

NEW! BioDoph-3 GI

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The field of targeted probiotics is exploding. We've known for years that probiotics promote intestinal barrier integrity and gut mucosal homeostasis. Data confirm that probiotics affect other organs and organ systems. For example, probiotics modulate the gut-brain axis as clinical trials indicate improvements in mood, sleep, and feelings of anxiety.

Viewers may remember we shared an obese Chinese microbiologist's experience with diabetes and hypertension. Just by changing his microbiome and breaking the hyperinsulinism cycle, he was able to lose 100 pounds in 23 weeks and to see a remission in both diabetes and hypertension. He then injected his fecal samples into mice genetically bred to be lean. Interestingly, they became obese and displayed blood sugar issues as well.

Now researchers are showing specific probiotics appear to target specific results. It has been proposed that each strain may have a particular influence on the gastrointestinal tract, and that multi-species probiotics may have synergistic



effects compared to isolated strains. In other words, not every strain within a bacterial species has the same properties; probiotic effects are strain specific.

For example, four different Bifidobacterium strains were given to rats and then fed diets known to induce weight gain. Interestingly, one strain caused weight gain above the controls, two Bifidobacterium strains gained weight comparable to controls. But one of the Bifidobacterium strains prevented diet-induced weight gain.

Knowing specific strains within a bacterial species can have targeted effects, Biotics isolated 3 strains that support

gastrointestinal health in a new product called BioDoph-3 GI. BioDoph-3 GI contains two specific strains of Lactobacillus plantarum (KABP-022 and KABP-023) and Pediococcus acid-ilac-tici (KABP-021) in a 1:1:1 ratio.

Several studies have shown these 3 synergistic strains to have clinical value in restoring an optimal microbiota environment. See the link to the right. One of the studies was a double-blinded, randomized trial where the synergistic strains were shown to significantly improve IBS-related quality of life compared to placebo. Participants met the Rome-III criteria for IBS-D

or IBS-Diarrhea. Additionally, it is the first multispecies probiotic to demonstrate improvement in the Visceral Sensitivity Index (VSI), a validated indicator of gastrointestinal symptom-specific anxiety.

Another interesting piece of this trial tested high and low doses of probiotics. By the end of the trial, the low 3 billion dose, given once daily was just as effective as a dose 5X higher. This is important because sometimes patients with IBS symptoms can't tolerate high levels of additional bacteria in their gut. Why would less bacteria have such a positive effect? I'm glad you asked, because it opens another conversation regarding probiotic benefit. Postbiotic benefit! The metabolism of certain bacteria create other substances beyond taking up space and inhibiting gram-negative bacteria and other dysbiotic agents. Studies using the 3 specific strains in BioDoph-3 GI showed they created antimicrobials against six IBS-specific bacterial strains.

That's a nice side effect. Here's 3 more examples of Post Biotic benefits from the synergistic strains in BioDoph-3 GI. The first benefit we see is an increase in Short Chain Fatty Acids. As you know, the cells in the gut turn over rapidly, so they need energy to reproduce and repair tissue. SCFAs are an energy substrate for the colon. They are anti-inflammatory and are important for water control in the GI tract.

Another postbiotic benefit is the production of the neurotransmitter acetylcholine. Acetylcholine has been indirectly linked to IBS. Cholinesterase activity breaks down acetylcholine. And women with elevated serum cholinesterase activity were found to be twice as likely to be diagnosed with IBS-D. Acetylcholine is the primary neurotransmitter of the parasympathetic nervous system. And we know the parasympathetic nervous system promotes detoxification, digestion, sleep, and tissue repair among other things. Acetylcholine binds to macrophages and inhibits the NFkB-mediated production of pro-inflammatory cytokines. As I mentioned, enhanced cholinesterase activity leads to more

rapid degradation of acetylcholine. Less acetylcholine means less inhibition of NF-Kappa B. Increasing the availability of acetylcholine will enhance parasympathetic activity and support a healthy anti-inflammatory response.

Another postbiotic effect was new to me, an increase in polyphosphate, "poly P", for short. Poly P is a repeating structure of phosphates which protects the intestinal cells from oxidative stress and inflammation and helps to maintain intestinal barrier integrity. Poly P has been shown to improve the intestinal barrier function by the upregulation of cell adhesion and relieving intestinal inflammation. We are all familiar with ATP, adenosine triphosphate, and its role in energy production and storage. We need phosphate to make ATP.

Here's another example of the synergistic effects of the targeted strains in BioDoph-3 GI. In two animal models of colitis the synergistic targeted bacteria strains in BioDoph-3 GI demonstrated a protective effect, by limiting the production of 2 major inflammatory cytokines IL-6 and IL-23. But just as important was the induction of beneficial processes in the gut mucosa. It is likely that repair of the intestinal barrier is at least partly mediated by poly P production.

By the way, in another human study, patients with lactose intolerance reported less GI irritation when taking BioDoph-3 GI when exposed to lactose.

BioDoph-3 GI is a clinically validated multi-species formula that provides digestive comfort. It promotes gastrointestinal epithelial repair through a variety of mechanisms including upregulating Short Chain Fatty Acid production and balancing the microbiota. In addition it helps digest lactose and studies show it supports positive mood. It is exciting to see targeted probiotics are becoming more available. And its even more exciting to see the positive patient responses.

Thanks for watching, I look forward to seeing you again next Tuesday.