

Just Because Everyone Needs It, Doesn't Mean Everyone Has It.

Magnesium is one of the most abundant elements on earth, potentially even in the entire universe. The same goes for the human body. Not only is magnesium extremely abundant in a healthy individual, its uses are incredibly prolific making it among the most vital of nutrients in order to ensure proper function, health, and longevity.

In fact, magnesium is required in order for DNA and RNA messaging chemistry to occur properly. This makes magnesium essential to all cells of all known living organisms. That is an incredible level of responsibility, but magnesium is up to the task.

The most common chemical purpose of magnesium is to facilitate the use and production of adenosine -5'-triphosphate (ATP), which is the primary energy molecule, used by cells to perform the various functions. Especially in the nervous system and muscle tissue cells of the human body, proper energy production and utilization is critical to survival. An excellent example of this is individuals who have severe depression that has not responded to treatment and those who have attempted suicide have been found to have abnormally low levels of magnesium in their cerebral spinal fluid. While this is only a speculative correlation, it is not a far-fetched idea to believe that a magnesium deficiency can have a strong effect on one's physical and emotional state.

One of the more commonly known health facts about magnesium is that it assists in the absorption of calcium so

that it can be used by the body to create new bone tissue and strengthen the skeleton. This is entirely true and very important to remember. This is also the critical reason why dairy products, though claiming to strengthen bones due to the high calcium content, actually compromise the magnesium supply in the body and increase the amount of calcium in the blood stream rather than in the skeleton.

An interesting study was conducted by several participating countries on the correlation between various calcium to magnesium ratios in the diet and the incidence of mortality from ischemic heart disease. The results were very clear. There was an almost perfectly linear correlation between high levels of calcium compared to magnesium and increased number of deaths due to heart disease. Countries that had a more equally balanced diet of both calcium and magnesium suffered fewer deaths from heart disease. Interestingly, after sudden death from heart disease, there is nearly always a greatly reduced amount of magnesium in the heart muscle of the deceased individual.

While there have not been enough studies to conclusively prove that magnesium deficiency is the ultimate cause of mortality in heart disease, there are a number of strong signs that point in that direction, especially when you take into account the factors that create magnesium deficiency. In terms of diet, the factors that contribute to magnesium deficiency are:

- high protein intake
- high calcium intake
- high fat intake
- high carbohydrate intake
- alcohol consumption.

While at first glance you might think that the above list is slightly exaggerated and makes it seem that eating a ham and cheese sandwich might cause a heart attack, the key piece of information is the use of the word “high”. The primary dietary source of magnesium is from vegetables. Most green leafy vegetables are a rich source of magnesium because plants require magnesium to produce chlorophyll, the green pigment found in nearly all green plants that use photosynthesis. It really is true every living organism requires magnesium for its energy production systems!

Balancing your diet with an abundance of green vegetables will create greater bioavailability of magnesium so that your body can properly process the proteins, fats, carbs, and calcium that it consumes. In the western world, the diet has become dominated by protein and carbohydrate consumption. Big Macs and fries, steak and potatoes, chicken and rice, spaghetti and meatballs, the list goes on and on. This heavily unbalanced diet puts an increased demand on the body for magnesium and the dietary sources aren't being provided. Over a dozen studies have found that the typical American diet satisfies less than half of the recommended daily allowance (RDA) of magnesium of 400mg per day. There are a great number of specialists and medical professionals that often recommend amounts greater than the RDA for magnesium to maintain optimum health and the average American is not even close to meeting those levels.

One would think that with magnesium being a powerfully important nutrient that measuring magnesium levels would be one of the top priorities of the

healthcare community. Sadly, this is not the case. Many of the common symptoms of magnesium deficiency are often mistaken for other conditions, or as conditions in and of themselves. Also, detecting magnesium levels in the body is difficult because the majority of the magnesium is stored intracellular and in bone tissue. A blood test may detect normal levels of magnesium in the blood, but bone and muscle tissues may be greatly depleted.

Symptoms of magnesium deficiency include:

- Apathy
- Irritability
- Confusion
- Palpitations
- Anorexia
- Nausea
- Vomiting
- Tremors
- Twitches
- Spasms
- Insomnia
- and Tetany

Most of these symptoms are connected in varying degrees to the nervous system. Magnesium has been known to have a calming effect on the muscles and nervous system and is sometimes recommended to people who have difficulty sleeping. In fact, the power of magnesium is so great that it has even been shown to positively effect children with autism when given with large amounts of vitamin B6.

There are two classic methods for detecting magnesium deficiency without an invasive examination: Chvostek's sign and Trousseau's sign. Chvostek's sign is where a facial muscle contraction in the mouth and

nostrils is caused by a tapping over the facial nerve in front of the ear. Using your finger to tap about one and a half centimeters in front of the ear canal by the cheek, if you notice a facial contraction similar to a slight wincing, this is a likely indicator of magnesium deficiency. Trousseau's sign is where you use a blood pressure measurement device and inflate it above the systolic pressure of the blood for about three minutes. If a deficiency is present a spasm will occur in the wrist and hand. While these two tests may seem archaic and bizarre, they are actually rather reliable and still used by doctors all over the world.

There are more scientifically sophisticated tests for deficiency that measure the amount of magnesium that the body retains after oral or intravenous administration. If a large portion of the magnesium is absorbed than this may indicate that the body's magnesium demands are not being met and a deficiency may exist or be developing.

Magnesium is easily absorbed through the gastrointestinal tract and for this reason it is often thought the deficiencies are highly unlikely. By now you should understand that this is a naïve assumption and that unless your diet provides available magnesium, deficiency may become an inevitability.

Those with compromised digestive tracts, diabetes, heart disease, and other symptoms of deficiency would do well to modify their diet to include foods rich in magnesium, as well as use magnesium supplements to remedy the shortfalls. There are a great many types of magnesium supplements on the market, the most

common being magnesium citrate, due to lowest cost of production and having average bioavailability. A superior form of magnesium, however, is magnesium glycinate.

Magnesium glycinate is a combination of magnesium and glycine, an essential amino acid. Because of its unique formation, it is more easily digested. Other forms of magnesium can cause loose bowels, hence the laxative "milk of magnesium". Magnesium glycinate is gentler on the digestive tract because of its pairing with an amino acid. The amino acid bond also allows it to be more effectively processed by muscle tissue than purely mineral forms of magnesium. Therefore, it has a greater ability of becoming part of the intracellular magnesium of the muscle tissues and nervous system rather than being applied to bone tissue formation. This does not mean that it is not effective in processing calcium for bone strength, but a more effective approach would be to use a supplement called magnesium-calcium citrate in combination with magnesium glycinate so that all areas of the body are given ample access to magnesium... as it should be.



4789 Vineland Ave.
Toluca Lake, CA 91602
(818) 761-1661
www.nutrikon.com