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Project Title

Dissecting the Role of the Microbiome-Derived Metabolome in Healthy Aging and Age-Associated Metabolic and Cardiorespiratory Diseases

Project Summary

We as humans share our body with numerous microbes, majority of which live in our gut. Recent research suggests that these microbes massively influence human pathophysiology. Gut microbes impact digestion, metabolism, immunity, cognition, and aging. Studying gut microbes and in particular products of their metabolism open new perspectives to understand human health, aging and disease and to find new therapeutic avenues. Here, we will study chemicals related to gut microbes that circulate in our body as part of the "aging metabolome" and will unravel their contribution to metabolic and cardiorespiratory diseases: First, we will study how and which of these chemicals relate to the health and disease related factors of the participants as they age, Next, we will ask how our age, diet and environment affect the chemical markers that we find in step 1. Finally, we will utilize the genetic information of the participants to test if these chemicals impact our health.

Keywords

Metabolomics, Microbiome, Genome, Circulating metabolites, Mass spectrometry, Genotypes, Inflammation