DDC
Texas Medical Center Digestive Diseases Center

WEEKLY RESEARCH FORUM



NOV. 5

4:00 PM

Impact of early-life gut microbiome on behavior and cognition

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Can the gut microbiome in the first six months of life predict and shape cognitive function years later? In this talk, I will show that infants with cognitive delays at two years of age harbored early-life gut microbiomes that transferred those deficits to germ-free mice, reshaping both behavior and brain function. This work revealed a previously unrecognized microbiome-mediated metabolic state in the mice, which we later confirmed in infants too. A rationally designed microbial consortium restores the mice to typical behavior by promoting a single class of metabolites. These findings point toward the ability to identify infants at risk of cognitive delays and toward a developmental window when intervention may still be possible.

Publication(s):

- PMCID: PMC13060970

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