Build Your Resilient Gut
MICROBIOME & BEYOND

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Common GI Problems & Solutions:

Inflammatory Bowel Disease (IBD) - Crohn's, Colitis, etc.

Video Transcript:

All right, so oral tolerance, big issue. If you lose oral tolerance, then you're much more susceptible to lots of things entering into your GI tract causing inflammatory responses. This is when food starts to create inflammatory responses in the lining of your gut. This can then lead to something called inflammatory bowel disease. It all goes hand in hand. Inflammatory bowel disease is really the understanding of Crohn's and colitis.

There's a couple of sub-conditions within this like micro colitis and so on. But nonetheless, the pathologies are very similar. We'll distinguish between the two conditions. But again, both of these issues and everything under inflammatory bowel disease comes from the loss of oral tolerance, because now you're consuming on a regular basis lots of things that are ending up in the gut and eliciting an inflammatory response in the lining of the gut.

Eventually, the lining of the gut itself gets targeted because of something called the bystander effect. And I should pause here just to explain the bystander effect a little bit more. So think about it this way. Let's say you've lost oral tolerance, and so let's say certain components of the foods you eat will elicit an immunological response. So those components come in, you've got the lining of the gut, those components come and sit near the lining of the gut.

Because you've lost oral tolerance, your immune system gets activated. And it's always the innate immune system first, because they're the ones that respond first and in an inflammatory manner. Your innate immune system comes to the area where the food is engaging with the lining of the gut and starts attacking the food. In the process of attacking the food, it's also going to damage the lining of your gut.

Now here comes the macrophages and dendritic cells that are antigen presenting cells. The role of these cells is to grab proteins and antigens from that battle site and present it to T cells and B cells as the potential target that is causing the inflammatory condition or the reactive condition. So these macrophages and dendritic cells come to that area where there's bombardment of the food particles, but also the bombardment damages your own gut cells.

And they may accidentally pick up components of your own cells and present it to the T cells in B cells as the culprit. If this happens and it doesn't get suppressed with the regulatory T cells, then you may develop a B cell, which is the cells that produce antibodies, that then sees your own gut lining cells as the target, produces B cells and immune activity and T cell activity against that target.

That target, unfortunately, happens to be your own tissue. So your tissue is a bystander, an innocent bystander, in this massive inflammatory attack of food in the lining of the gut. This is why loss of oral tolerance can lead to inflammatory bowel disease. Because now when that transition happens, not only is your immune system now attacking food that's coming in, it's also attacking your own gut proteins, your own cells, your own tissue.

You now have a condition where your bowels are being attacked by your own immune system and you've got inflammatory bowel disease. Now, there are distinctions between the two. Crohn's disease is a chronic inflammatory autoimmune disease, which is very similar to colitis, but the thing with Crohn's is it can affect your entire GI tract, all the way from your mouth all the way down to your rectum.

It's not susceptible just to a certain part of your digestive tract. And the problem with

Crohn's is it can go deeper into the lining of the gut. It can affect your entire lining structure, whereas colitis is really just the surface that it goes after. So it looks more like little ulcers, and it doesn't go much deeper, but colitis is basically affecting your colon and your rectum, and it often starts at the rectum and can move up.

But the problem with colitis is it can lead to much more scary things like colorectal cancer because of the constant inflammation as a result of the colitis. And Crohn's disease can lead to other things like the formation of strictures and big cysts and things like that. Often with Crohn's, the surgeons end up having to resection the bowels because there are parts of the bowels that have just become so damaged because of how deep Crohn's can go into the lining of the gut that they just have to cut it out.

So you'll have of the bowels and things like that that can be highly problematic. But these are both inflammatory conditions that are autoimmune where your own cells have become an innocent bystander to the loss of oral tolerance. Inflammatory bowel disease signs and symptoms. Between the two, you've got some shared symptoms between the two, abdominal pain, diarrhea, sometimes bloody diarrhea because, of course, the lining of the guts being eaten away to some degree.

There's a lot of weight loss, fatigue, fever, and so on because you're not digesting and assimilating nutrients in the correct way. With Crohn's, you could have these fistulas and abscesses and other bowel obstructions that build because of how deep Crohn's can go into the lining of the gut. It can create these abnormal structures. Whereas ulcerative colitis is more bloody diarrhea.

It's more surface. It creates more urgency for defecation because it affects the colon. The colon is what determines water absorption and, of course, the formation of stool itself. And because it's affecting the colon, it really creates an issue with defecation and stool formation and so on. So there's a big issue with the lining in both cases. In both cases, when you look at mechanism, there is immune dysregulation.

The immune system is attacking the lining of the gut, causing chronic inflammation and damage to the lining of the gut. This is, again, as a result of loss of oral tolerance, and

then the gut lining becomes a innocent bystander in the effect. Reduce microbial diversity and overgrowth of pro-inflammatory pathogens are present in both of these conditions. And in fact, beneficial microbes are inversely correlated.

So if you take keystone species like Faecalibacterium prausnitzii and akkermansia, the more of those you have up to a certain degree, the more protection you have against these inflammatory bowel conditions. Why is that? Well, that's because they prevent leaky gut. They increase oral tolerance by upregulating butyrate and short-chain fatty acid production.

And so they help negate the risk of oral tolerance leading to food reactivity leading to the bystander effect where your own cells become the immune target. So microbes and the microbiome play a very important role here. Leaky gut, the increased permeability and inflammation would, of course, drive these conditions. And leaky gut is, of course, also associated with dysbiosis.

And then there are genetic factors, and there are different genes that affect each of these, but nod to gene SNP and so on. Those can be predispositions, but they're not at all a guarantee that you develop the condition because that's your genetics. The epigenetic, the expression of the risk, comes from the environmental factors. That's your diet, how healthy your gut is, how healthy your gut microbiome is, how your immune system is functioning, and so on.

So having the genes is fine. You won't necessarily develop the conditions, but having the genes and having the epigenetic drivers like the dysfunctional gut, poor diet and so on, those will then create the risk. Now, you can also have the condition without having the gene risk as well, the genetic risk. All right, so natural ways to support your large bowel and parts of your small bowel in order to deal with this inflammatory type of condition.

And again, this is not a treatment for IBD. Please keep that in mind. These are ways to supporting your microbiome, supporting the immune response, and of course, supporting the lining of the gut as well. And it comes down to our foundational

recommendations, which is the **MegaSpore**, the **Tributyrin-X**, and the **MegaPre**. These supplements can play such an important role in upregulating some of these protective mechanisms in the system.

When you want to look at diet recommendations, you can look at an antiinflammatory diet. So there's an IBD-AID diet that restricts certain carbohydrates and incorporates pre and probiotics. Again, it's not a super restrictive diet, which is good, but still there are restrictions in it. And so you want to be careful of being on these for long term. But in the short term, it can be quite useful and beneficial.

The Mediterranean diet has really been shown to be very protective and inversely associated with inflammatory bowel conditions, in part because of the healthy fats, so the olive oil and so on that have antiinflammatory effects, the emphasis on fruits and polyphenols, which are really important to feed keystone species and reduce inflammation and repair the lining of the gut so it can help counteract inflammatory responses in the lining of the gut.

Mediterranean diet in general is very, very good for the gut. Plant-based diets can really help as well because of the increased focus on fiber-rich foods. Plant-based diets aren't, of course, using a bunch of flour and starches and all that. We're really talking about consuming plants and fiber especially. There are studies showing that switching to a plant based diet can be alleviating for a certain level of inflammatory bowel conditions.

MegaSpore, as we talked about, has been shown to reduce endotoxemia, leaky gut, and inflammation in the lining of the gut, and upregulate the growth of keystone species and short-chain fatty acids. So these are all really important mechanisms by which it can help support the system. **Butyrate**, as I mentioned earlier, key component to upregulating the T regulatory cells and secretory IgA as well, and reducing inflammatory responses in the lining of the gut.

So the butyrate in **Tributyrin-X** can be super useful. And then the prebiotic in **MegaPre** goes to feeding the keystone species and increasing the growth of Faecalibacterium prausnitzii, of akkermansia. These are organisms that protect the lining of the gut

against IBD. In fact, the population studies have shown an inverse correlation between the presence of Faecalibacterium prausnitzii and akkermansia and diversity with the risk of IBD.

The more diversity, more of those keystone species you have, the lower risk you have of developing these types of conditions. Serum-derived immunoglobulins, **MegaIgG** I had mentioned, that could be very useful again because it takes down the toxigenic load in the system. And reducing the toxigenic load reduces inflammation, triggering of the immune system, and so on.

Again, it's something that I use quite a bit on a regular basis. So it's a really, really important and very effective supplement in reducing toxigenic load in the gut. Paraprobiotics like **HoloImmune** that can be a digestive support can help balance the immune response in the gut as well and help you digest and break down foods a little bit better. And then other supplements we can recommend, our **MegaMucosa**.

That's one that improves the building of the lining of the gut, increases mucosal development, so then your lining is protecting the intestinal epithelial cells from damage and reaction. It also modulates inflammatory responses in the system. Aloe vera can be very useful for soothing out inflammatory responses in the lining of the gut. L-glutamine can help with the endothelial cells, sorry, the epithelial cells in the small bowel to get reenergized and replace and repair the damage that you see.

And then things like slippery elm and can also help and you can consume that before your meal to reduce any mucosal damage that may occur as a result of the meal. Curcumin has also been shown to be able to reduce the types of inflammation that can be very profound in people with ulcerative colitis and other inflammatory conditions. So curcumin is also really useful.

And then for those that have a really hard time and have tried lots of things, there are fecal microbial transplants that can be beneficial for ulcerative colitis as well. Lifestyle technique and stress management, we've said this so many times, but I'll just reemphasize it here again.