



# Why Microscopic Colitis Patients Need Magnesium by Wayne Persky

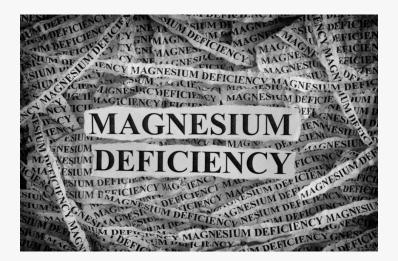
Magnesium is so important to our body's well-being that it would be impossible to cover all of the reasons in the limited space available in a newsletter article, so we'll only cover the most important of those reasons, from an MC patient's viewpoint, in this article. Virtually all newly diagnosed MC patients don't consider magnesium deficiency to be one of their problems, because their gastroenterologists never even mention that possibility in their follow-up discussions. And an Internet search for methods of treating this disease will turn up precious few hospital sites that recommend magnesium supplements for MC patients. In fact, magnesium deficiency in general, is rarely considered to be a significant problem among medical practitioners, because traditionally, they haven't been able to find it, and because of that, they usually don't even bother to look for it.

#### Doctors have traditionally ordered the wrong test for magnesium.

They typically order a serum magnesium test, and the serum magnesium level is automatically regulated by the body within a narrow range. Consequently, a serum magnesium test will virtually always show a normal magnesium level unless the entire body is depleted of magnesium. Automatic regulation is necessary because of the fact that the blood magnesium level is vital for proper coronary function, and if the magnesium blood level is too high or too low, serious cardiovascular issues can occur, up to, and including cardiac arrest. The proper test that doctors should order is the red blood cell (RBC) magnesium test.

But despite the lack of respect for magnesium deficiency in the hallowed halls of medicine, out in the real world, it's a major problem, especially for IBD patients. Some authorities estimate that at least 70% of the general population is magnesium deficient. And remember, the general

population is mostly comprised of otherwise, healthy (presumably) individuals.



Magnesium deficiency may be one of the reasons why some of us developed MC in the

#### first place.

Magnesium deficiency is associated with every disease known to medical science. Therefore, either every disease known to medical science depletes magnesium, or magnesium deficiency significantly increases the risk of developing every known disease. The latter option is obviously more likely to be true.

## Active MC depletes magnesium.

Unlike most nutrients (which are absorbed in the small intestine), magnesium is primarily absorbed in the terminal ileum and the colon. Note that the inflammation associated with MC is found primarily in the terminal ileum and the colon, thereby greatly increasing the probability that magnesium may be malabsorbed when the disease is active. And in addition, diarrhea is initiated in the small intestine by the infusion of copious amounts of sodium, and this results in large amounts of magnesium, and other vital electrolytes (especially potassium) being lost as the diarrhea sweeps through the colon. This is the primary reason why most MC patients who wind up in the emergency department because of dehydration, are diagnosed with potassium deficiency. They're never diagnosed with magnesium deficiency, because as mentioned above, magnesium deficiency is not on most doctors' radar.

The most popular medical treatment for MC (budesonide) also depletes magnesium. Unfortunately, all corticosteroids deplete magnesium, as do many other medications, and many other items in our daily lives, including our morning coffee, tea, carbonated drinks, and many sweet foods. Proton Pump Inhibitors (PPIs), for example, deplete magnesium so severely that in 2011, the FDA issued a special warning about this risk. According to their warning, the effect is so strong, that even taking a magnesium supplement may not counteract the problem — in about 25% of cases, discontinuing the PPI may be necessary before magnesium supplements will again become effective.

#### Calcium supplements will not prevent osteoporosis,

without adequate magnesium reserves. A deficiency of either vitamin D, or magnesium, or both, is the main cause of osteoporosis. Virtually no one needs calcium supplements. There is more than enough calcium in our diets, but we have to have adequate vitamin D and magnesium reserves, in order to absorb that calcium and utilize it to build strong bones. Without adequate vitamin D and magnesium, osteoporosis will develop, no matter how much supplemental calcium is ingested.

#### Why is this true?

The active form of vitamin D is needed to enable the absorption of calcium from our intestines into our bloodstream, and all the vitamin D in our food and supplements is in an inactive form until it is activated by a methylation process that requires adequate magnesium reserves. Unless adequate activated vitamin D is circulating in the blood, neither the calcium or the magnesium in our food, nor supplements will be properly absorbed. And adequate magnesium reserves are required to coactivate insulin, so that calcium circulating in our blood can be transported into the cells of our bones and other organs in our body, where it's needed.

In a similar fashion, magnesium coactivates over 300 chemical conversion processes in our body every day. Our bodies cannot function normally if these processes are compromised because of inadequate magnesium reserves.

Our immune system requires activated vitamin D for proper functioning. And as noted above, adequate magnesium is required to activate vitamin D. Remember that our immune system is not only in charge of preventing diseases and infections, but it's also in charge of healing damaged cells and other trauma to which our bodies are subjected. Therefore, optimal intestinal healing from the damage caused by the inflammation associated with MC, requires adequate levels of both vitamin D and magnesium.

#### Our digestive system requires magnesium.

Adequate magnesium is necessary for the digestive system to function properly. Without adequate magnesium, the pyloric sphincter between the stomach and duodenum tends to clench and spasm, so that chyme (partially digested food) may not be allowed to properly pass from the stomach to the duodenum, resulting in nausea, a feeling of fullness, gas, bloating, and compromised digestion. Magnesium helps to relax the muscles in the pyloric sphincter so that it can function normally.

This problem, known as gastroparesis, is very common among diabetics. Note, however, that research shows that most diabetic patients have a magnesium deficiency. Not only is magnesium deficiency associated with the pathogenesis of diabetes, but it's also associated with many of the symptoms that are claimed to be caused by diabetes, when in fact,

they're simply symptoms of magnesium deficiency.



#### Magnesium deficiency often causes leg cramps.

Magnesium relaxes our muscles, and prevents muscle spasms such as leg cramps in the middle of the night, and magnesium helps our nervous system to perform normally. Getting good quality sleep is a problem, especially when MC is active, but magnesium helps to relax the mind and the entire body, so that getting to sleep and staying asleep, tends to be much easier.

#### Magnesium deficiency is even associated with Alzheimer's disease.

Last, but certainly not least, recent research shows that adequate magnesium in the diet helps to prevent the development of old age dementia and Alzheimer's disease. While this doesn't imply that adequate magnesium reserves will absolutely prevent Alzheimer's, it certainly shows that increased magnesium intake definitely lowers our risk of developing old age dementia, or Alzheimer's disease.

#### There are other reasons for increasing our magnesium intake,

of course, but those listed above are some of the most important. These issues tend to have the greatest effect on our quality of life, general well-being, and our long-term health.



## Magnesium oral supplements

There are many different chemical compounds of magnesium that are sold as supplements. These include magnesium oxide, magnesium citrate, magnesium chloride, magnesium hydroxide (Milk of Magnesia), magnesium sulfate (Epsom salt), magnesium carbonate, magnesium orotate, magnesium gluconate, magnesium threonate, and magnesium glycinate. Different types of magnesium compounds have different characteristics. Some are easier to absorb than others, and some are more likely to cause diarrhea.

# One of the best oral supplements for resolving a magnesium deficiency is magnesium

glycinate,

because it's more easily absorbed than other compounds, and most MC patients find that it's less likely to cause diarrhea than the other options. Magnesium citrate is also easily absorbed, but is more likely to cause diarrhea, than magnesium glycinate. That possibly makes magnesium citrate a better choice for those who have constipation predominant MC.

The least beneficial form of magnesium supplement is magnesium oxide. Magnesium oxide is used as the sole source of magnesium in virtually all multivitamins. And most of the cheaper oral magnesium supplements contain all, or mostly magnesium oxide, as their magnesium source. As is always the case with vitamins, and most other items, for that matter, "You get what you pay for" The human digestive system is only capable of absorbing 2 or 3% of the magnesium in magnesium oxide. The rest remains in our intestines, where it acts as a laxative. Unless we're looking for a laxative, we are much better off avoiding magnesium supplements that contain magnesium oxide.

# I had the misfortune of unintentionally proving that, 8 or 9 years ago.

I was taking daily doses of 300 to 400 mg of a private label brand of magnesium glycinate. I had selected the product because it was offered at a lower price than competing products. When I began developing magnesium deficiency symptoms, I searched for some other cause, since I was already taking plenty magnesium. But I was unable to locate another cause, and eventually, I even began to have kidney stone problems, something that had never happened to me before. A few months later, I began to wake up in the wee hours of the morning with tachycardia, shallow breathing, feelings of anxiety, and as I found out when I checked my blood pressure on one of those occasions, my systolic blood pressure had dropped into the low 80s. I was obviously having a serious reaction. And I was awakened by this problem almost every night. After I ate breakfast, my symptoms would fade away. When I would relate my symptoms to my doctors, all I got was a blank stare, as if they thought I was nuts.

# A trip to the emergency department was a waste of time.

One morning my symptoms were so bad, that I couldn't force my breakfast down, so I went to the emergency department. But even that trip appeared to be totally unhelpful — the doctor told me that my blood test results look fine.

# Fortunately, I decided to check my online test results.

Bingo! My serum magnesium level was flagged by the lab as low. I switched to a name brand of magnesium glycinate (unbuffered), and increased my dose, in order to make up for my deficiency, and my symptoms all disappeared within a couple of days. Why didn't the emergency department doctor catch that flagged result? He probably noticed it, but as I've always experienced, he presumably considered it to be irrelevant, because magnesium deficiency simply isn't on doctors' radar.

An email notice confirmed the reason for the problem.

By coincidence, a few days later, I received an email notifying me of a class-action lawsuit against the company from which I had bought the magnesium glycinate that caused the problem. I had noticed that the magnesium supplement was labeled as "buffered", but I assumed that was a good thing, to make it easier on the digestive system. But as the email pointed out, the magnesium glycinate supplement was "buffered" with 50% magnesium oxide. This provided the final piece of the puzzle.



For those who can't tolerate oral magnesium while recovering, transdermal magnesium supplementation can be used. Soaking for 15 or 20 minutes in bathwater in which a cup of Epsom salts has been dissolved, or soaking one's feet in a pan of water saturated with Epsom salts, can be used to help raise magnesium levels. If preferred, magnesium oils, and magnesium lotions are available for rubbing on arms and legs to provide magnesium supplementation.

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