

Magnesium For Life



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Dosage



Diabetes is disabling, deadly and on the rise and in certain places has reached fifty percent of local populations.



Intravenous, Transdermal, and Oral Magnesium Mineral Therapy



Research suggests that shortfalls in magnesium intake can seriously impair athletic performance.

Since it is difficult to measure magnesium in the body accurately, being that most of it is in our bones and only about 1% is in our blood, do we wait until we show signs of deficiency before supplementing? The answer is clearly no if we want to live a long life in good health. Each day it is critical to receive the full requirements our bodies have for magnesium and those who understand the realities of modern life, diets and agricultural practices know how difficult it is to receive our needed magnesium through food alone.

The pertinent questions about magnesium chloride dosing are: how effectively is it absorbed transdermally, in bath water foot soaks, direct topical application or compared to oral consumption? And can we take in too much magnesium when all sources are considered. These are important questions when we start supplementing anything.

Before one begins transdermal magnesium chloride it is highly advised that you read the chapter on warnings and contraindications if you are suffering from any chronic illness, severe disease or deficiency, or are taking any pharmaceutical medications. Also if one is suffering from any kind of disease it is always recommended to have your treatments supervised by a primary health care practitioner. That could be a nurse, chiropractor, naturopathic doctor, acupuncturist, or allopathic medical doctor. Unfortunately few know anything about transdermal magnesium mineral therapy because it is so new.

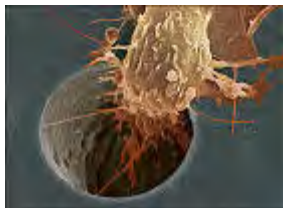
Magnesium chloride is without doubt a versatile mineral medicine, though as with all forms of magnesium supplementation, it is not easy to calculate the exact dosage. Absorption rates vary considerably from one person to another and from one form of use to another, even with magnesium chloride, which probably delivers more useable magnesium to the cells than any other form. **It is wise, especially if one is seriously ill, to start out with low dosages and build slowly up to higher doses over a period of a week or two.**

In general, to individualize the appropriate magnesium dosage for oral intake, the rule of thumb is approximately 6-8 mg/kg (3-4 mg per pound) of body weight per day. That translates into a **total dietary magnesium intake of 600 to 900 mg per day for a 200-lb man. With children some researchers indicate that 10 mg/kg/day are appropriate because of their low body weight and increased requirements for growth. Athletes also need more** depending on their stress and training levels[i] and we can always adjust upwards when under great emotional stress or when seriously ill.[ii],[iii]

The normal accepted recommended daily dietary amount of Magnesium is 300-400 mg. Many professionals feel this to be the bare minimum. Some would say that 1,000 mg is probably more in the range of what most people need due to stress (cortisol) causing magnesium to be dumped into the sweat in increasing quantities. Most people are numb to the amount of stress experienced every day. But cortisol can be measured by saliva tests if one really wants to know and if found to be high magnesium dosages can be adjusted up



Recommended sources for Magnesium Oil



Special Cancer Presentation

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accordingly.

Dr. Norm Shealy recommends using 6-8 oz in each bath you take when using his suggested magnesium chloride product, which is a USP grade product, made by the process of using hydrochloric acid. This is not considered a natural product, as the magnesium oil evaporated from seawater is, and is considerably more expensive. With the natural form of magnesium oil, evaporated from seawater, the recommended amount per bath is only 2 oz. The cost and amount you use is dependent on the concentration of the magnesium oil obtained. The magnesium product from Dr. Shealy contains 25% magnesium chloride as opposed to 30-35% from natural seawater evaporated forms. Fabricated forms of magnesium oil may contain 25 times the amount of heavy metals as the tested natural seawater form. It's the difference between using MgCl₂ evaporated from sea water and MgCl₂·5H₂O powder to make the oil. Please write for more information on these products.

As with anything when just starting, caution should be taken in the beginning until one gets a feel for the appropriate dosages for adult and especially with children. Each person has to adjust the dosage to their own needs, size and body weight. The actual amount used is also dependent on the method of use or the combinations of methods used. Magnesium chloride may be taken orally, applied directly to the skin (used in a massage or simply rubbed on), used in foot baths, full body baths, and sprayed into mucus membranes.

Our cells are best served when they are brimming with magnesium reserves and we need to absorb a sufficient amount each and every day. A magnesium saturated body will be potent and will sport a tougher immune system that will fight more easily against infections and influenza. This does not mean that we should all put ourselves into hypermagnesaemia without concern and ignore the needed balance with other minerals. What we really have to do is make sure we have adequate magnesium, for all the cellular systems to work to their optimal level, and at all times.

The requirements for a very ill person are going to be higher than for a healthy person. In general, for a large adult, **spraying one ounce of Magnesium Oil a day all over the body** is recommended with that adjusted downward for children depending on their age and size. If used in a full body bath two ounces should be used. Some people enjoy a very concentrated magnesium chloride bath applying as many as eight ounces at a time. For sport injuries more concentrated baths would definitely be indicated. Footbaths use much less water so two ounces will yield a very concentrated footbath.

The Magnesium Oil can and should be diluted when applying directly to the skin (especially with children) if redness or "stingy" feelings result in uncomfortable feelings or sensations. If one is suffering from long term illness of any kind, dosages, whether orally or topically administered, should be started at lower levels and brought up gradually. Magnesium chloride and Vitamin C have similar toxicity profiles with overdose from both resulting at worst usually in diarrhea unless the kidneys are seriously compromised.

Soak the whole body or just the feet in bath water for 20-30 minutes, at a temperature of about 108 degrees The most effective protocol for this therapy is to begin with a daily body or foot bath every day for the first 7 days, (starting at lighter concentrations and building up) then continue with a maintenance program of 2-3 times a week for 6-8 weeks or longer. Sensitive care must be taken especially with children as to dose levels, water temperature and magnesium concentrations. Muscle spasms might occur on rare occasions if one forgets to get out of the tub so it is necessary to supervise children and the length of time they remain soaking in magnesium chloride. All strong reactions like redness in local areas to diarrhea or even muscle spasms are indications to reduce concentration.

Fick's Law of Membrane Permeability says that the amount of any solute (magnesium) that will be absorbed is directly dependent upon the **area** of contact, the **concentration** of the solution and the **time that** the solute is in contact with the membrane.[iv] Thus one has to feel one's way to appropriate dosage both in initial self-treatment phases and for long

term maintenance dosage levels. A particularly strong sensation is realized when one uses magnesium chloride in the mucous membranes and it is especially useful as a mouthwash to strengthen teeth and revitalize the gums. Spraying three or four sprays full or half strength several times a day is appropriate.

There are no numbers available for how many milligrams are absorbed through the skin but it is generally acknowledged by all who have been involved with transdermal application of magnesium chloride that topical is actually the best avenue of entrance into the body. Dr. Norm Shealy has gone as far as applying for a patent for the specific use of transdermal magnesium therapy to raise DHEA hormone levels, something he claims oral and intravenous methods do not seem to do.

Magnesium Oil from the sea weighs 12 pounds per gallon. Distilled water weighs only 8 pounds.[v] Thus we can calculate in a straight away manner how much elemental magnesium is in each gallon and ounce. **Each spray of magnesium chloride oil contains approximately 18 milligrams of elemental magnesium.** An ounce would contain just over 3,300 mg. Five sprays in a glass of water would be almost 100 milligrams and one could probably count on the majority of that being absorbed. If two ounces are put into a bath we might have over six thousand milligrams floating around in the water but only a fraction of that will be absorbed. But absorbed it will be for almost everyone experiences the effect and Dr. Shealy has done studies showing the rising magnesium levels. Spraying it on the body will yield a higher magnesium concentration on the skin so an ounce used that way will result in more magnesium absorbed than two ounces used in a bath.

It should be understood that we need more research into studies on absorbability and bioavailability thru the skin, and the necessity to use this chapter as a general guideline only. Possibly the best approach is a combination approach alternating with baths, direct spraying on the body, and oral intake besides relying on one's foods. When one uses all three approaches together it is easier to bring ones magnesium levels up in a month or two to healthy levels and from there one has only to maintain appropriate daily intake.

Food Sources of Magnesium

Tofu, firm, 1/2 cup 118mg
 Chili with beans, 1 cup 115mg
 Wheat germ, toasted, 1/4 cup 90mg
 Halibut, baked, 3 ounces 78mg
 Swiss Chard, cooked, 1 cup 75mg
 Peanut, roasted, 1/4 cup 67mg
 Baked potato with skin, 1 medium 55mg
 Spinach, fresh, 1 cup 44mg

— Source: USDA: Composition of Foods. USDA Handbook No. 8 Series. Washington, D.C., ARS, USDA, 1976-1986.

There is no specific information about oral magnesium chloride in liquid form but it is reasonably safe to assume it would be more absorbable than magnesium taurate. Liquid minerals are thought to be much more absorbable than tablets.

3-5 sprays of magnesium chloride in a glass of pure water is an excellent way to take magnesium internally. It assists digestion, counteracts excess acidity in the stomach, and delivers magnesium swiftly into the bloodstream for distribution to all the cells of the body.

*Daniel Reid
 Tao of Detoxification*

The taste of the solution is not very good (it has a bitter-saltish flavor) so a little of fruit juice (grapefruit, orange, lemon) can be added to the solution. Individuals with very sensitive taste buds may start using it in tiny amounts mixed with strongly flavoured food

and increase doses very gradually. Alternatively, drink it in one gulp dissolved in water while pinching your nose and quickly drink something pleasant afterwards.

Hydrated magnesium chloride (powder or crystal) contains about 120 mg of magnesium per gram or 600 mg per rounded teaspoon. It has a mildly laxative effect. As a good maintenance intake to remain healthy you may take about 400 mg or a level teaspoon daily in divided doses with meals. With raised blood pressure and symptoms of magnesium deficiency you may temporarily increase this to 2 teaspoons daily in divided doses under the supervision of your healthcare practitioner. This may already cause 'loose stools' in some. However, commonly with these conditions a rounded teaspoon daily or 600 mg may be just right. With low blood pressure additional calcium may be required together with about 300 mg of magnesium for a ratio of two parts of calcium to one part of magnesium.

Dr. Raul Vergin offers the following guidelines for oral intake of a 2.5% Magnesium Chloride hexahydrate ($MgCl_2 \cdot 6H_2O$) solution (i.e.: 25 grams or approximately one ounce of pure food grade powder in a liter of water). **The quantity of elemental magnesium contained in a 125 cc dose of the 2.5% solution is around 500 mg.**

Dosages are as follows:

Adults and children over 5 years old 125 cc
4 year old children 100 cc
3 year old children 80 cc
1-2 year old children 60 cc
Over 6 months old children 30 cc
Under 6 months old children 15 cc

125 milliliter = 4.2267528 ounce [US, liquid]
cc and ml are equivalent

Dr. Vergin indicates that “In acute diseases the dose is administered every 6 hours (every 3 hours the first two doses if the case is serious); then space every 8 hours and then 12 hours as improvement goes on. After recovery it's better going on with a dose every 12 hours for some days. As a preventive measure, and as a magnesium supplement, one dose a day can be taken indefinitely. Magnesium Chloride, even if it's an inorganic salt, is very well absorbed and it's a very good supplemental magnesium source.”

Daniel Reid says, “Using Magnesium Oil is the quickest and most convenient way to transmit magnesium chloride into the cells and tissues through the skin. 2-3 sprays under each armpit function as a highly effective deodorant, while at the same time transporting magnesium swiftly through the thin skin into the glands, lymph channels, and bloodstream, for distribution throughout the body. Spray it onto the back of the hand or the top of the feet any time of day or night for continuous magnesium absorption. Regardless of where you apply the spray on the body, once it penetrates the surface of the skin, the body transports it to whichever tissues need magnesium most.”

Dr. Norm Shealy recommends using 6-8 oz in each bath you take when you use his suggested magnesium chloride product, which is a food grade magnesium chloride. With the Magnesium Oil that we recommend using, the recommended amount per bath is only 2 oz. The cost and the amount you use is dependent on the concentration of the magnesium oil used. The magnesium oil we recommend is 30–35 percent Magnesium Chloride as opposed to 25 percent for Dr. Shealy's oil. It's the difference between using $MgCl_2$ evaporated from sea water and $MgCl_2 \cdot 6H_2O$ powder to make the oil.

The [magnesium oil](#) also comes in a [gel](#) (lower concentration for massage) form as well as a small bottle with a spray pump for easy application to the skin. All massage therapists should be using the gel, and even families, for it is always a good idea to combine a massage with a magnesium treatment. The oil, which is not an oil actually, (it just has an oily consistency), is also usable in massage applications. If we really appreciated how important it is to make sure our magnesium levels are satisfactory we would be spraying

our underarms with it everyday, spraying it on to different parts of our body and would never leave it out of our baths.

[i] Seelig, MS. Athletic stress, performance and magnesium in consequences of magnesium deficiency on the enhancement of stress reactions; preventive and therapeutic implications:a review. J Am Coll Nutr, vol.13, no. 5, pp. 429-446, 1994

[ii] Durlach, J. Magnesium in Clinical Practice, Libbey, London, 1988.

[iii] Fehlinger, R. Therapy with magnesium slats in neurological diseases. Magnes Bull, vol 12, pp. 35-42, 1990

[iv] Diffusion is the mechanism by which components of a mixture are transported around the mixture by means of random molecular (Brownian) motion (cf. permeation: the ability of a diffusant to pass through a body - dependent on both the diffusion coefficient, D , and the solubility coefficient, S , ie, permeability coefficient, $P = D.S$). Flynn et al. cite Berthalot as postulating, at the beginning of the nineteenth century, that the flow of mass by diffusion (ie, the flux), across a plane, was proportional to the concentration gradient of the diffusant across that plane. <http://www.initium.demon.co.uk/fick.htm>

[v] Magnesium chloride is an ionic compound because it has a metal, magnesium, and a nonmetal, chlorine. Magnesium will lose two electrons and form a +2 charge. Chlorine will gain one electron to form a chloride ion with a -1 charge. The formula for the compound is $MgCl_2$. To get the formula weight, find the atomic weights and add them together taking the subscripts into account. Magnesium is 24.3; chlorine is 35.5; so two would be 71.0. The total gives 95.3 as the formula weight.

More on this subject is available in the book Transdermal Magnesium Therapy. [Read More...](#)

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