



HEALTH BENEFITS OF MAGNESIUM

Magnesium is a cofactor in over three hundred reactions in the body, necessary for transmission of nerve impulse, temperature regulation, detoxification in the liver, and formation of bones and teeth. However, magnesium shows its true power in cardiovascular health. Magnesium is used in the process of metabolism. The body consumes mega amounts, especially when under stress of any kind. Nearly EVERYONE has signs of magnesium deficiency, but we don't realize it.

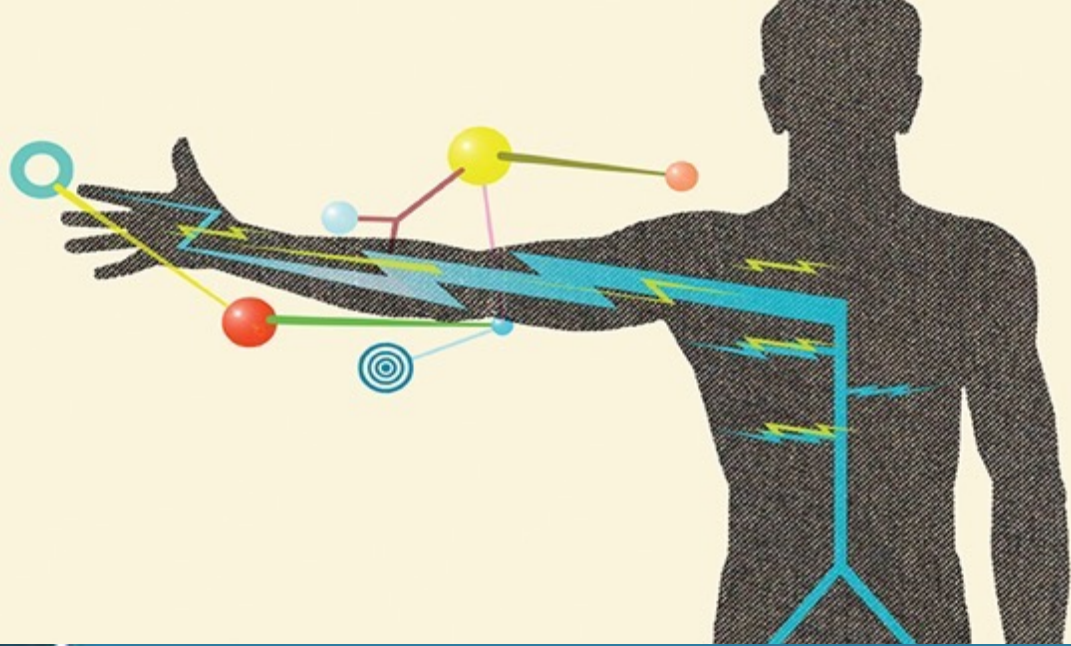
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The Food And Drug Administration has not evaluated these statements and this product is not intended to diagnose, cure or treat cancer. Magnesium has no adverse side effects or long-term risks.



Magnesium Your Body's Spark Plug

This mineral is one of the most critical nutrients in your diet. Are you getting enough?

The fourth-most-abundant mineral in your body, magnesium is vital for overall health, including the prevention and treatment of many diseases. Yet only one in three of us gets enough of this mineral through diet. A shortage can manifest in symptoms that are often mistakenly viewed as separate maladies.

“Magnesium works like a spark plug for multiple processes in the body,” explains Kathie Swift, MS, RDN, education director for Food as Medicine at the Center for Mind-Body Medicine and author of *The Swift Diet*. “It works in partnership with other nutrients as an important catalyst for more than 375 reactions that we need to keep our systems going strong.”

Magnesium is a key electrolyte, and among the biochemical reactions it regulates are protein synthesis, blood-glucose control, and blood pressure. Heart function, digestion, and sleep are also directly affected by it.

If levels continue to decrease, it may cause numbness, tingling, seizures, mood swings, abnormal heart rhythms, and coronary spasms.



MAGNESIUM

WHO NEEDS MAGNESIUM?

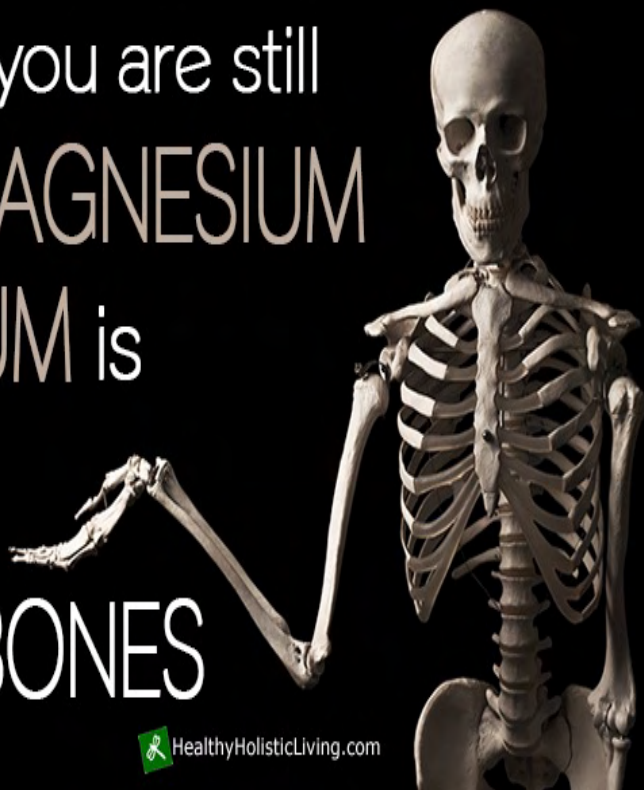
Who Needs Magnesium?

Magnesium is used in the process of metabolism. The body consumes mega amounts, especially when under stress of any kind. This means athletes can become very prone to magnesium deficiency. Hyperkalemia, excessive calcium depositing in the soft tissue, ligaments and joints, is a typical sign of magnesium deficiency, as are cramping and restless legs.

As tissue cell levels of magnesium drop, calcium can leach out of the bones and settle in these places. You may also find it settling at injury sites or areas of low pH in the body, as the body to alkalize and buffer acid by-products also uses calcium.

We are exposed to large amounts of calcium in foods these days, but relatively low levels of magnesium. It is often the case that simply increasing magnesium exposure can balance and control that excess calcium.

Just in case you are still
confused **MAGNESIUM**
not **CALCIUM** is
the key to
HEALTHY BONES



 HealthyHolisticLiving.com

MAGNESIUM DEFICIENCY

Why An Epidemic Of Magnesium Deficiency?

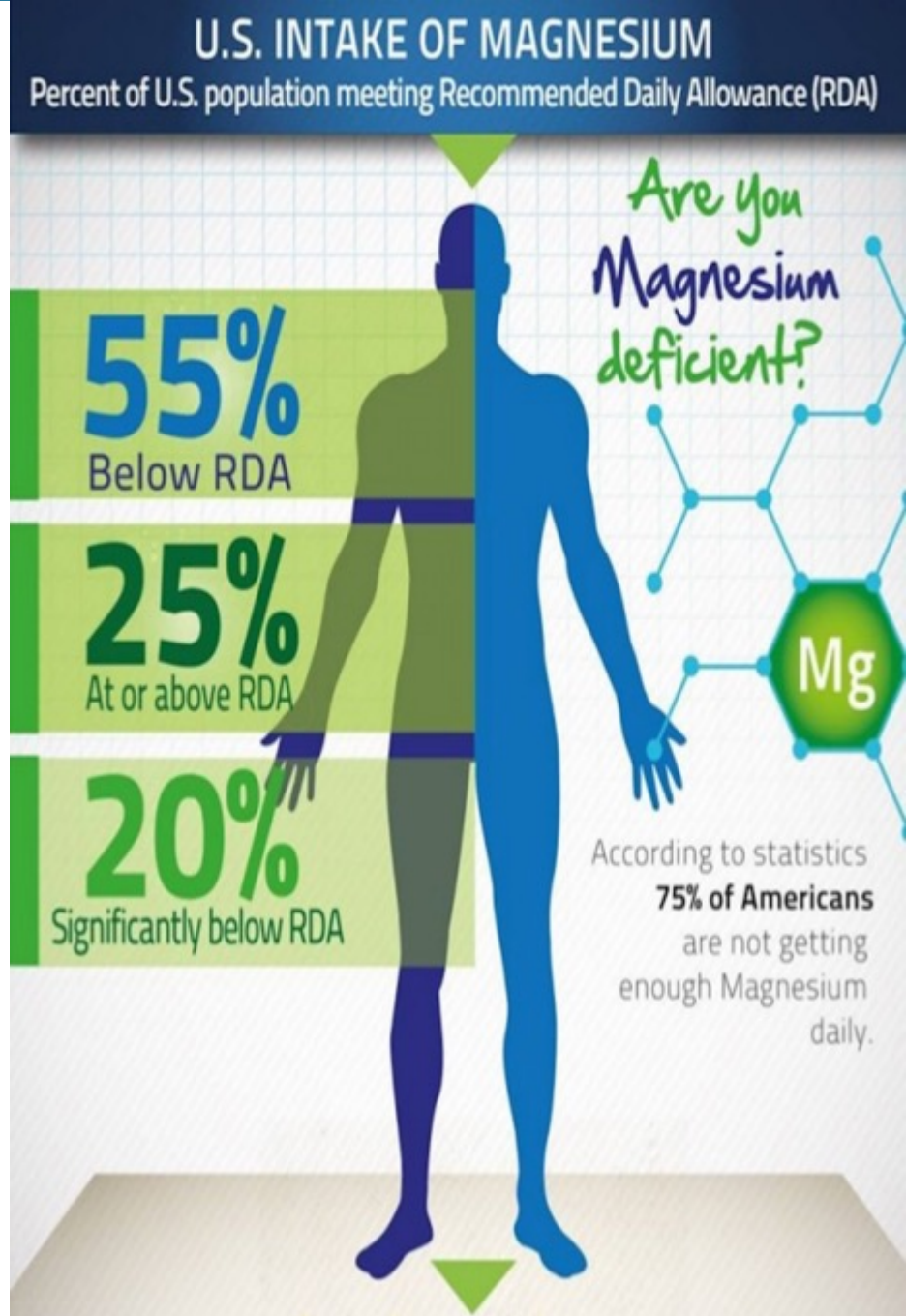
Considering the long list of conditions that can be prevented or treated with magnesium, a case can be made that there is an epidemic of magnesium deficiency in our society. There are three likely reasons why this is so: diet, stress and drug interactions.

First, there is probably a lot less magnesium in the American diet than there was a century ago. Modern food processing and refining techniques cause considerable amounts of this mineral to be lost. For example, when whole wheat is refined to produce white flour, 85% of the magnesium is removed. Refined sugar, which comprises about 19% of the calories in a typical American diet, had been almost completely stripped of the magnesium that occurs naturally in sugarcane.

These losses of magnesium are made even worse by farming techniques that deplete the soil of essential minerals. Traditional methods of farming include using manure and compost to increase the mineral content of the soil. In modern times, however, with the emphasis on producing higher crop yields, farmers use large amount of inorganic fertilizers, which are often low in magnesium. ¹

For example, the overuse of nitrates, phosphates, and potassium salts as fertilizers, drains the soil of magnesium. In addition, the use of ammonia as a fertilizer causes magnesium to be leached from the soil. Many scientists and nutritionists do not understand that the quality of the soil directly affects the mineral content of foods. Indeed, nutrition textbooks often state that mineral-deficient soil will lower crop yield but will not reduce the nutritional quality of crops that do grow. However, the facts indicate otherwise. The presence of a "goiter belt" in the midwestern United States proves that food grown on iodine-deficient soil do not contain enough iodine to meet our requirements.

Thus, our modern food supply starts off short in magnesium and, after the food processors are finished, the shortage is even worse. The typical American diet is, therefore, frequently low in magnesium. ¹



1. Magnesium, Alan R. Gaby, M.D

MAGNESIUM DEFICIENCY



Anything that makes you tense and tight could potentially be due to magnesium deficiency. If you can't relax or can't stop, think magnesium!

Full-blown health problems can even be tied back to this crucial mineral. Most people with ANY **chronic** disease or issue benefit greatly from magnesium supplementation therapy.

This is because chronic illness = **STRESS**, and stress depletes magnesium. The following are conditions that are likely to have magnesium deficiency as a part of the puzzle:

- Chronic Fatigue Syndrome
- Adrenal Fatigue
- Fibromyalgia
- Heart Disease
- Atrial Fibrillation
- Heart Palpitations
- Kidney Stones
- Diabetes
- Osteoporosis (yes, magnesium is more important than calcium for bone health!)
- Sudden Death in patients with Congestive Heart Failure



MAGNESIUM DEFICIENCY

Headache, dizziness, confusion,
poor concentration, nervousness,
jumpiness, migraine

Posterior headache, cramps in the
muscles of the face, neck, shoulders
and entire vertebral column

Cardiac arrhythmias

Gastrointestinal cramps, nausea,
vomiting, diarrhoea

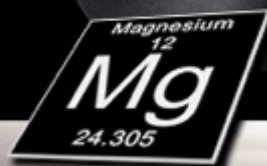
Urinary tract cramps,
uterine cramps

Paraesthesia (tingling) of the
hands, numbness

Thigh and calf cramps

Cramps in the soles of the
feet and toes, paraesthe-
sia (tingling)

Symptoms of MAGNESIUM DEFICIENCY



Nearly **EVERYONE** has signs of magnesium deficiency, but we don't realize it...

Symptoms Include:

- Constipation
- High blood pressure (Hypertension)
- Anxiety
- Depression
- Insomnia
- Behavioral disturbances
- Lethargy
- Impaired memory/thinking
- Seizures
- Fatigue
- Sleep disturbances
- Pain
- Muscle cramps
- Chronic back pain
- Headaches
- Migraines
- Muscular pain
- Tendonitis
- Anger
- Aggression
- ADHD
- Brain fog
- Tension
- Anxiety disorders such as OCD

FUNCTIONS OF MAGNESIUM

Functions Of Magnesium

Magnesium participates in more than 50 different biochemical reactions in the body. This mineral is necessary for growth and development, wound healing, immune system function, temporary regulation, and many activities of the brain and nervous system.

Magnesium also plays a role in muscle contraction (both heart and skeletal muscle), muscle relaxation (i.e., reducing muscle spasm), and in regulating blood clotting. In addition, magnesium is required to produce adenosine triphosphate (ATP), the molecular “power cell” on which the body depends to perform nearly all of its physical, mental, and biochemical work. As a result, magnesium is involved in some way or the other in just about every bodily function. ¹



MAGNESIUM

THE MASTER MINERAL

Fully supports:

- ✓ Blood Sugar Balance
- ✓ Optimal Circulation & Blood Pressure
- ✓ Cellular Energy Production
- ✓ A Calm Nervous System
- ✓ Pain Relief & Relaxed Muscles
- ✓ Bone Density & Calcium Balance
- ✓ Joints & Ligament Flexibility
- ✓ Deep Sleep Patterns, and More...

During The Last Forty Years, Thousands of Studies and Research Documents Have Been Published Proving That **Magnesium Is A Crucial Nutrient Supporting More Than 300 Functions In Your Body!**

The Weston A. Price foundation writes, “Magnesium alone can fulfill the role of many common cardiac medications:” ²

- Magnesium inhibits blood clots (like aspirin)
- Thins the blood (like Coumadin)
- Blocks calcium uptake (like calcium channel-blocking drugs such as Procardia)
- Relaxes blood vessels (like ACE inhibitors such as Vasotec) (Pelton, 2001).”

1. Magnesium, Alan R Gaby, M.D.
2. Pelton, 2001

FUNCTIONS OF MAGNESIUM



The American Journal of CLINICAL NUTRITION

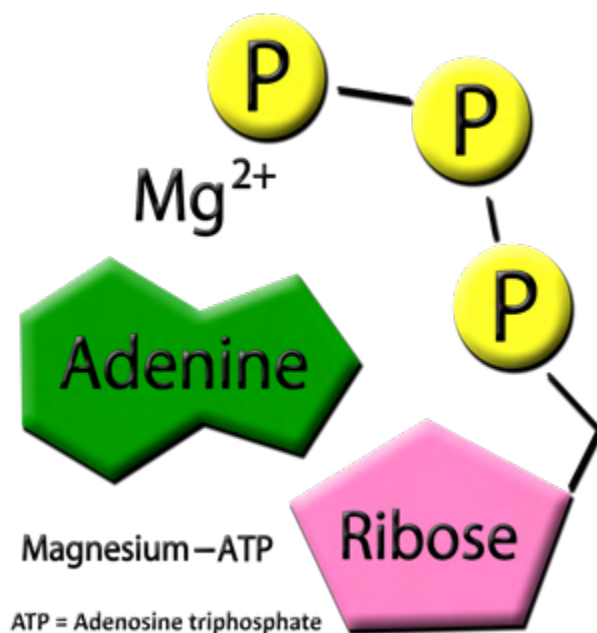
“Similarly, patients with diagnoses of depression, epilepsy, diabetes mellitus, tremor, Parkinsonism, arrhythmias, circulatory disturbances (stroke, cardiac infarction, arteriosclerosis), hypertension, migraine, cluster headache, cramps, neuro-vegetative disorders, abdominal pain, osteoporosis, asthma, stress dependent disorders, tinnitus, ataxia, confusion, preeclampsia, weakness, might also be consequences of the magnesium deficiency syndrome.”

- *Journal of the American College of Nutrition*

Why Do We Need Magnesium

Magnesium is the ‘Master Mineral’ with the most functions, as it controls the electrolyte balance of cells. Magnesium is the center of the chlorophyll molecule in plants, which the plant uses to convert sunlight energy into starches and sugars. Energy is always being transferred and magnesium always seems to be used in this exchange – whether in plants or in animals. That’s why eating your ‘greens’ is so important for good health.

In animals' magnesium is vital for electrolyte balance and for production of **ATP (adenosine triphosphate)** by mitochondria, which is the energy currency of the cell used to support enzyme activity. Magnesium must be sufficient for potassium to function properly and vice versa. ¹



Magnesium also controls how calcium is used in the body. This means that when magnesium is low, calcium leaches out of the bones and settles in the soft tissue and joints and in the blood as free calcium, clogging up the works and causing hypertension and hypercalcemia! ¹

You need sufficient magnesium to use the iron in your hemoglobin. People can have symptoms of anemia even when blood tests show iron to be in the normal range – simply because magnesium is deficient. ¹

Magnesium is the trunk of the nutritional tree that supports and enhances enzyme activity and the work of other nutrients. Magnesium regulates our nervous and electrical system, metabolism, endocrine system and immune system. Auto-immune disorders are also associated with low magnesium. Many things can go wrong when magnesium levels get too low. ¹

1. Magnesium, Alan R Gaby, M.D.

MAGNESIUM BENEFITS

The Mineral at Work

Magnesium keeps your body running smoothly and is key to your vitality. Here are just a few of the processes that this multitasking electrolyte supports.

Heart Health

“The heart is a muscle, and magnesium is vital to keeping our muscles healthy,” says Romy Block, MD, coauthor with Arielle Levitan, MD, of *The Vitamin Solution*. As an electrolyte, magnesium aids in the transport of calcium and potassium ions across cell membranes and enables nerves and muscles to work smoothly. “Its role in preventing muscle spasms keeps both the heart and peripheral blood vessels relaxed,” adds Levitan. .¹

Insulin Regulation

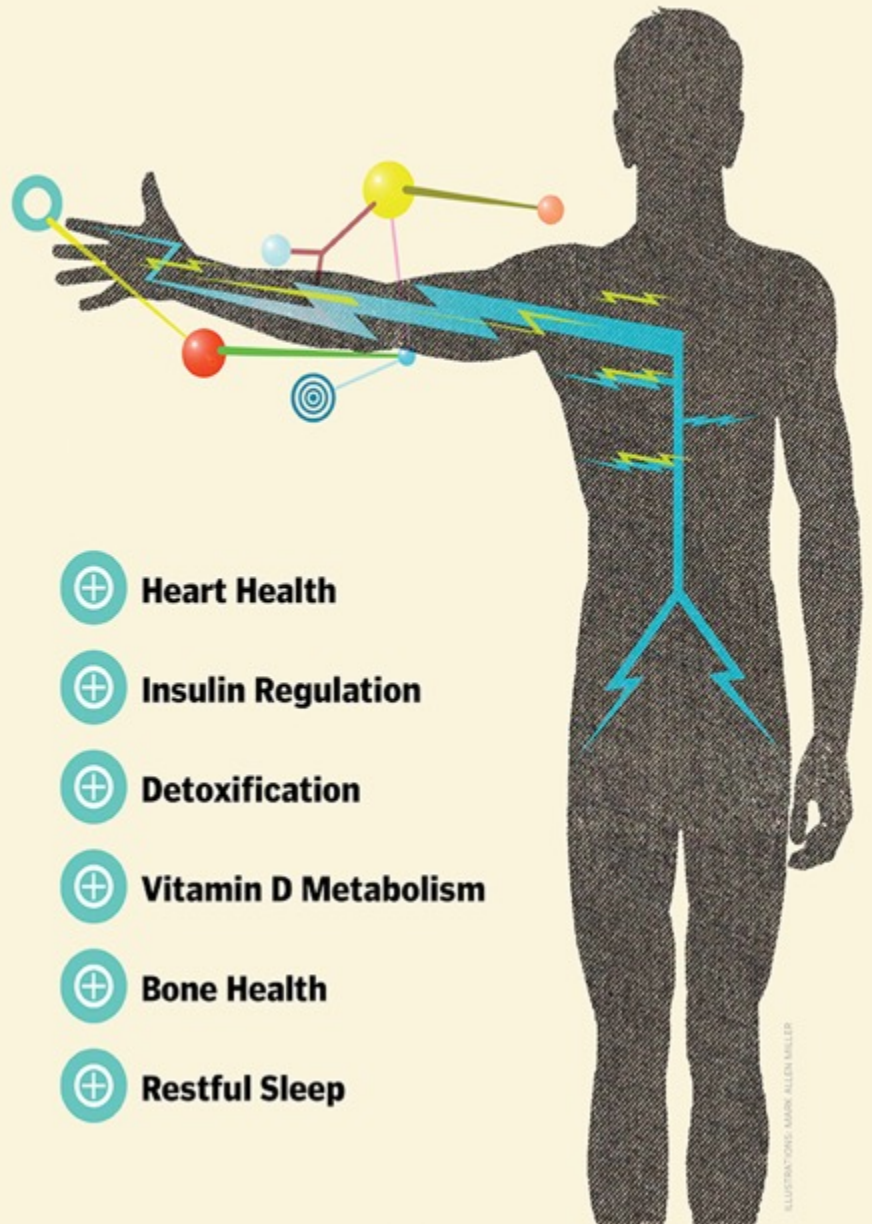
Insulin can't do its job of regulating sugar in the bloodstream without magnesium, which supports proper insulin secretion from the pancreas. If there isn't enough magnesium in the body, blood-sugar levels can get out of control. Studies show that a magnesium deficiency is associated with insulin resistance, a condition that often precedes type 2 diabetes.

Notably, a sufficient level of magnesium has been shown to slow or stop a person's progression from prediabetes to diabetes.¹

Detoxification

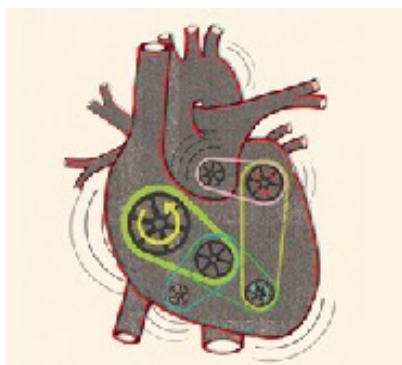
The liver is your body's detox workhorse, neutralizing and removing toxins from your system. “Magnesium, along with other nutrients, helps the liver get the garbage to the curb, in a manner of speaking, and assists in removing toxins from our systems,” Swift says. It does this by activating nutrients, including B vitamins (like thiamine) and glutathione, which are essential for liver detoxification and antioxidant defense.

If your environment is toxic, the mineral is especially important. “Having the right amount of magnesium in your system can prevent possible damage to your body and brain from environmental toxins and heavy metals,” says Claudine Arndt, a Minnesota-based integrative nutrition coach.¹



1. Experience Life

MAGNESIUM BENEFITS



Vitamin D Metabolism

Magnesium helps activate the enzymes that allow vitamin D to be absorbed in the body. It has also been shown to help reverse vitamin D resistance. “Magnesium is crucial in supporting the proteins that transport vitamin D in the blood,” says Andrea Rosanoff, PhD, director of research and science information outreach at the Center for Magnesium Education & Research in Pahoehoe, Hawaii. .¹

Bone Health

Half of your body’s magnesium is stored in the bones, and the mineral is key to every aspect of bone health. It influences the activities of cells that are responsible for breaking down bone tissue (osteoclasts), as well as those needed for building new bone (osteoblasts). “Many people think that calcium alone contributes to bone health, but magnesium is just as important to treat osteoporosis,” says Carolyn Dean, MD, ND, author of *The Magnesium Miracle*. “It keeps the bones supple, so they are less likely to break. .¹

Restful Sleep

“Magnesium is an electrolyte we can’t live without — and it seems we can’t sleep without it, either,” says Levitan. The mineral has the important job of helping us get high-quality slumber. Block says that it may help stimulate neurotransmitter receptors that affect how our brains relax and fall asleep. “It also helps reduce leg and muscle cramps, which can keep people up at night,” she says. .¹

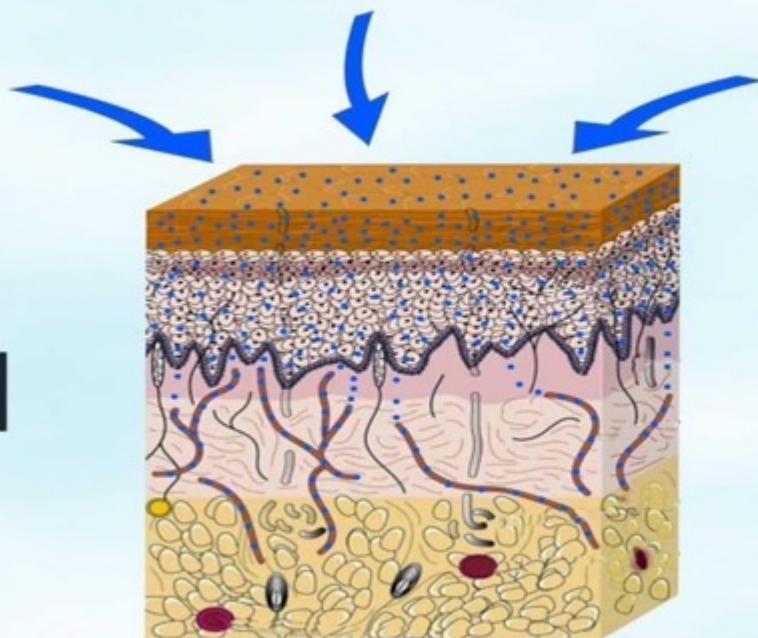
Melatonin is more than a sleep aid! Here’s a short list of the many health benefits you may experience from Melatonin:^{2,3}

- Melatonin helps to reduce migraines up to 50%
- Helps to Regulate Circadian Rhythm
- Cytotoxic – Kills Cancer Cells
- Strengthens the Immune System
- Protects Against Alzheimer’s
- Protects Pancreas
- May help to lower the Diabetic A1c Hemoglobin levels
- Assists in Weight Control
- Anti-Aging Molecule
- Natural Sleep Aid

1. Experience Life
2. CancerTruth.net
3. PreventDisease.com

MAGNESIUM

THE SKIN & Transdermal Magnesium Absorption



Transdermal Magnesium

'Transdermal magnesium' means that magnesium ions are absorbed via the epidermis, the outside layer of the skin. Just as we can sweat out electrolytes, the skin is also capable of absorbing electrolytes in via the same channels. It is a very large membrane and a self-regulating one at that. When we swim in the sea, we can absorb electrolyte minerals from the salt water.

Transdermal absorption of minerals has been practiced for thousands of years in a process called 'Balneotherapy' (saltwater bathing in mineral springs) to relieve arthritis and tight muscles. Magnesium uptake was tested extensively in balneotherapy studies by Russian scientists and others over the last century which demonstrate superior absorption of magnesium via the skin. ¹

Skin Deep Delivery System

While we tend to think of ourselves as 'waterproof' the reality is our skin is porous and certain substances are absorbed, not just into the skin but into the fat tissue beneath and the blood stream itself. Liposomal creams have been shown scientifically to be readily absorbed and to produce a reliable and predictable level of delivery into the body. ²

Increased Bioavailability & Absorption

The material which constitutes liposomes is recognized by the human body since it is identical to the elements which make up most of the cells. Another advantage of liposomal delivery is due to their very small size. These microscopic bubbles avoid digestive elements, transferring the nutrient from the digestive tract into the bloodstream, and then to the targeted area, achieving bio-availability. In other words, the body can use the nutrient more readily through bloodstream delivery. ^{3,4}

1. Magnesium, Alan R Gaby, M.D.
2. Article Sources: Dr. Lam (<https://www.drlam.com/blog/let-enhances-fatigue-treatment/199/>)

3. Cision:<https://www.prnewswire.com/news-releases/new-liposome-technology-for-advanced-nutrient-bioavailability-set-to-transform-the-vitamin-industry-300413620.html>
4. Vida Life Science: <http://www.vidalifescience.com/why-liposomal>

MAGNESIUM



7 Ways **MAGNESIUM** *Improves Your Brain*

7 Ways Magnesium Improves Brain Health

Magnesium is present in all cells of the body and is involved in over 300 enzymatic processes, including energy production. Magnesium is essential for maintaining normal bone density, normal cardiac rhythmicity, normal pulmonary function, and normal blood glucose regulation. Magnesium is one of the most common world-wide deficiencies and it plays a role in most of the common health struggles people face every day. In this article, you will discover how magnesium improves brain health.

Most doctors are not trained to detect magnesium deficiencies. Magnesium deficiency is often misdiagnosed because it does not show up in blood tests as only 1% of the body's magnesium is stored in the blood. ¹

Dr. Norman Shealy's, M.D., Ph.D. is an American neurosurgeon and a pioneer in pain medicine says, "Every known illness is associated with a magnesium deficiency," and that, "magnesium is the most critical mineral required for electrical stability of every cell in the body. A magnesium deficiency may be responsible for more diseases than any other nutrient. ²

MAGNESIUM



1. Magnesium Improves Brain Health and Cognition

If you fall prey to habitual symptoms of brain fog you may be deficient in magnesium. Over 300 enzymes require magnesium to perform biological reactions essential to tissue and organ function.² Magnesium supports optimal cognitive health by maximizing the various intricate functions of the brain.

Chronic stress depletes magnesium and so keeping stress levels under control and increasing your intake of magnesium improves brain health and cognitive processing speed.

Magnesium Improves Brain Memory Formation

Critical for age-related memory loss, magnesium is associated with memory potential. Studies show that low levels of brain magnesium directly correlate to poor memory function.⁴

Specifically, the hippocampus region of the brain is the primary location for retaining long term memories. Magnesium is known to strengthen the function of synapses in the hippocampus thus improving long-term potentiation. In other words, magnesium better equips the brain with the ability to retain memories over long term periods.²

Associated with decision making, the prefrontal cortex area of the brain aids in the retrieval of short-term memories. The effectiveness of the prefrontal cortex is largely dependent on magnesium. Magnesium also strengthens the synaptic nerve endings responsible for transmitting a response.^{2,3}

MAGNESIUM

Regions of the Brain

Neocortex:

Higher mental functions, general movement, perception and behavioral responses

Amygdala:

Emotional responses; aggressive behavior.

Hippocampus:

Memory of new information and recent events.

Corpus Striatum (formerly basal ganglia):

Connection between cerebral cortex and cerebellum; helps regulate automatic movement.

Magnesium Improves Learning Abilities:

As a result of increased long-term potentiation, resulting from the repetitive stimulation of a nerve, as well as the ability for nerves to transmit signals more effectively, magnesium improves brain health and better enables an individual to improve their ability to learn.

Researchers looked to test rats using Magnesium threonate (MgT) supplementation and look at their ability to swim and find a submerged platform on which to rest. In this study, both old and young rats who were using the MgT learned significantly faster than the control group.

Amazingly, the supplemented group was able to retain their memory of where the submerged platform was hidden after 24 hours. Both young and old rats in the control group forgot and began randomly searching through the maze and took more than twice as long as the MgT supplemented group.

This meant that older MgT supplemented rats showed significantly better memory and recall than young rats who didn't get MgT. The results showed a spatial long-term memory enhancement of 122% in younger supplemented rats and 100% improvement in older supplemented rats.²

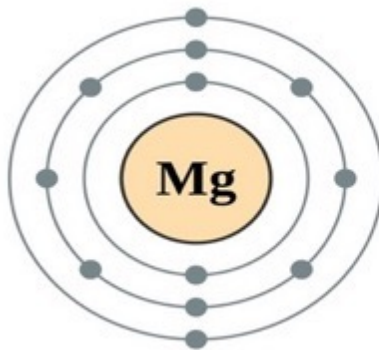
2. Magnesium Regulates Mood and Stress

Magnesium regulates mood and stress by nourishing the nervous system. Damage to the nervous system has been implicated as the cause of numerous health concerns including dementia and depression.⁵ Case studies show that treating magnesium deficiency has helped patients struggling with anxiety, with stress.⁷

MAGNESIUM

3. Magnesium Prevents Insomnia

A healthy sleep cycle is important to promoting overall health and the production of hormones which are synthesized during sleep. Magnesium may help reduce symptoms of insomnia and induce a deep restful night's sleep.



Primarily reliant on the same factors which regulate mood and manage stress, a healthy night's sleep is dependent on cellular magnesium concentrations. A healthy magnesium balance is needed to regulate hormones such as melatonin which in turn helps to induce sleep and decreases cortisol. Magnesium is also needed for a restful night's sleep because it promotes muscle relaxation ensuring less of your night is spent counting sheep.

4. Magnesium Balances Blood Sugar

Magnesium is a critical component involved in the regulation and maintenance of regulating blood glucose levels. Deficiencies in magnesium impair insulin secretion and the ability of glucose to be transported into cells.⁷ Poor blood sugar is damaging to the neurological tissue and stabilizing blood sugar is another way magnesium improves brain health.

Magnesium Improves Type II Diabetes

Many studies conducted show that supplementing diet with magnesium via food or oral supplementation improves insulin secretion and response in type-2 diabetic patients.⁶ It is this increased concentration of glucose in the kidneys that leads to frequent urination and further promotes magnesium deficiency.⁷

However, clinical testing has yet to determine if the magnesium alone is solely responsible for improved glucose control. Physicians speculate whether the improved health benefits are a result of another vitamin or mineral commonly found in food sources high in magnesium.

Regardless of the lack of scientists to directly correlate magnesium to the healthy balance of blood sugar, a decreased risk factor for developing diabetes is not to be overlooked following dietary magnesium supplementation. Individuals supplementing their diets with 1,000 mg/day of magnesium oxide after 30 days showed improved glycemic control. Other reports found that there was a 15%-23% reduction in the risk of developing diabetes following different doses of magnesium supplements.⁷

MAGNESIUM



5. Magnesium Fortifies Bones and Joints

Up to 60% of magnesium is concentrated in bones and the remaining is found in soft tissue and blood. When magnesium supply is deficient in cells, the body must search for magnesium which can affect overall health. Low levels of blood magnesium affects heart rate, nervous function, and can lead to chronic headaches. As a result of their magnesium hunt, cells are forced to pull what limited magnesium concentration is found in a delicate balance out of bone formations. ^{1, 7}

Calcium is not the only mineral critical to bone formation and strength. Magnesium must be in a proper balance with calcium in order to maintain healthy bone density and is essential to bone health as we age. When magnesium is pulled from the bones resulting from cellular magnesium deficiency, the concentration of calcium to magnesium becomes too imbalanced leading to the calcification of bones and joints. Such problems lead to conditions as osteoarthritis. ⁷

Limited clinical trials have found that when magnesium citrate is taken daily over long periods may prevent and possibly reverse osteoporosis. ⁷ Women who supplemented their diets with enriched magnesium food sources over a 2-year period reportedly had fewer fractures and a decreased rate of bone loss. ¹

6. Magnesium Supports Heart Health

Along with calcium, magnesium also plays a critical role in its balance with potassium. In combination with these other minerals, magnesium is responsible for the function of muscle contraction and heart rhythm. As previously mentioned, magnesium assists in regulating nerve impulses and is perhaps most important in maintaining cardiovascular health. ⁷

MAGNESIUM

Magnesium May Lower Blood Pressure

Magnesium is believed to balance blood pressure and improve cardiovascular health. Aside from alleviating symptoms of anxiety, relieving the restriction around blood vessels and regulating a healthy contraction of the heart may lower blood pressure. ^{2,7} Better blood pressure translates into better circulation which is another way magnesium improves brain health.



Magnesium Reduces Heart Attack Risk

Up to 250mg/day of magnesium supplementation is associated with a lower risk of cardiovascular disease and heart attack. Lower doses of magnesium supplementation was found to reduce the risk of stroke by 8% requiring further studies to analyze the link between dose dependency and results. ⁷

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7. Magnesium Assists in Detoxification

Magnesium assists in detoxifying the body's tissue of acids, toxins, gasses, poisons and other impurities. Environmental contaminants in our food expose our bodies to a higher amount of toxins and impurities than in the past. These impurities deplete our body of essential minerals.

Magnesium improves the motility of the gastrointestinal tract and colon and thereby stimulating the removal of contaminants by promoting a laxative effect. For this reason, magnesium is a primary ingredient in most laxatives used to relieve constipation. ⁷

The gut is called the second brain and improving motility is another way magnesium improves brain health.

MAGNESIUM

BODILY FUNCTIONS



Regulates Calcium

- Strong Bones and Teeth
- Helps Excrete Excess Calcium



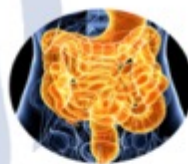
Regulates Heart Contractility

- Blocks Calcium from Heart Muscle
- Heart has 20x Greater Concentration



Relaxes Skeletal Muscle

- Helps Relieve Muscle Cramping and Pain



Cleans the Bowel

- Unabsorbed Magnesium Causes Laxative Effect



Energy Production

- Require by Over 300 Energy Producing Reactions



Relaxes Smooth Muscle

- Relaxes Bronchioles and Arterioles
- Relaxes Uterine Muscle

Sources:

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