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## Vitamins, Minerals and MC

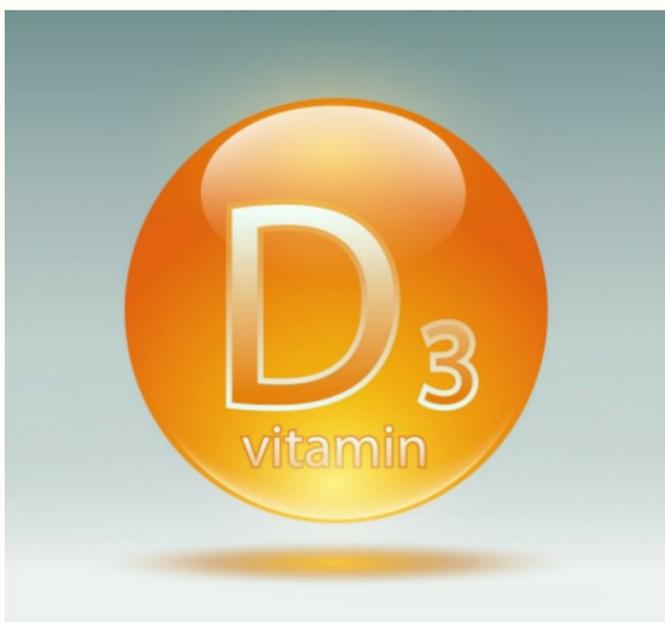
Should I take vitamin supplements while recovering from MC? Almost everyone who has MC either asks that question or wonders about it, especially when they learn that MC usually causes malabsorption of certain vitamins and minerals. But we know from real-world experience that early on, as a general rule, the simpler the diet, the faster the recovery. We know that in some cases, vitamin supplements may contain ingredients that cause many MC patients to react, and that in itself, can prevent us from reaching remission. So how do we decide what to do about vitamins and minerals if we suspect that we may not be getting enough from our limited diet?

First we have to realize that we're not likely to be able to maintain a balanced diet during recovery, no matter how hard we try. Next we need to realize that even if we were somehow successful in being able to select a recovery diet that included all our nutritional needs, that's probably a moot point anyway, because we're not going to be able to absorb the nutrients contained in that

food at anywhere near a normal level as long as our disease is active. So it could be argued that in most cases, nutrition should not even be considered until we're in remission. We need to stop the inflammation and heal our digestive system as quickly as possible. And then we can start worrying about nutrition. Because after some healing, we'll be able to do a much better job of absorbing the nutrients in our food.

But what if we are seriously deficient in certain vitamins or minerals? Could that affect our ability to heal? Yes it could. Our immune system is in charge of healing. Published research verifies that certain vitamins and minerals are so important to the immune system that they can speed up the healing process. And conversely, a deficiency can slow down the healing process. If the deficiency is severe enough, healing might be so compromised that it is not even possible.

And this brings up an interesting point, because the reason that microscopic colitis exists in the first place is because the inflammation that causes it becomes chronic. Our immune system is unable to overcome it. And the reason why the inflammation becomes chronic is because the epithelial cells in the intestines are unable to heal. Why are they unable to heal? Good question. Medical science doesn't seem to know the answer. We may not be medical scientists, but we don't have to ponder this quandary very long to recognize that if we were able to promote healing, microscopic colitis would be little more than a temporary tummy ache. Interestingly, most MC patients either are, or soon become deficient in vitamin D and magnesium. So let's look at the effect that this might have on our immune system.



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## Vitamin D and Magnesium

Research shows that vitamin D can be very beneficial for IBDs like Crohn's disease.

What is the evidence that vitamin D plays an important role in managing IBDs? Several scientific studies have shown that Crohn's disease patients

have a lower level of inflammation, fewer symptoms and better quality of life as their vitamin D level increases. They also didn't have any indicators of leaky gut, compared with those patients with low levels of vitamin D. Another study showed that patients taking a 10,000 IU daily dose of vitamin D were very resistant to relapse compared to patients who were only taking 1000 IU. None of the patients taking the higher dose suffered a relapse in the year-long study, while 38% of those in the low dose group had a relapse of symptoms.

Presumably the better outcome was due to improved control of inflammation and intestinal permeability. Unfortunately there doesn't seem to be any research in this area specifically directed toward MC. But inflammation and increased intestinal permeability are also associated with MC, and surely vitamin D has similar beneficial effects as that found in other IBDs.

### **What is a good level of vitamin D?**

Based on research data for Crohn's disease patients, it appears that serum 25-hydroxyvitamin D [25(OH)D] levels above 40 ng/ml (100 nmol/L) might be beneficial for all IBD patients. Many patients with an IBD have difficulty absorbing nutrients and are often deficient in vitamin D. Testing your vitamin D level can be done by getting your doctor to order the blood test. If that is difficult, you can get an in-home test that doesn't need a doctor's order through the Vitamin D Council for \$58. The Vitamin D Council recommends 5000 IU/day, followed by periodic re-testing and adjustment of the dose. More information can be found on the Vitamin D Council website <https://www.vitamindcouncil.org/> and Wayne Persky's book, "Vitamin D and Autoimmune Disease", available on Amazon. Magnesium should be supplemented whenever vitamin D is taken.

Magnesium, vitamin D, calcium, and insulin all work together, and the proper balance must be maintained. For example, if the body doesn't have sufficient magnesium reserves, taking vitamin D can create a magnesium deficiency. Here is how that works. The body will utilize the additional vitamin D to absorb extra calcium from the diet. Magnesium is required along with insulin to transport the calcium from the blood stream to its final destination in bone cells and other organs. If magnesium in the diet is inadequate to meet this demand, the needed magnesium is taken from body reserves like muscles. When that happens the result is usually leg and foot cramps, or "restless leg syndrome", especially at night.

The calcium level in the bloodstream must be carefully regulated to maintain such important functions as normal heartbeat. If there is excessive calcium, usually caused by taking too much calcium supplement, more magnesium and insulin is needed to purge the excess calcium from the blood. Like described above, the needed magnesium is again taken from body reserves like muscles. So because of this inter-dependency, magnesium should be supplemented whenever vitamin D is taken.

### **What sort of magnesium supplement should I take, and how much?**

Magnesium can be found in several different forms, and some have more of a laxative effect than others. The most common form (and cheapest) found in many multivitamins and magnesium supplements, is magnesium oxide. It is poorly absorbed, most likely to cause diarrhea, and should obviously be avoided. The form that appears to be best tolerated is magnesium glycinate (chelated magnesium). It is readily absorbed and seems to be the least likely

to cause diarrhea. Be careful not to get "buffered" magnesium glycinate, because it is combined with the bad magnesium oxide, making it appear cheaper. Always check labels! For those who are very sensitive and need to avoid any extra ingested magnesium, topical magnesium in the form of Epsom salt (magnesium sulfate) foot or bath soaks, or sprays of magnesium oil (magnesium chloride) work well. The optimal amount of magnesium can vary based on how well individuals absorb it, and how sensitive their digestive system. But a general guideline is 400 to 600 mg per day. More information on this can be found on the Microscopic Colitis Forum and in Wayne's books.

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### B-12 and folic acid (B-9)

Vitamin B-12 reserves are usually stored by the liver for periods of up to about five years. Consequently the malabsorption problem associated with MC is not likely to cause a B-12 deficiency unless the disease is not controlled promptly and clinical symptoms continue for more than about five years. Of course there are exceptions, such

as patients who are following or who have followed a vegetarian or vegan diet in the near past. Most plants contain very little vitamin B-12, so that anyone following a plant-based diet may be vitamin B-12 deficient, unless they have made a practice of routinely taking a vitamin B-12 supplement.

Folic acid is needed in order for vitamin B-12 to be properly utilized in the body, so if a vitamin B-12 supplement is taken, then a folate supplement should usually be taken also, to make sure that an adequate amount of folic acid is available to facilitate the use of a vitamin B-12 supplement.

About half the population may have methylation issues because of a genetic mutation. Their B test results will usually be high-normal or above range, because their body is unable to properly convert the inactive forms of vitamins into the active forms so that their body can use them for various chemical transformations. Those individuals often benefit from taking the active forms of the "B" vitamins.

In the case of vitamin B-12, the form usually used in the cheaper vitamins is inactive and it's known as cyanocobalamin. Methylcobalamin is an active form which is much more readily absorbed, and this is the form that MC patients should use to get around their intestinal malabsorption problem. Methylcobalamin (combined with folic acid) is available in sublingual form, designed to be dissolved under the tongue, where it is absorbed directly into

the mucosal tissues of the mouth.

### **What if my vitamin B-12 tests out-of-range?**

Some people who take a vitamin B-12 supplement because they think their level may be low, find that when tested, their vitamin B-12 level will test surprisingly high. This is because like most vitamins, B-12 is present in a number of different forms in the body and supplementation is likely to distort the balance between the various forms. It's necessary to stop taking a B-12 supplement and wait about ten days before having a blood draw performed for a Vitamin B-12 test. This will allow the various forms of the vitamin to reach homeostasis (equilibrium), and the blood test result will be more accurate.

### **Vitamin B-6**

For individuals who have methylation issues, taking the active form of vitamin B-6 may be beneficial. Vitamin B-6 is also known as pyridoxal 5'-phosphate (P5P). At least a hundred chemical processes in the body depend on it. IBDs tend to deplete DAO levels. Since DAO enzyme is used by the body to purge excess histamine, any reduction in normal levels may cause potential problems due to excess histamine. One of the many uses of P5P is to promote the production of diamine oxidase (DAO) enzyme. So P5P supplementation may be beneficial in cases where a DAO deficiency develops. Other than B-12 and B-6, normally the other "B" vitamins do not tend to be deficient for MC patients.

### **Vitamin B-2 (Riboflavin)**

A riboflavin deficiency is not recognized by the mainstream medical community as being associated with MC or any other IBD. However, vitamin B-2 is necessary in order for the human body to be able to utilize the energy in fats (and other nutrients). Riboflavin is used by the digestive system for metabolizing the energy held in proteins, fats, and carbs and converting it into a form of energy that the body can use.

A vitamin B-2 deficiency is quite common with anorexia and alcoholism. The reason why a vitamin B-2 deficiency might develop with anorexia is rather obvious, due to the nature of the condition, which interferes with the utilization of many nutrients in the diet. But the association with alcoholism is not as obvious. The common link with MC is intestinal permeability. Alcohol has been designated for years as the number one cause of leaky gut.

Perhaps a vitamin B-2 deficiency is at least partially responsible for the overwhelming fatigue and lack of energy that are so often associated with MC. And maybe a vitamin B-2 deficiency is at least partially to blame for the persistence of fatigue symptoms as much as a couple of years past the achievement of remission, in many cases.

Migraines are often associated with MC flares. Research has revealed that migraines are often associated with deficiencies in magnesium, vitamin D, co-

enzyme Q10, and vitamin B-2.



## Be Careful!

We all wish that there were a magic supplement that would relieve our symptoms and make us feel normal again. Any search on the internet will bring glowing testimonials about the latest fad, and the temptation is to give it a try when desperate. But unfortunately, there aren't any shortcuts, and caution is the best approach. We each are unique in how our recovery from MC progresses, and in our responses to various supplements. Just about any supplement you can think of has been tried by someone on the MC Forum, and a search there will often turn up the experiences of members and give you a place to start your evaluations.

The take home message from the combined experience of Forum members is to minimize any supplements beyond the important vitamin D, magnesium, and the B vitamins, as we discussed earlier in the newsletter. This is especially important early in the healing process. As you gain control of symptoms, there is the urge to do more to correct nutritional deficiencies or help with



## Healing Bone Broth

by Gabes Ryan

Homemade bone broth is a cheap gut healing powerforce! It has 75% of the amino acids your body needs and has gut healing essentials like collagen and gelatin, all in an easy to digest form and in a perfect combination of elements that optimize each other. When starting on a gut healing journey it is best to keep the bone broth really basic, with no herbs or vegetables. Later in the healing process you can experiment with adding them.

### What sort of bones?

Use bones from safe protein sources. If roasting meats for meals, buy cuts on the bone, and keep the bones after eating the roast meat. Then freeze until you are making the broth to minimize histamine production when meat is kept in the refrigerator.

If having any poultry such as chicken, turkey, or duck, freeze the carcass until use. Chicken feet also

troublesome symptoms. Caution is the watchword, so start slowly with any supplements you might want to test. So let's take a closer look at some of the popular categories of supplements.

### **Probiotics**

There is a lot of interest right now in the microbiome, and the role of the proper balance of microbes in the gut for intestinal health. But what that balance might be, and how to achieve it are far from clear. The microbiome of each person is unique and responds quickly to any changes in environment. As you add more items to your diet, your microbiome will change along with this. Microbes in probiotics are grown in culture, and have a short lifetime in the gut once swallowed, as they are unable to attach to the gut wall and stick around. Their usefulness after antibiotics is fairly well established, but most people with MC have not found them to be helpful. If you want to try them, be sure and check to see that the cultures don't contain any of your food sensitivities.

### **Digestive Enzymes**

With any colitis, the damage to the intestines can compromise the production of digestive enzymes. So it seems to make sense to try adding those enzymes to promote better digestion. However, some people have had a very bad reaction to digestive enzymes, while others have seen some modest benefit. So a better approach might be to make foods as easy to digest as possible, by avoiding foods like raw fruits and vegetable, and concentrating on

make great bone broth.

Lamb shanks are excellent to use for those sensitive to chicken or beef. Butchers, Whole Foods, and online retailers sell these.

For the best broth, get bones that have a joint within them such as feet, wings, or knee.

While the good quality bones from organic, free-range or grass-fed animals may appear at first to be expensive, they are really a great value especially when you consider the cost per serving. Then add the goodness contained within the bone broth with the various amino acids, minerals, and other nutrients it contains that are in a readily absorbable form.

Commercially prepared products typically contain additional ingredients besides the bones and salt, in order to add to the flavor. Many brands include rosemary extract, which has soy. So in order to have a safe, bland, minimally processed bone broth, make it yourself!

### **What preparation is required?**

Defrost any frozen bones.

For added flavor, roast fresh bones from non-poultry sources such as beef or lamb. Simply bake bones or meaty bones for 45 minutes at 425F (220C).

### **How do I cook a basic and bland bone broth?**

All you need is large pot, water, a small handful of salt (pure salt no

well-cooked items.

### **Fiber**

There are two types of fiber, soluble and insoluble. Fiber is supposed to promote better digestion and help with constipation. Some people with MC have constipation or alternating diarrhea and constipation as symptoms. Avoid insoluble fiber, because it acts as sandpaper in the intestines. The scraping of insoluble fiber damages the mucus producing cells lining the intestine and it is this increased mucus that has the lubricating affect. But it promotes more inflammation and does more harm than good. Soluble fiber is different and sometimes can help. But for some it worsens symptoms, so you must be careful.



Amazon Smile offers a wonderful way to support the Microscopic Colitis Foundation. Every time you shop with Amazon through Amazon Smile, a portion of your purchase will be donated to the charity of your choice at no cost to you.

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## **Inspirational Quotes**

The MC Forum allow users to attach a signature to each post. Some have chosen to use a quote or inspirational message that has personal meaning. Here are a few of them.

additives) and the bones.

The exact water quantity depends on how many bones you have and how big the pot is. The water to bone ratio is about the 1 lb bones per quart of water (0.5 kg per litre)

Slow boil for 2-3 hours. A slow boil is where the water is lightly bubbling. This is more than a simmer and less than full boil.

Start with small batch. Then if the broth is runny and doesn't set like jello/jelly when in the fridge, you can cook the next batch with more bones and less water.

If the smell of the bone broth cooking is too strong, you can use a grill or camping stove to do the cooking outdoors.

As soon as the broth is cool enough, transfer to freezer- safe containers. Skim off some of the fat, if desired. You can save the fat for roasting vegetables. Freeze broth in small portions enough for 1-2 days.

Following this process means minimal histamine.

### **What can I do with the bone broth?**

You can simply drink it. Use it to make soups, stews and casseroles. Try cooking vegetables in it, or substitute some of the water when cooking rice.

### **Variations**

There are lots of recipe ideas for bone broth that include other ingredients like herbs and

Be gentle with yourself. Be kind to yourself. You may not be perfect, but you are all you've got to work with. - Bhante Gunaratana

You'll never know how strong you are until being strong is the only choice you have.

There is a crack in everything. That's how the light gets in. - Leonard Cohen

Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time. - Thomas Edison

vegetables. For those with MC, it best to make the broth bland. Then when making soups or stews, you can add other items like 'safe' vegetables or 'safe' herbs. This way if ever you have set back with the healing journey, the bone broth in your freezer is in safest form and can be used.

One variation that can be done is using apple cider vinegar to help draw the minerals out of the bones. Only do this if you know that apple cider vinegar is tolerated.

**Remember: There are no failures - only learnings. The goal is 'progress not perfection'.**

