

## Magnesium Deficiency Syndrome

There is little doubt that that many people have lost touch with nature, having been born into our modern "civilized" world. There is also little doubt that this fact has greatly impacted the health of generations of both city dwellers and impoverished communities around the world.

One the best examples of this problem can be illustrated by examining the incredible magnesium deficiency that exists. This widespread problem is underdiagnosed, difficult to correct with diet, and potentially related to an incredible number of illnesses. It has been estimated that 68% of the population is magnesium deficient, or will become magnesium deficient (based on a U.S. government study on dietary habits).

"Mg deficiency is widespread, but under-detected because of the role of Mg, not only in the plasma, but intracellularly," said Dr. Dierck-Hartmut Liebscher, MD, in his paper "**Dierck-Hartmut Liebscher, MD**" et al, published in the *Journal of the American College of Nutrition*, Vol. 23, No. 6, 730S-731S (2004).

Dr. Liebscher goes on to list some of the common errors made by modern allopathic medicine. Among them:

- There is a failure to recognize relevant symptoms as part of a Mg deficiency syndrome (MDS)

- A failure to deem symptoms of magnesium deficiency as relevant
- A misinterpretation of Mg serum levels
- Even when a medical doctor acknowledges a problem, the recommended corrective dose of 300 mg of Magnesium is not sufficient; a minimum of 600 mg of Magnesium is required to correct a deficiency.

Dr Leibscher et al go on to conclude:

"Based on experience, it is our conviction that many patients with so-called exclusion diagnoses (as for example, attention deficit hyperactivity disorder (ADHD) or chronic fatigue syndrome (CFS) would have their symptoms improved through Mg therapy.

—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."

In this article, we are not going to focus on presenting all of the abundantly available scientific data that points to the fact that magnesium deficiency is a

fact that magnesium deficiency is a problem of epidemic proportions. Look to the references section of this article for links for further research.

We are also not going to focus on writing a treatise about how necessary magnesium is for both survival and vital health and well being. Any nutritional handbook can easily provide these convincing details. Suffice it to say that magnesium is among the most necessary substances for human life, following very closely behind substances such as air and water. It is critical for proper metabolic function, on both macro and micro levels of human health.

Instead, we are going to focus on how natural magnesium can be used as a part of natural medicine to help correct wide variety of health problems, and how magnesium can be used to enhance individual well-being.

Those people who regularly swim in the magnesium-rich oceans have no need to proceed further. Like those indigenous cultures which practice the "ocean cure", a magnesium deficiency would be highly unlikely. For the rest of us, we highly recommend that one continues onward.

### **Magnesium Supplementation**

When faced with the possibility of a magnesium deficiency, most people would simply seek a prescription from a medical doctor, or perhaps simply go to the local vitamin and supplement store to get an internal magnesium supplement

get an internal magnesium supplement, maybe in the form of capsules, tablets, or perhaps even a powder. While supplementing with magnesium citrate may be an option, there are several points that need to be carefully considered.

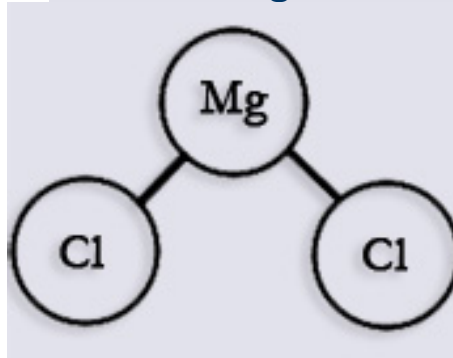
- Magnesium is very poorly adsorbed through the digestive tract
- Some extreme cases of magnesium deficiency completely resist oral supplementation
- Even when serum levels may show normal levels of magnesium, this is not a guarantee that magnesium is actually available at a cellular level, where it is needed the most
- Even when successful, oral supplementation can take up to six months to correct the imbalance, and even then, there is no guarantee that the magnesium is available where it is needed most (due to severe body dysfunction caused by the deficiency)

Luckily, there is a safe, effective, and affordable way to deliver magnesium into the body... One is which as natural and has been used by humankind since before recorded history: Magnesium chloride.

Using magnesium chloride transdermally results in the rapid cellular uptake of

results in the rapid cellular-uptake of magnesium through the skin. By bypassing the digestive system all together, one does not need to focus on the many digestive problems that may hinder the bioavailability of magnesium.

## What is Magnesium Chloride?



Magnesium Chloride is a simple salt that exists abundantly in both of the world's oceans and all of its salt water seas. It's chemical equation is  $MgCl_2$ . A single atom of magnesium is ionicly bonded with two atoms of chloride. It is relatively non-toxic when used reasonably.

## How and Why Is Transdermal Magnesium Chloride Used?

There are four methods for using magnesium chloride transdermally.

### 1. Magnesium chloride and sea salt baths

Utilizing the principles of balneotherapy,

enough magnesium chloride must be added to bath water to make a hypertonic solution. This means that enough salt must be added to make the bath more salt-filled than the body. This is an excellent way to both deliver needed trace minerals directly into the body, and to help the body cleanse itself.

However, don't be fooled by marketers; five to ten cups of sea minerals need to be added to a standard bath in order to achieve a truly therapeutic sea bath experience. While adding a few ounces of magnesium chloride "oil" may have some therapeutic effect, simple experimentation with differing amounts will easily demonstrate that our method, which comes far closer to the natural experience, is far superior.

See our outside references section below for links to potential suppliers of bulk materials. In fact, we found bulk purchased Nigari flakes to be superior to some of the premade magnesium chloride oils sold on the market.

## **2. Massaging magnesium chloride directly into a treatment area**

Magnesium oil is made by rehydrating magnesium chloride crystals; just enough water is added to create a very light oil-like substance. In actuality, there are no oils present in magnesium chloride oil.

A small amount of magnesium chloride may then be massaged or rubbed into any area an individual feels needs treatment (see below).

### **3. According to the precepts of any energy or meridian system**

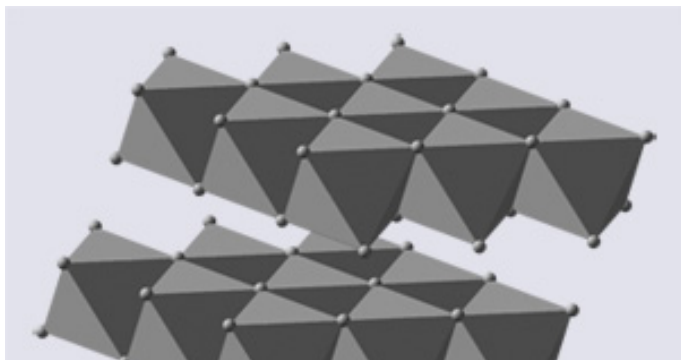
Magnesium chloride may be used to stimulate any system in the body. For example, it may be used on the neck and shoulders to treat stress; the legs and feet to work with the lymph system; the abdomen to work with the digestive system.

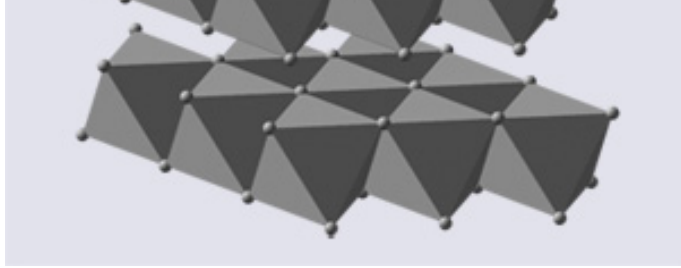
### **4. Intravenous magnesium chloride**

Dr. Norman Shealy, for example, states that the quickest way to restore intracellular levels of magnesium is through with IV treatment. The standard treatment: 10 shots are given over a two-week period. 1 or 2 grams of magnesium chloride are administered via IV over a 30 to 60 minute period of time, depending on the patient (see our references section for further information).

IV use must be done by a qualified medical staff. Of interest, Quinton Sea therapy is very similiar to treatment with IV magnesium chloride.

### **Why use transdermal magnesium chloride?**





First and foremost, magnesium chloride is the most natural form of magnesium. In the age of overly processed food and beverages, *truly natural* is often the safest way to go. According to Jack Samuels, president of the Truth in Labeling Campaign, many oral magnesium supplements are chelated with neurotoxic substances. While forms of oral magnesium supplementation such as magnesium citrate may be a viable option, it is difficult to ascertain the integrity and quality of the production process.

Other forms of magnesium, such as magnesium sulfate, are not easy to assimilate; they are quickly eliminated from the body. However, those individuals who enjoy using Epsom Salt for bath can use both the Epsom Salt and Magnesium Sulfate if preferred.

Due to its laxative effect, all oral magnesium supplements are difficult to use to overcome a magnesium deficiency. Transdermal magnesium therapy is clearly the best choice. It is safe, convenient, affordable, and effective. Studies done by Dr. Sealy with volunteers have shown that after four weeks of foot soaking in magnesium chloride, 75% of the volunteers showed a significant increase in intracellular magnesium levels.



By bypassing the entire digestive system, individuals can be certain that the magnesium is being delivered exactly where it is needed: at the treatment site and/or intracellularly.

One minor difficulty in the use of transdermal magnesium chloride is calculating proper doses. Magnesium chloride should be used regularly for two months to ensure proper remineralization, or during periods of illness or distress. If the application is done on-body, then it should be used daily. If it is used in bath, it should be used at least three times weekly. All of this provided that the body tolerates the applications well.

If the body rashes out, discontinue use until the rash clears; then resume use. The body will eventually adjust to its use. See other precautions in the correct section below.

Having reversed a magnesium deficiency, individuals should consider a common sense supplementation program of two to three times weekly if used topically, or once to twice weekly if used correctly in-bath. It can also be used as needed for sore muscles or with massages.

### **What has Magnesium Chloride been Successfully Used for?**

#### **Compromised Cell Membranes or low ATP Production**

According to Dr. Gary Gordon, elevated levels of intracellular calcium is caused by a magnesium deficiency. Thus the ratio of magnesium to calcium is incredibly important for normal cell function. Dr. Gordon notes that magnesium is poorly

Gordon notes that magnesium is poorly adsorbed through the small intestines.

### **Chronic Accute Headaches**

Some chronic headaches have been linked to magnesium deficiency. In a study done with 40 individuals, 32 individuals experienced relief from pain within fifteen minutes of magnesium IV treatments. Individuals studied suffered from migraines, tension, or cluster headaches. The study was conducted by Mauskop A, Altura BT, Cracco RQ, et al., and published in the publication entitled *Headache*, 1996 issue 36, pp. 154-160.

### **Asthma**

The jury is still out on whether or not magnesium supplementation is an actual viable treatment option for all asthmatic patients. According to Marc Noppen, MD, PhD, FCCP, magnesium deficiency can lead to bronchospasm and respiratory failure, among other serious health issues. Dr. Noppen also notes that magnesium has been shown to cause bronchial smooth-muscle relaxation by acting as a physiologic calcium antagonist.

Supplementation with transdermal magnesium, either through detox baths or applied directly to the chest area, would probably be a very prudent personal experiment for those with asthmatic conditions.

### **Cardiovascular Health / Heart Conditions**

According to C. Noel Bairey Merz, MD (director of the preventive and rehabilitative cardiac center at Cedars-Sinai Medical Center in Los Angeles), patients with serious heart conditions who began taking magnesium supplements were able to exercise for longer periods of time. According to Dr. Merz, the magnesium also appeared to protect the heart. The double-blind study was conducted with patients taking 365 mg of magnesium orally for six months.

Other experts believe that magnesium is a viable treatment for cardiovascular disease linked to high cholesterol and high blood pressure. According to Carolyn Dean, MD, ND, 50% of heart disease could be prevented just with the correct use of magnesium. Dr. Dean recommends taking 300 mg two to three times a day. She recommends taking magnesium oxide, magnesium citrate, or magnesium glycinate. However, as we have stated, transdermal magnesium is more effective, quicker, and with fewer side effects.

Large scale medical studies have also linked magnesium to high blood pressure, according to an article published by Denis Mann at Web MD.

A study conducted in South America demonstrated that supplementation with magnesium reduced cholesterol levels. However, due to the conflicting research reports, it is far wiser to reverse a magnesium deficiency in the early stages of heart disease; in some studies, magnesium supplementation led to an

magnesium supplementation led to an increase in heart attacks for individuals with a history of severe cardiac disease.

### **Magnesium and Cancer**

The French physician Dr. Pierre Delbet began studying the use of magnesium chloride for the treatment of open wounds in 1915. Dr. Delbet noted that common antiseptics caused an increase in wound tissue death. Later, he began to test transdermal magnesium chloride for other conditions. He eventually wrote numerous papers on the subject. In particular, Delbet found magnesium chloride to be especially useful for the the treatment of cancer.

Many nutritional experts believe that there is a link between both cancer and heart disease with deficiencies in magnesium, selenium and zinc. While conclusive data is not available, many studies have been conducted that directly implicate magnesium deficiency in the development of at least some cancers.

For example, researchers from the School of Public Health at the University of Minnesota determined that diets rich in magnesium reduced the incidences of colon cancer. A study published in Sweden determined that women with the highest magnesium intake had a 40 per cent lower risk of developing the cancer than those with the lowest intake of the mineral. (see Mark Sircus article on Cancer Risk, referenced in our references section below)

To quote Merz: "To not replace cellular

to quote Marc. "To not replete cellular magnesium levels would be negligent, especially in the case of cancer where a person's life is on the line. An oncologist who ignores his patient's magnesium levels would be analogous to an emergency room physician not rushing resuscitation when a person stops breathing. If one elects to have or has already had chemotherapy, they have four times the reason to pay attention to a concentrated protocol aimed at replenishing full magnesium cellular stores."

Magnesium chloride is a part of some natural and alternative skin cancer treatments as well. Magnesium, combined with Iodine therapy, has been used to directly treat skin tumors.

Two doctors from Germany, Dr. Seeger and Dr. Budwig, demonstrated that cancer is mainly the result of a faulty energy metabolism in the cells, the mitochondria. ATP and most of the enzymes involved in the production of energy require magnesium. A healthy cell has lower levels of calcium and higher levels of magnesium. When a magnesium deficiency is present, calcium builds up inside the cells. Energy production decreases; the mitochondria slowly start to calcify. It is known that carcinogenesis induces magnesium distribution disturbances, which cause magnesium mobilization through blood cells and magnesium depletion in non-neoplastic tissues.

High levels of magnesium have been

shown to inhibit carcinogenesis with solid tumors. Both carcinogenesis and magnesium deficiency increase the plasma membrane permeability and fluidity.

For more information on magnesium's relationship to cancer, see the IMVA article called "Cancer Cure Protocol" linked to in our references section.

### **Magnesium Chloride: Possible Contraindications & Warnings**

- Individuals with kidney disease should not supplement with magnesium without the direct guidance of a medical doctor.
- Although much rarer than a magnesium deficiency, an excess of magnesium can cause muscle weakness, decreased reflexes and disordered cardiac rhythm. However, is unlikely that the use of transdermal magnesium could cause a problem with an overdose (any more than swimming in the ocean daily would).

### **Other Reported Uses & Highlights**

- Alkalizing agent in the body
- May help those individuals suffering from chemical sensitivities
- Used to treat minor aches and

- pains
- Used to treat chronic fatigue and Fibromyalgia
- Used for chronic headaches
- Used for cardiovascular / heart health
- Used for cancer prevention
- Used as a mood stabilizer
- Used with treatments for neurological disorders
- Used with treatments for heavy metal toxicity
- Used with treatments for general toxicity

### **What the Critics Claim**

It is very difficult to find knowledgeable authorities who criticize the use of magnesium; especially transdermally. Authorities of course critically question magnesium's ability to treat and cure chronic illness and disease, but the same authorities would not dispute the need to ensure adequate cellular levels of magnesium.

### **Summary**

Magnesium chloride supplementation, transdermally, is a safe, affordable and effective way to supplement with magnesium. Lack of magnesium in the body has been clinically related to a wide variety of illnesses. As such, magnesium no doubt deserves to be a part of nearly every natural health program.

## **Buying/Purchasing Transdermal Magnesium Chloride**

The most affordable way to acquire transdermal magnesium chloride is to purchase food grade flakes. Simply fill a plastic "drip" bottle with magnesium flakes, and hydrate with high quality water (or colloidal silver). Keep the bottle filled with magnesium flakes, and refill the water inbetween uses. There is no need to actually work the flakes into a pure oil unless planning to resell... Maximum saturation will eventually be achieved, although it may take a few weeks for complete saturation.

Individuals can elect to buy "Magnesium Oil" or "Transdermal Magnesium Oil" from retailers. However, there are definately quality concerns and there is a great deal of unsubstantiated hype associated with different brands.