MAPURIT® - in a new Outfit

by Dr. med. vet. Anita Kracke, Heilpraktiker
MAPURIT® is a product of the SANUM-Kehlbeck Company, which has existed for over 40 years. This unique recipe: a magnesium compound, mixed with vitamin E, and available in capsule form, has many positive actions and thus enjoys great popularity with therapists.

Since January 1, 2016, MAPURIT® exists in a slightly altered composition. The magnesium oxide content of each capsule increased to 150 mg (hitherto it was 125 mg), while only 50 IU of alpha-Tocopherol (hitherto 100 IU) are contained. This new composition allows for an even better supply of magnesium, which is especially significant, in view of the major importance of the element magnesium for the human metabolism.

Magnesium – a Powerful Element

Magnesium is one of the earth-alkaline metals and in the periodic table it is found in the second main group. This combustible light metal cannot be found in its pure state in nature, because it reacts very easily and immediately forms compounds with carbonic acid (carbonate), silicic acid (silicate), sulphuric acid (sulphate) and so on. In the form of such compounds it forms a large part of the Earth’s crust. The mineral known as dolomite, for instance, consists of magnesium carbonate and makes up whole mountain ranges. In living nature magnesium occurs primarily as the central atom in chlorophyll, that is found in green plants. Thus this chlorophyll, amongst other substances, constitutes one of the most important sources for the magnesium supply of other living creatures. Plants are able to store magnesium in their seeds and fruits. Herbivores are therefore especially well supplied, whether they eat the green leaves or other parts of the plant. Those who eat a mixed diet, or pure carnivores have to rely on accessing this metal on the circuitous route via their prey.

Natural Sources of Magnesium

It should be clear from the above what are the natural sources of magnesium for humans: nuts, seeds, cereals (wholewheat, brown rice), cocoa, green leafy vegetables such as cabbage varieties, especially kale, spinach, winter purslane (leafy vegetable growing almost wild), mangolds, fruits of the Papilionaceae family (peas, beans, lentils, soya), fruits and berries, meat, fish, dairy products. The magnesium content of the above-mentioned foods reduces in their order of appearance.

Magnesium in the Human Body

Within the human body there are about 20-30 g of magnesium, and this is stored mainly in the bones, but it also occurs in internal organs (the liver) and the musculature. Compared with calcium this is relatively little, since ca. 1,000 g of calcium is present – mostly in the bones. Nevertheless, precisely the compound of calcium and magnesium, together with phosphorus, is a really important factor in healthy bones. Without magnesium optimum construction and alteration of bones is impossible. On the cell membrane these two
are to some extent antagonists, because they are responsible for maintaining the cell membrane potential, alongside sodium and potassium. Whereas calcium is pumped out of the cell by ionic pumps, for optimum cell function the magnesium must get into the cell. Along with potassium it is the second most important cation in the cell. In all the metabolic processes in which phosphorylated substrates such as e.g. ATP, ADP and AMP play a part, magnesium is required as an enzyme activator (1). In the event of a deficiency, therefore, the body’s energy supply grinds to a halt. The regeneration of cells, protein synthesis, and the preparation of nucleic acids are Mg-dependent. Thus an adequate supply of magnesium is needed for the regulation of degenerative processes just as much as of unbridled cell growth and derailments in the metabolism. In the final analysis this is also connected to the fact that ca. 300 enzymes are magnesium-dependent. Controlled activity of the muscles is only possible if an immoderate influx of calcium ions into the muscle cells is prevented by sufficient quantities of magnesium, for both occupy the same receptors on the contractile elements. On the surface of nerve-cells again the polarisation of the membranes is required for a correct transmission of signals. An influx of calcium into the cells causes a release of acetylcholine. Magnesium regulates this process.

A similar situation exists when stress increases. Amongst other things, adrenalin and noradrenalin are released, and these support a lipolysis for the preparation of energy. The fatty acids thus released enter into a bonding with magnesium, they saponify and thus reduce the level of available magnesium. However, it is precisely magnesium that is required in order to overcome stress and relax, and the result is that the stress becomes more acute. Long-term stress can result in acute hearing loss, because of a spasm of the vessels in the inner ear. Magnesium stabilises the mast cells, thus preventing increased excretion of histamine and other inflammation mediators. Thus magnesium is particularly important for people with allergies.

These are the most important functions of magnesium, as summarised according to Schmidt (2):

- Antagonism towards calcium, resulting in a reduction in expenditure of energy and in the tone of vessels
- Generation and provision of energy
- Activation of enzymes
- Conduction of excitation to nerves and muscles
- Arterial vasodilation
- Building up of bones and teeth
- Biosynthesis of nucleic and amino-acids, construction of proteins and glucose, fat-splitting
- Improvement of blood fluidity

**Magnesium Requirement in Humans**

The amount of magnesium required by the human body is dependent on age and sex. Thus children require between 80 and 250 mg/day, teenagers and adults 310 (females) to 400 mg (males), whereas nursing mothers have an average requirement of 390 mg/day (1, 2). Organic magnesium compounds vary in their ease of absorption and utilisation e.g. sulphate, gluconate and phytate do not have a good uptake, unlike lactate, fumarate, orotate, phosphate, taurinate and the inorganic chloride magnesium compounds.

**The Human Magnesium Supply**

According to studies carried out in several European countries (especially France and Austria), as well as in the United States, we must proceed on the assumption that between 50 and 70% of the population are not optimally supplied with magnesium. In residential homes, however, even ca. 35% of residents were found to have a deficiency. Frequently such a deficiency goes hand-in-hand with other disorders in the electrolyte balance.

**Causes of a Magnesium deficiency and Indications for Supplementation**

There are various causes of deficiencies. A less balanced diet, with regard to its vegetable content, and a high proportion of ready-cooked meals can result
in a deficiency. Because of heavy over-fertilisation of pasture land with potassium and calcium, ruminants may experience a deficiency, which is then passed on in the food that they provide. An increase in physical movement, and growth spurts, require a higher amount of magnesium. We have already referred to stress and the possibility of a saponification of magnesium in the intestinal tract. Heavy alcohol consumption increases the requirement for magnesium, because the reabsorption by the kidneys ceases. The same is to be expected if medicines have to be taken that interact with this light metal.

The ratio between calcium and magnesium uptake in the body should be 3:1. If too much calcium is taken in or consumed, imbalances can occur between these two, with magnesium coming off worse. In that case the tubular reabsorption of magnesium by the kidneys is also disordered, and that aggravates the deficiency.

**Clinical Symptoms of a Magnesium Deficiency**

Here are certain typical signs of a deficiency in the supply of magnesium (3):

- Spasms of the muscles and vessels, especially in the area of the lower limbs (cramps in the calves)
- Migraines
- Hyperkinetic syndrome
- Altered sensations, such as numbness, or tingling sensa
- Heart symptoms: tachycardia, sensations of pressure, irregular beat and over-excitement
- Premenstrual syndrome (PMT/PMS)
- Bouts of depression (4)

According to Eby, George A. and Eby, Karen L. of the George Eby Research Institute, 14909-C, Fitzhugh Road, Austin, Texas 78736, USA (5), we may assume that ca. 60% of patients suffering from a clinically manifest depression will not respond to the usual drugs. In the cerebral fluid of such people with treatment-resistant depression and at risk of committing suicide, who could not be adequately helped by orthodox medicine, the magnesium levels were low. When they were given a magnesium supplement, in the overwhelming majority of cases, success was rapidly achieved with the treatment mentioned. The magnesium supplementation, no matter whether oral or intravenous, was successful and devoid of side-effects. In Frau Kemmling’s essay (4) many biochemical causes of the interaction of magnesium with other ions, e.g. calcium, and neurotransmitters are discussed. To some extent these are still hypotheses; however, they appear very plausible.

We are assuming that a deficiency of the light metal magnesium favours coronary infarction and acute hearing loss. According to a recent study from Mexico (6) it seems that, as well as the chronic diseases such as Alzheimer’s, hypertension and diabetes mellitus type 2 in children, there is also a close connection between magnesium deficiency and high blood pressure. The researchers defined magnesium deficiency in terms of blood levels of lower than 1.8 mg/dl. They determined that, depending on age, a pre-stage of hypertension was present in 12.2% of the younger children and in 13.9% of the older ones, and real hypertension already existed in 6.4% and 10.6% of the children they examined. The blood samples were taken in the mornings, after the children had fasted for 8-10 hours. This resulted in a significant connection with the children’s magnesium supply. In the smaller children, 27.3% of those with pre-hypertension and 45.6% of those with hypertension had a magnesium deficiency. In the older children, 36% of those with pre-hypertension and 49.6% of those with hypertension had insufficient magnesium. These figures vividly document the influence of magnesium on the blood pressure and the striking significance of such a deficiency on the development of high blood pressure in smaller children in particular.

For children and elderly people, especially post-menopausal women, it is recommended (7) that for optimum supply they additionally supplement with alkaline salts (e.g. for building up and maintaining the bones), by taking ALKALA® “S”. Alongside magnesium, this mineral mixture also contains calcium and potassium, as citrates.
MAPURIT®

For prescribers the preparation known as MAPURIT® continues to be available, providing the tried and tested combination of magnesium and vitamin E (8,9).

Because one capsule contains 150 mg of magnesium as magnesium oxide, the daily requirement can be covered by taking one capsule twice a day. Vitamin E in the form of D-alpha-Tocopheryl acid succinates (alpha-Tocopherol), as an antioxidant, further considerably enhances the action of the magnesium, e.g. in connection with allergic illnesses. One capsule contains 50 IU of vitamin E. It is recommended that the capsules are taken with meals.

Because of the high degree of similarity in the importance of zinc and magnesium for the metabolism, a daily dose of one capsule of ZINC + BIOTIN (from the Biofrid company) half an hour before the evening meal should not be overlooked. This guarantees an optimum working of the enzymes in the body. Of course, supplementation with such substances cannot be a substitute for an adequate diet, but merely support it. It is hardly possible to overdose with magnesium. Nonetheless, should too much be taken, mild attacks of diarrhoea may occur. These will cease immediately if the supplement is discontinued.

MAPURIT® is available in packs of 40 or 100 capsules.

Bibliography:

(1) Burgersteins Handbuch der Nährstoffe, [= Burgsteiner’s Handbook of Nutrients], Haug Verlag, ISBN: 3-8304-2065-X


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