



SPEECH INFORMATION (For Conference Program Book)

Topic	Programming Metabolic Risk: Early-Life Gut Microbiota, Childhood Obesity, and Steatoic Liver Disease
Abstract	<p>The first 1,000 days of life represent a critical window during which the gut microbiota, nutrient exposure, and host metabolism become tightly intertwined, shaping lifelong metabolic health. Growing evidence indicates that early microbial community structures can predict metabolic risk, including obesity and metabolic dysfunction-associated steatotic liver disease (MASLD) in children.</p> <p>In this presentation, I will summarize how early-life microbial trajectories are linked to excessive weight gain and altered hepatic lipid metabolism in children. I will then share our findings from a pediatric cohort of children with obesity and MASLD. In these children, liver steatosis and elevated ALT were associated with an increased abundance of <i>Desulfovibrio</i>, a sulfate-reducing genus implicated in impaired gut barrier integrity. Conversely, enrichment of specific <i>Bacteroides</i> lineages - particularly <i>Bacteroides ovatus</i> - exhibited a protective signature. In high-fat-diet mouse models, oral administration of <i>B. ovatus</i> attenuated hepatic fat accumulation and improved metabolic parameters, suggesting a microbiota-driven, liver-targeted anti-steatotic effect.</p> <p>Together, these findings support the concept that pediatric obesity and MASLD are not merely hepatic disorders but also ecological phenotypes of the gut. Recognizing the gut as a modifiable organ, we can promote the establishment of a healthy early-life gut microbiota - through breastfeeding support, timely introduction of solid foods, avoidance of unnecessary antibiotics, and rational prebiotic or probiotic strategies - to foster a gut ecosystem resilient to metabolic dysregulation later in life.</p>

