



THE CROHN'S SOLUTION

BY DR. SEAN GOLDEN

PART 4

THE BIG "FOUR":

NIACIN

Niacin Powerfully Promotes Intestinal Healing

We are going to start off this treatment protocol with one of the biggest players in intestinal healing: the common b-vitamin, niacin.

Niacin is most known for its ability to help reduce cardiovascular disease risk. It has been used for over 70 years to help lower “bad” LDL and raise “good” HDL.

While most people (including medical doctors) think that the cardiovascular benefit from niacin comes from its ability to influence LDL and HDL, this is not actually true.

The primary benefit from niacin with respect to cardiovascular disease comes from its ability to profoundly decrease chronic inflammation in the blood vessels!^{1,2,3,4}

Heart disease doesn't “come from” high cholesterol. High LDL and triglycerides are actually just markers that we use to assess what is going on in the vascular system. Heart disease actually comes from chronic inflammation in the blood vessels that lead to a large increase in damage (and subsequent repair) of the arteries and veins which increases the risk of plaque, improper blood vessel growth, poor blood flow, and cardiovascular disease.^{5,6}

The “Way” that Niacin Lowers Heart Disease is Linked to Crohn's and U.C.

It is precisely the way that niacin lowers cardiovascular disease risk that elucidates its beneficial effects on intestinal issues.

Niacin doesn't just reduce inflammation - it actually boost the “healing response” from the inflammation so that the inflammation can “resolve”!

Niacin acts on a particular receptor GPR109a (this receptor is incredibly important, and we'll come back to it later).

When niacin activates this receptor, a cascade of prostaglandins (i.e. mediators of inflammation) get released, and the one that gets released the most is PGD2.

While prostaglandins can be either pro- or anti-inflammatory, PGD2 is almost always anti-inflammatory. More importantly, PGD2 has repeatedly been shown to upregulate the “healing response” to inflammation, **which allows the inflammation to get “resolved” instead of turning into “chronic inflammation.”**^{7,8,9,10} (I am simplifying things a bit here, but this gets the gist across.)

Inflammation is Important

You see, just as in heart disease, we don't want to completely shut down inflammation, because inflammation is needed to signal that something is wrong and needs to be repaired.

In fact, the powerful anti-inflammatory medication called "Vioxx" was pulled from the market over a decade ago after up to 140,000 heart attacks were linked to the use of the medication. Similarly, naproxen (i.e. Aleve) use has been associated with a 14% increase risk of a heart attack.¹¹

Inflammation isn't something that is supposed to be powerfully suppressed. Inflammation is needed to signal that something is wrong and needs to be repaired. When we pharmacologically, powerfully block inflammation, we are asking for a host of side effects, as this disrupts major signaling responses in the body.

For example, cortisol (or synthetic corticosteroid medications) powerfully blocks almost all types of inflammation. However, it also blocks the ability to heal and repair whatever was wrong, and so they aren't very useful for long-term options.

Niacin Helps to Regulate Inflammation in a Very Positive Way

Niacin doesn't just suppress inflammation. It actually "boosts" the acute inflammatory signaling (**such as COX2**, the enzyme that Vioxx and other powerful anti-inflammatory medications completely block).^{12(see table 1)}

At the same time, through the generation of PDG2 and its metabolites, **niacin has powerful anti-inflammatory effects that helps the body beneficially deal with the inflammation present and resolve it sooner!**^{7,8,9,10}

Part of the reason why niacin helps with gut inflammation in such a positive way is that it actually activates the same receptor as butyrate, the GPR109A receptor.

Butyrate is a short chain fatty acid that is naturally produced in our large intestine from beneficial bacteria. Butyrate has long been known to have strong anti-inflammatory and immune-regulating actions on the colon, which has been shown to help with Crohn's and U.C.^{15,16} Niacin can act as "supplemental" butyrate in a sense, making up for possible low levels of naturally produced butyrate.

This makes niacin a very unique and powerful supplement in dealing with the chronic inflammation that comes with Crohn's and U.C!

Niacin Specifically Helps Crohn's and U.C. Patients to Get Into Remission

In a study titled "Niacin ameliorates ulcerative colitis via prostaglandin D2-mediated D prostanoid receptor 1 activation", researchers showed that niacin supplementation not only decreased the chronic inflammation of the colon in mice with U.C., but also reduced cell death in the intestines.

Importantly, "**treatment with niacin-containing retention enema effectively promoted UC clinical remission and mucosal healing in patients with moderately active disease.**"

This means that using an enema containing niacin greatly helped to promote remission from U.C.! (Based on the way that niacin works, the same should apply to Crohn's disease.)

While enemas might be a bit more powerful, oral niacin works as well, because the prostaglandin effects from niacin occur throughout the entire body.

How to Take Niacin

Niacin has been used safely for over 70 years. However, there are a few things to keep in mind when beginning niacin supplementation.

To support Crohn's and U.C., I recommend time-released niacin. The **ONLY type of niacin that works is the type that makes you flush**, because the flush is in response to the prostaglandins that were released. However, taking time-released niacin greatly reduces the flush to very tolerable levels. The particular brand I recommend is *Doctor's Best Time Released Niacin (Niaspan)*. This brand has worked well at releasing niacin slowly and thus reducing the flush. After taking niacin for a week or so, the flush becomes essentially non-existent with this brand as well, if you ever even feel a flush at all.

The typical dose for time released niacin is 500mg - 1500mg per day, in divided doses. Usually patients start with the lower dose and build up to assess response. Each dose should be taken with a meal.

If taking niacin long term, the main side effect is an increase in liver enzymes, with a very rare chance of liver damage. This comes from the fact that niacin uses up tons of methyl groups in the liver in order to get metabolized. It is this "methyl group deficiency" that causes the liver issues.¹³

Fortunately, there is a very easy solution to this: the patient just needs to take equal doses of trimethylglycine (TMG, aka Betaine) with the niacin to replenish the methyl groups.¹⁴ Make sure to take regular betaine / trimethylglycine and **not** "betaine HCl", which is used as digestive support.

How to take Niacin, continued

I have personally had patients on time-released niacin for years with concurrent TMG supplementation and they showed perfect liver enzymes. Still, liver enzymes should be checked 6 months or so after beginning niacin supplementation for peace of mind. Lastly, a deficiency of b12 or folate (b9) could also increase the risk for liver side effects from niacin supplementation.

If liver enzymes still happen to elevate to unacceptable levels, then you might need to switch to immediate-release niacin. This will cause much more intense flushing, but uses much less methyl groups during its metabolization, thus sparing the liver.

Keep in mind, I am being extra cautious with the above paragraphs, mainly because if you choose to supplement with niacin, I want you to be able to do it long term without any major side effects.

Niacin is truly one of the largest hitters when it comes to supplements for colon health. While it can be a bit inconvenient at times to supplement with niacin, I encourage you to talk with your treating physician and give it a solid trial, as it can be of immense benefit to you!

Sincerely,

Dr. Sean Golden

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