Title: Diet and Gut Microbiome Associations in Obesity

Abstract:

Obesity has become a prevalent global health issue, affecting nearly 53% of adults classified as overweight or obese. While increasing evidence suggests connections between the gut microbiome, obesity, and dietary habits, there remains a significant gap in our understanding of these interactions. The gut microbiota consists of trillions of microorganisms in our digestive system, which efficiently metabolize dietary components and have been increasingly recognized for their significant role in weight management. Here, we performed a shotgun metagenomics investigation of the gut microbiome profiles of obese and healthy individuals to uncover the potential interplay between the gut microbiome composition, dietary intake, and obesity. We found significant differences in the composition of key microbes between the obesity group and the healthy control group and identified their correlations with distinct dietary patterns. This study could offer new insights into dietary strategies for obesity management and overall health improvement through gut microbiome modulation.