was approximately 500 mg/day, it is now barely 175 mg/day.

In her enlightening book, “The Magnesium Miracle”, medical doctor and naturopath Carolyn Dean introduced the public to the far-reaching health implications of magnesium deficiency and the vast number of health conditions that magnesium can cure.

Magnesium is the fourth most abundant mineral in the human body, after calcium, phosphorous and potassium, and the second most abundant ionically charged mineral in the cells next to potassium. About 65% of all magnesium is in the bones and teeth while the remaining 35% is stored in the rest of the body including muscles, tissues and body fluids with the highest concentration in the heart and brain where most electrical activity takes place. Only 1% of the body’s total magnesium is found in the blood, making blood serum tests an inaccurate way to determine deficiency.

Approximately 325 enzymes are dependent on magnesium to carry out thousands of biochemical reactions in the body. Most importantly, magnesium plays a critical role in the production of energy in our cells by activating adenosine triphosphate (ATP), the energy storage molecule of the body. This is the energy referred to as *qi* or the life force. Without magnesium, there is literally no life. The combination of magnesium and ATP triggers the production and stabilization of all the body’s proteins including RNA and DNA, the building blocks of our genetic code. Magnesium interacts with all other vitamins and minerals obtained from the diet to metabolize carbohydrates,

fats and amino acids and create the physical structure of the body based on the genetic blueprint provided by the RNA and DNA.

Magnesium does an intricate dance with calcium to regulate significant body functions. Magnesium plays a critical role in the function of the nervous system by acting as a gatekeeper for calcium, permitting just enough calcium to enter a nerve cell to allow electrical transmission along the nerves to and from the brain, then forcing the calcium back out again. This exchange provides the electrical spark that powers our thoughts and emotions. While calcium contracts muscle fibers, magnesium relaxes muscles. When there is too much calcium and insufficient magnesium inside a cell the muscles stay contracted resulting in spasms, twitches and even convulsions.

There are many smooth muscles in the body that can over-contract and go into spasm when magnesium is deficient. Spasm in the bronchial tract creates asthma. Sustained contraction of the uterus causes painful menstrual cramps. Contraction of the blood vessels can cause high blood pressure, and in cases of severe deficiency, the heart muscle spasms, causing angina and even a heart attack. It is well known that heart attack patients have a far better chance of surviving with less heart damage if they are given magnesium through an IV soon after a heart attack. Magnesium dilates blood vessels and is a natural blood thinner, preventing blood clots. Strokes are another result of severe magnesium deficiency, and it has been found that if patients are given IV magnesium after a stroke, recovery is quicker and residual damage is much less severe. At the time of death calcium floods into the cells. It appears that our well-being and even our very life is determined by the delicate balance between calcium and magnesium.

Magnesium, along with vitamin D, is required for calcium absorption in the bones and teeth. It is recommended that dietary intake of calcium and magnesium be balanced in a 1:1 ratio and some feel that magnesium should be higher. Most people have far too much calcium in their diets due to the excessive intake of dairy products and high potency calcium supplements erroneously prescribed to prevent osteoporosis, creating a dangerous imbalance in the calcium-magnesium ratio. Calcium supplementation of more than 600 mg per day can cause calcification of the soft tissues and result in kidney stones, gallstones, hardening of the arteries, bone spurs and arthritis, and contribute to bone loss and tooth decay.

Magnesium has a calming effect on the nervous system and helps to keep adrenal stress hormones under control. When under stress magnesium is depleted very rapidly and deficiency can result in increased anxiety and fear, panic attacks, insomnia, migraines and tension headaches, rapid or irregular heartbeat, and in severe cases, convulsions and seizures. The production of serotonin, melatonin, dopamine, and other neurotransmitters is dependent on the availability of magnesium and other nutrients such as B vitamins, and when levels of these neurohormones drop, depression can occur. Magnesium deficiency is a contributing factor in cases of hyperactivity, ADD, and autism. Extreme anger and violence are often a result of long-term magnesium deficiency. Parkinson’s disease and Alzheimer’s disease are preceded by magnesium deficiency. Magnesium supplementation can greatly help these conditions.

Magnesium deficiency slows down peristalsis and causes constipation resulting in increased toxic buildup in the digestive tract, malabsorption of nutrients, bowel disorders, lymphatic and respiratory congestion and susceptibility to allergies, asthma, infection and disease. Magnesium is also crucial for detoxification of synthetic chemicals and heavy metals such as mercury, lead and aluminum.

Magnesium enhances sugar metabolism and insulin secretion, facilitating the transfer of glucose into the cells. Magnesium deficiency causes insulin and glucose to build up in the blood causing tissue damage, and is a key cause of both Type 1 and Type 2 diabetes, hypoglycemia, and the pre-diabetic condition known as metabolic syndrome.

Left unchecked, magnesium deficiency can lead to kidney failure in which case the body then becomes unable to eliminate unused magnesium creating the unfortunate situation where magnesium supplementation may be contraindicated.

Adequate magnesium levels are essential for a healthy reproductive system. Magnesium plays an important role in the production of cholesterol which is required for the creation of all steroid hormones including the sex hormones estrogen and testosterone and DHEA, the anti-aging hormone. PMS and menopausal symptoms such as hot flashes can be eased with magnesium supplementation. Because magnesium is important for optimum circulation, low libido, erectile dysfunction and inability to achieve orgasm are all related to magnesium deficiency. Studies show that fertile men have as much as twice the magnesium in their semen as infertile men. Magnesium is vital to the proper development of the fetus and a deficiency can cause mental retardation. Magnesium deficiency also causes preeclampsia in pregnant women, and magnesium IV drips are often used to prevent the onset of premature labor. Proper magnesium intake during pregnancy lessens the risk of Sudden Infant Death Syndrome (SIDS) and cerebral palsy and should be a required prenatal supplement.

Magnesium affects the permeability and stability of cell membranes, and a deficiency can weaken the cell membranes making them more susceptible to cancer. Magnesium deficiency is a major contributor to a weakened immune system leading to infections that predispose the body to cancer. While high levels of calcium can contribute to cancer, as in the case of prostate cancer, it has been found that high levels of supplemental magnesium inhibit carcinogenesis. A recent study in France showed that people with more magnesium and less copper in their blood could reduce their risk of death from cancer by as much as 50% and lower their risk of death from all other causes by 40%.

Other conditions related to magnesium deficiency are restless legs syndrome, calf, foot and toe cramps, intestinal spasms, tooth decay, vertigo, Reynaud's syndrome, confusion, poor memory, and numbness and tingling.

Perhaps the earliest symptom of magnesium deficiency is fatigue since numerous enzyme systems cannot function properly without adequate magnesium. As magnesium levels decrease and tissues contract and spasm, pain anywhere in the body is another commonly experienced symptom of deficiency. Magnesium blocks the NMDA pain receptors in the cells and subsequent cascade of pain inducing chemicals into the tissues. Back, muscle and joint pain, all types of arthritis and fibromyalgia respond extremely well to magnesium supplementation, especially in conjunction with reduced calcium intake and vitamin D3 supplementation.

In addition to inadequate magnesium intake through diet, there are several factors which contribute to magnesium deficiency. Stress uses up tremendous stores of magnesium as does intense exercise that overwork the muscles and induce sweating which depletes magnesium levels. The body utilizes a tremendous amount of magnesium to detoxify environmental pollutants such as chemicals and heavy metals. Fluoride is antagonistic to magnesium and can deplete magnesium levels. Infections and disease also tax our magnesium supply. Certain foods such as tannins from black and green tea, phytic acid from unfermented soy products and unsoaked grains and seeds, and oxalic acid in raw spinach can reduce our available magnesium. Consumption of alcohol, sodas and coffee, and smoking deplete the body of magnesium. Medications are notorious for robbing the body of needed magnesium and other minerals and vitamins. Some drugs that do this are diuretics, bronchodilators such as theophylline for asthma, birth control pills, insulin, beta blockers, digitalis, tetracycline and some other antibiotics, corticosteroids, antipsychotics and cocaine.

Considering the ubiquitous effects of magnesium deficiency on health and the pervasive lack of this vital nutrient in our food supply, it is highly recommended that we supplement our diet with magnesium. There are many types of oral magnesium supplements on the market, though only a small percentage of oral supplements actually get absorbed. Poor digestion and inadequate hydrochloric acid interfere with absorption, especially in the elderly. Vitamin D, B1 and Selenium deficiencies also prevent magnesium absorption. Oral magnesium supplements can also cause the unwanted side effect of loose stools or even diarrhea.

Though dietary magnesium is important, an even better way to supplement is to massage magnesium oil, extracted from an ancient seabed 1600 to 2000 meters deep, onto the body and allow absorption to take place through the skin directly into the tissues. This bypasses the digestive tract eliminating the problem of malabsorption and loose stools, and has been proven to be almost as effective as intravenous application.

In his book, *Transdermal Magnesium Therapy*, Mark Sircus, Ac., O.M.D. notes that people can experience immediate pain relief when the oil is rubbed directly into painful joints and injured or tight muscles. Unlike oral supplements, magnesium oil can actually raise DHEA levels which has an anti-aging and libido enhancing effect. Most people experience increased vitality, mental acuity, inner calm and better sleep within a few days after using it, though it can take from 1 to 3 months of daily use to resolve a severe deficiency. There is no danger of overdose as the body will only absorb what it needs. Magnesium oil is actually not an oil, but a purified concentrated blend of magnesium chloride and trace elements, and will not stain clothing. It should ideally be used daily and left on for at least 30 minutes during the day or at bedtime to help with sleep. Magnesium oil can also be put in a tub or footbath for a 30 minute soak and applied in diluted form to the face to reduce wrinkles. Not all magnesium oil is equal in purity or quality, so it is important to get it from a trusted source. Experience the magic of magnesium and enhance the quality of your life.

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