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Microbiome with Synbiotics Can Extend Lifespan

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Microbiome and Health

The microbes we host is very specific to every individual and their profile is called 'microbiome'. Microbiome affects nearly every aspect of our health, which varies from individual to individual, may hold the key to everything from weight gain to moods. The connection between microbiome and health may be even more important than we thought. There are significant similarities in the compositions of the microbiomes of genetically unrelated individuals. Over 20% of the inter-person microbiome variability is associated to diet and lifestyle. Most of the clinical measures are strongly associated with bacterial genomes than the association with the host's human genome. We cannot change our genes, but we now know that we can affect / reshape the composition of the different kinds of bacteria we host in our bodies. Understanding our microbiome may be key to treating many common health problems. Our microbiome could be a powerful means for improving our health.

Microbiome and Synbiotics

As bodies age they become less able to handle environmental stresses, and these stresses cause imbalances, including inflammation, oxidative stress and metabolic dysregulation, and mitochondrial damage. Microbiome as part of the Gut-Brain Axis (GBA) may represent a therapeutic approach against some age-related conditions. This suggests that how we assimilate nutrients in the Gastrointestinal Tract (GIT) plays a key role in aging and longevity. Gut microbiota composition is also linked to healthy aging, and age-related changes in the composition of gut microbiota vary between individuals. In general, aging subjects have a decline in probiotic bacteria and elevation in proinflammatory Proteobacteria. The GBA represents a two-way communication system between gut signaling and the brain, which receives metabolic, immunological, endocrine, and neuronal signals directly from bacterial cells and metabolites. The combination of probiotics and the prebiotic formulation could help to prevent or treat human disorders ranging from diabetes and obesity, to neurodegeneration, chronic inflammation, depression, irritable bowel syndrome, and perhaps even cancer. The probiotic formulation comprised two *Latobacillus* and one *Bifidobacteria* strain, while the polyphenol-rich prebiotic herbal supplement was used in an experiment with encouraging results. The synbiotic and probiotic formulations reversed the otherwise reductions in GPx and SOD activity measured in control. The synbiotic formulation had a significantly higher impact than the probiotic formulation. Probiotic formulation containing three bioactive probiotics was combined with a novel polyphenol-rich prebiotic to create a novel synbiotic formulation that promotes longevity.

The concomitant action of the gut microbiota on each of the key risk factors of aging and makes it a powerful therapeutic tool against neurodegeneration, diabetes, obesity, cardiovascular disease, and other age-related chronic diseases. Probiotics dramatically change the architecture of the gut microbiota, not only in its composition but also in respect to how the foods that we eat are metabolized, maintaining a healthy gut microbiota through the use probiotic and prebiotic supplements might help to delay chronic disease onset and increase lifespan.