

## **Are You Magnesium Deficient?**

By Rita Woods, LMT

Many of our clients come to us because of muscle soreness, spasms, cramps and even twitching. In addition to the physical pain they may experience, they often say they just can't relax. We may work diligently on the muscles, but the client continues to experience the same nagging symptoms: stressed, muscle tightness, can't relax, headaches, anxiety, hyperactivity, irritability and even chest tightness. The problem may not be their lifestyle, but rather a magnesium deficiency.

I recently read a magazine article in the waiting room of my chiropractor's office. (The truth is, I "borrowed" the magazine and brought it home to read.) The article triggered my research button, and I've now learned more about magnesium than I could possibly share in one article. Today I'll share with you how a magnesium deficiency can have a direct impact on muscle tissue. But first, some basic facts.

Magnesium is the fourth most abundant mineral in our body and is essential to good health. Approximately half of the magnesium in our body is found in bone. The other half is predominately inside the cells and only about 1 percent is found in circulating blood. Magnesium is essential for more than 300 biochemical reactions in the body. It helps maintain normal muscle and nerve function, as well as cardiac health, blood pressure and blood sugar levels, and helps keep bones strong. Magnesium is even involved in energy metabolism (production of ATP) and protein synthesis. Simply put, we must have it to have good health.

Specific to our profession, magnesium plays an absolutely vital role in allowing muscles to relax. One role of magnesium is much like a gatekeeper at the cell wall. There are channels on the cell membrane that allow some things in at certain times and at specific levels. Magnesium is responsible for allowing calcium into the cell when a muscle needs to contract or a nerve needs to fire. Calcium helps it contract. Magnesium helps it relax. Magnesium is responsible for pushing the calcium out of the cell when the job is done. This allows the cell to return to normal and await its next command. If there is insufficient magnesium, calcium enters the cell and never leaves.

When this happens, the muscles and nerves continue to contract or fire. They never relax and the cell stays on alert status. This is akin to the fight-or-flight stress response. Remember that cells make up tissue, and tissue makes up organs. The whole body gets involved in this process. The result of magnesium deficiency is excessive muscle tension (which can then lead to muscle weakness), muscles spasms, cramps, tics, restlessness, anxiety and irritation. Stress has been known to further decrease magnesium levels, so a vicious cycle begins. In this case, the only way to break the cycle and restore a healthy state is to increase magnesium.

Early signs of magnesium deficiency also include loss of appetite, anorexia, fatigue, weakness, insomnia, poor memory, reduced ability to learn, apathy, worry and confusion. Brain function can be reduced because almost 20 percent of all the ATP in the body is in the brain. When magnesium is not present to help make ATP, the brain doesn't get what it needs to function properly. As the magnesium deficiency worsens, numbness, tingling, ringing of the ears, personality changes, abnormal heart rhythms, coronary spasms and continued muscle contractions can occur. Severe deficiencies can result in low levels of calcium in the blood. It's easy to see why a balanced ratio of calcium to magnesium is so important in preventing osteoporosis.

One report I read said as high as 80 percent to 90 percent of people may be magnesium deficient. There may be medical reasons why magnesium is not absorbed in some people, but that would be the minority. The main problem is that our diets tend to lack the green leafy vegetables, beans, nuts and fruits high in magnesium. Our soil has also been depleted of many natural minerals, so our foods are also lacking the minerals. Thus, the need to supplement is necessary for many people. Supplementation of magnesium must be balanced with calcium. Too much supplemental magnesium can result in loose stools or diarrhea, so stick with the recommended dosage. Toxicity can occur, but is rare and mostly due to taking excessive amounts, rather than following the directions on the bottle. I asked my chiropractor what products they offer their clients for relaxing. When they showed me the three products they offer, I was not surprised that all had magnesium as a main component.

I think a common complaint we hear from our clients is that they just can't seem to relax. They catch themselves with tensed shoulders and have to consciously make themselves relax, just to find that the tension is back in a matter of minutes. They may think it's just the stress of their job, family or busy schedule. In trying to be helpful, we might suggest meditation, yoga or a nice walk in nature. But let's face it, all of our clients don't have the best diet and some obviously lack nutritional knowledge. While it may

not be within our scope of practice to recommend supplements, it's OK to share things you have learned. If you think they could benefit from knowing more about magnesium, give them a copy of this article or suggest they Google "magnesium deficiency." You should look it up, too. While you're at it, look up how muscle pain can be associated with a vitamin D deficiency.

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