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## **Trace Minerals and Migraines**

**By Chris D. Meletis, N.D.**

**Eighteen percent of American women and six percent of American men suffer from migraines. Magnesium and trace minerals may help with this and other health disorders.**

An increasingly large amount of disease today may be attributable to deficiencies in the supply of trace minerals in our diets.<sup>1</sup> How can this be the case when the availability of food in our country is unprecedented, with a supermarket on every corner? These deficiencies do not stem from a lack of quantity of food, rather they stem from the quality of food. Trace minerals can be found mainly in whole, unprocessed foods such as vegetables and fruits. Unfortunately, the large majority of fruits and vegetables found in supermarkets today are nutritionally devoid of these minerals, largely in part to the high-yield farming practices in this and other countries.

The mineral content of food is mainly dependent on the amount of minerals found in the soil in which it is grown. Current farming practices leave soils with less than optimal amounts of these minerals, especially the less-common trace minerals. As a result of this, our food supplies leave us at risk for deficiencies of these very important substances. Because of this situation, it is essential that every person now supplement their diet with trace minerals in order to avoid the many diseases that are attributable to this scarcity. A lack of vital nutrients leaves the body unable to function fully, leaving it vulnerable to disease.

Trace minerals have numerous roles. Oftentimes, because these minerals are found in such small quantities in the body, scientists and physicians have paid little attention to their importance in health and disease prevention. However, with the advent of improved science and the recognition of the efficacy of natural medicine, we are beginning to understand how vital these elements are to our health.

Trace minerals, in a sense, are akin to the numerous tiny nails, nuts, and bolts that hold a house together. At first glance, a home is made of much more than these items. However, if they are slowly removed and never replaced, the house will continue to sag and, finally, will fall apart. So it is the same with the smallest building blocks of our bodies. Trace minerals are important in the proper functioning of enzyme systems, nerve conduction and muscle function, assisting with transfer of

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nourishment into cells, providing the framework for tissues, and regulation of organ functions. These “behind-the-scenes” functions are not possible without a constant, adequate supply of minerals. Even with the many multivitamin and mineral supplements available, most of these products fall short because they do not contain large enough amounts of the trace minerals that are so important to health.

Physicians that specialize in natural medicine are some of the biggest proponents of trace mineral supplementation. This type of physician is attuned to the many subtleties of the functions of the human body, and, oftentimes, addresses health issues with nutritional therapeutics in an attempt to bring the body’s health back into balance. This process of balance, also known as homeostasis, occurs quite wonderfully all by itself, as long as the body has the proper fuel and building materials. Unfortunately, physicians are seeing more and more diseases, which can be attributed to the body’s inability to achieve this balance. This trend towards ill health is directly related to the dearth of nutritional value in our diets today.

However, practitioners of natural medicine are very excited with the many dramatic turnarounds toward health that many of their patients have experienced with the use of mineral supplementation. A common example of this is the treatment of migraine headaches with magnesium. Recent statistics suggest that 18 percent of women and six percent of men suffer from migraine, and those numbers are increasing.<sup>2</sup> The Centers for Disease Control reported a 60 percent increase in the disease from 1980 to 1989.<sup>3</sup> Migraine headaches occur when the blood vessels in the brain spasm and constrict. Soon after this constriction occurs, the blood vessels then reflexively open, or dilate. When the vessels become dilated, they occupy more space in the brain, activating nearby pain receptors. It is speculated that an imbalance of mineral stores in the body can lead to this spasm of the blood vessels. Many researchers have suggested magnesium plays an important role in migraine attacks.

**“Recent evidence suggests up to 50 percent of migraine patients have lowered levels of tissue magnesium during an acute migraine attack.”**

The activities of magnesium in the body include preventing blood vessel spasm, inhibiting blood clotting, and stabilizing cell membranes—all of which are involved in migraine development.<sup>4</sup> Magnesium concentration exerts an effect on neurotransmitter production and receptors, pro-inflammatory molecules, and other migraine-related chemicals in the brain.<sup>5</sup> Recent evidence suggests up to 50 percent of migraine patients have lowered levels of tissue magnesium during an acute migraine attack.<sup>6</sup> Another study discovered brain magnesium concentrations were 19 percent lower in patients during migraine attack compared to healthy controls.<sup>7</sup> Because recent research strongly indicates a magnesium deficiency in migraine headaches, natural medicine practitioners prescribe magnesium along with other trace minerals as a primary treatment for this condition with great success.

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Because of their widespread distribution throughout the metabolic workings of the human body, trace minerals are integral to the functioning of one of the body's largest organ systems, the muscles. Mainly, magnesium plays a large role in the relaxation of muscles following their contraction. Without this vital nutrient, it would be impossible for the muscles of the human body to function.

Muscle cramps are prevalent in western society due to lack of intake of an appropriate amount of minerals. One easy, straightforward cure for muscle cramping is supplementation with magnesium and other trace minerals, as they allow the muscles to function smoothly and correctly. The role of magnesium in relieving cramped muscles also makes it a highly appropriate therapy for the muscle pain associated with fibromyalgia, a condition that is often treated successfully by practitioners of natural medicine. These practitioners often use high doses of magnesium and other trace mineral combinations to reduce the painful and tender muscles that are so common in fibromyalgia patients.

Another condition that is successfully treated with magnesium and trace minerals is Chronic Fatigue Syndrome. People with this condition often experience profound muscle aches and weakness. It has been shown that in order for proper muscle contraction and relaxation to occur, magnesium and calcium need to be present in proper amounts in the body, which can be difficult to achieve even in a standard healthy diet. Additionally, magnesium and mineral supplementation may decrease the pain involved with sports-related injuries and excessive physical activity. As we use our muscular system, it is slowly depleted of these minerals, making replacement a top priority. Other signs of magnesium deficiency include disorientation, depression, tingling, numbness, seizures, abnormal heart rhythms in addition to muscle spasms and cramps.<sup>8,9</sup>

A minimum of at least 60 trace minerals has been demonstrated to be vital to health and well being.<sup>10</sup> This article has covered only a small fraction of the multitudes of health benefits of trace minerals. As science and natural medicine continues to uncover the many roles for all of these trace minerals, doctors are finding exciting solutions to several maladies that may be successfully treated by replacing these nutrients in the body. Unless we begin replacing these minerals early on in life, we put ourselves at risk for the many diseases of mineral deficiency that are becoming more and more prevalent in society today.

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