Reconditioning the Gut:

A New Approach in Probiotics

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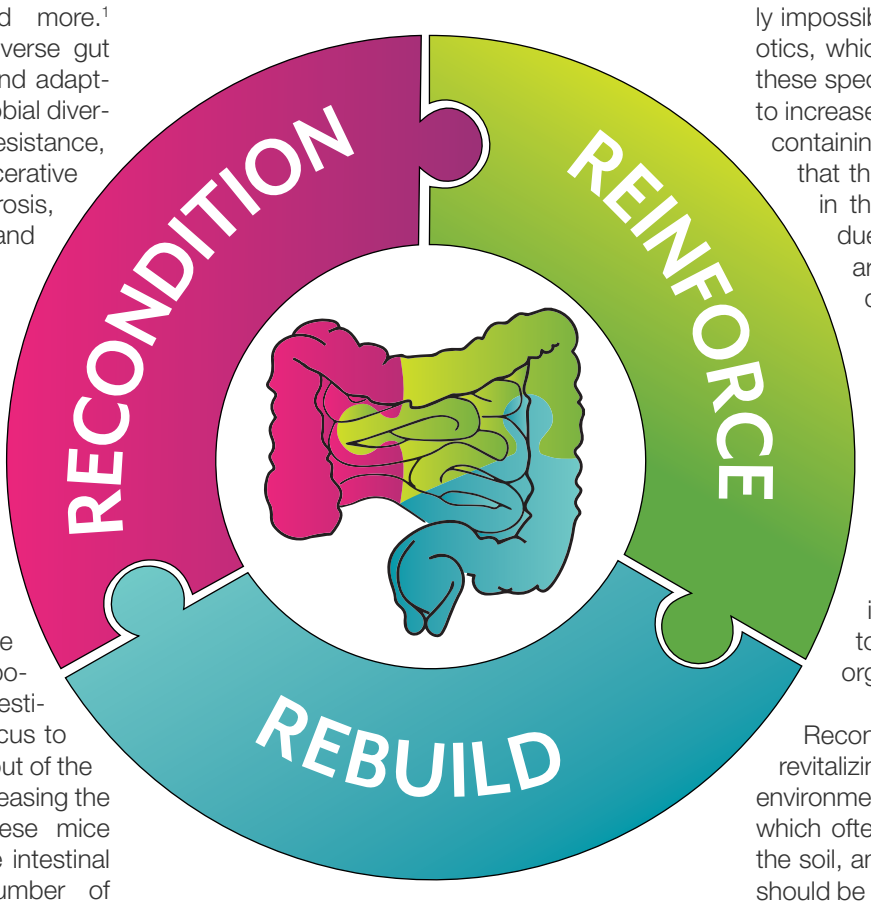
The gut microbiome has quickly become a fascinating new frontier in the world of medicine. Researchers are just now beginning to uncover the powerful interconnection between human health and the vast ecosystem of bacteria, viruses, fungi, and protozoa that lies hidden inside. When this vast but delicate ecosystem is thrown out of balance, it can lay the ground work for many chronic diseases, including obesity, heart disease, diabetes, autoimmunity, mood disorders, and more.[1] Recent studies reveal that a more diverse gut microbiome results in a more robust and adaptable immune system.[2] In fact, low microbial diversity has been linked to autism, insulin resistance, colorectal cancer, Crohn's disease, ulcerative colitis, celiac disease, multiple sclerosis, polycystic ovary syndrome (PCOS), and more. [1-3]

Studies investigating microbial diversity have identified a handful of species as next-generation beneficial bacteria that appear to protect the human host. These bacterial species include *Akkermansia muciniphila, Faecalibacterium prausnitzii*, and *Bifidobacterium spp.*

A. muciniphila is a mucin-degrading bacterium that plays a crucial role in the regulation of the gut barrier and metabolism.[4] The gut barrier consists of the intestinal lining coated in a thick layer of mucus to keep unwanted toxins and pathogens out of the bloodstream. One study found that increasing the abundance of *A. muciniphila* in obese mice actually increased the thickness of the intestinal mucosal layer as well as the number of mucus-producing goblet cells in the intestinal lining.[5] In humans, *A. muciniphila* is associated with healthier metabolic status, particularly improved insulin sensitivity and glucose homeostasis, and better outcomes after weight loss.[6] Low abundance of *A. muciniphila* has been linked to obesity, diabetes, liver disease, cardiometabolic diseases, and low-grade inflammation. [7]

F. prausnitzii is a butyrate-producing bacterium and one of the most abundant and important commensal organisms in the human gut. By producing butyrate, *F. prausnitzii* plays a pivotal role in providing energy for colonocytes and ameliorating intestinal inflammation.In light of these recent findings, *F. prausnitzii* is quickly becoming known as an anti-inflammatory bacterium that regulates human intestinal health.[8] Low levels of *F. prausnitzii* have become common signatures of inflammatory intestinal disorders like IBS, Crohn's disease, ulcerative colitis, colorectal cancer, obesity, and celiac disease.[9]

The genus *Bifidobacterium* plays an important role in maintaining barrier function and stimulating the immune system.[10] Because *Bifidobacteria* are also butyrate-producers, they can help reduce intestinal inflammation and also appear to help with weight management.[11] Low levels of *Bifidobacteria* have been associated with obesity, diabetes, celiac disease, allergic asthma, dermatitis, IBD, chronic fatigue syndrome, and psoriasis.[12-14]



Because these particular bacteria confer significant health-protective benefits, the natural inclination is to try administering them directly as probiotics. However, all of these protective bacteria are anaerobes, meaning that they require oxygen-free environments in order to thrive. These bacteria are very sensitive to harsh environments are not designed by nature to be removed and reintroduced orally. Due to the nature of supplement manufacturing, it is currently impossible to produce strictly anaerobic probiotics, which suggests that oral administration of these species may not be the most effective way to increase their abundance. Even with probiotics containing *Bifidobacteria*, there is no evidence that the probiotic strains are able to colonize in the gut, beyond infancy. This could be due, in part, to the fact that *Bifidobacteria* are often grown in aerobic conditions during manufacturing which limits their efficacy in the gut. The good news is that these commensal strains are already present in the gut microbiome. Antibiotics may reduce their abundance, but they are never completely eradicated – they just need to be revitalized. Rather than reseed the gut with these beneficial bacteria, recent studies support the idea of reconditioning the gut in order to favor the growth of these commensal organisms from within.[15]

Reconditioning the gut is very much like revitalizing a withering garden. The existing environment undergoes a complete overhaul which often includes removing the weeds, tilling the soil, and fertilizing the plants. A true probiotic should be able to recondition the gut in a measurable way, but many "probiotics" on the market are unable to produce these significant shifts due to poor survivability and weak colonization.

Bacillus spores, on the other hand, can effectively RECONDITION the gut by modulating the microbiota, lowering the pH in the intestines, reducing gas production, increasing short-chain fatty acid production, and encouraging the growth of beneficial, keystone bacteria like *Akkermansia muciniphila, Faecalibacterium prausnitzii*, and *Bifidobacterium species* in as little as 30 days.[15] Once the gut has been reconditioned, the next steps are to REINFORCE the microbial changes with a Precision Prebiotic™ and REBUILD the intestinal mucosa with the necessary building blocks in order to completely restore the health of the gut microbiome. Stay tuned to learn more about the next two steps of this Total Gut Restoration system.

RECONDITION REINFORCE REBUILD

Dr. Tom Bayne is a Chiropractic Physician and public speaker dedicated to understanding and improving the gut microbiome. As the President of Microbiome Labs, Dr. Bayne travels around the world to educate other healthcare practitioners on the connection between the gut microbiome and many chronic diseases.

https://bit.ly/2F54Yrr

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