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EMORY
UNIVERSITY

Evaluating the influence of a piped water network on water quality and the gut microbiome

My research interests are in exposure assessment in WASH, enteric diseases, water quality, and the gut microbiome in international settings. My dissertation project will explore the impact of water quality on the composition and development of the gut microbiome among infants in Beira, Mozambique.

WATER & CHILD HEALTH

771 MILLION
People lack access to basic drinking water globally

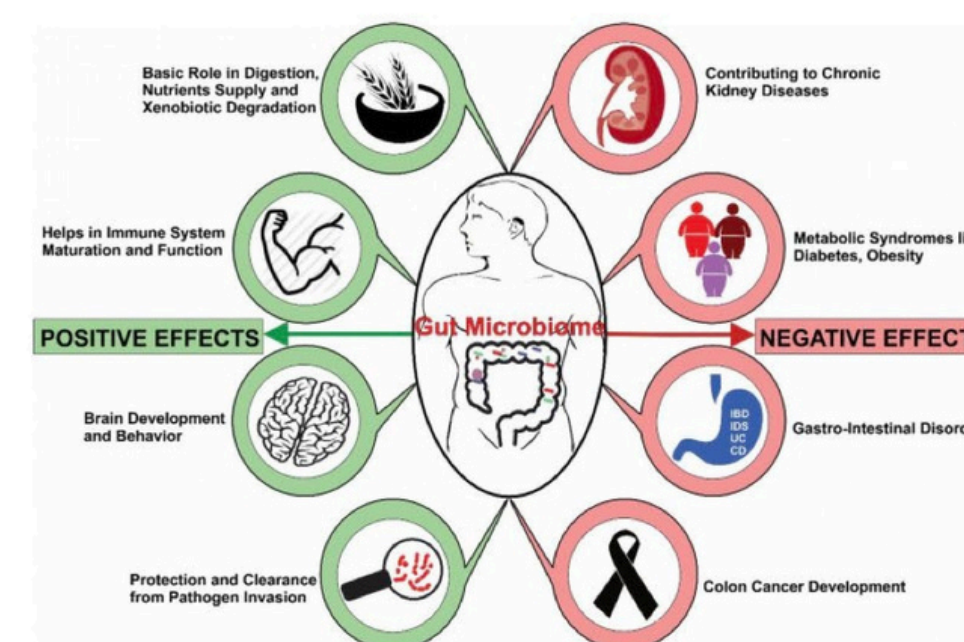
1.1 BILLION
Cases of diarrhea in children under 5 annually

446,000
Deaths from infection in children under 5 annually



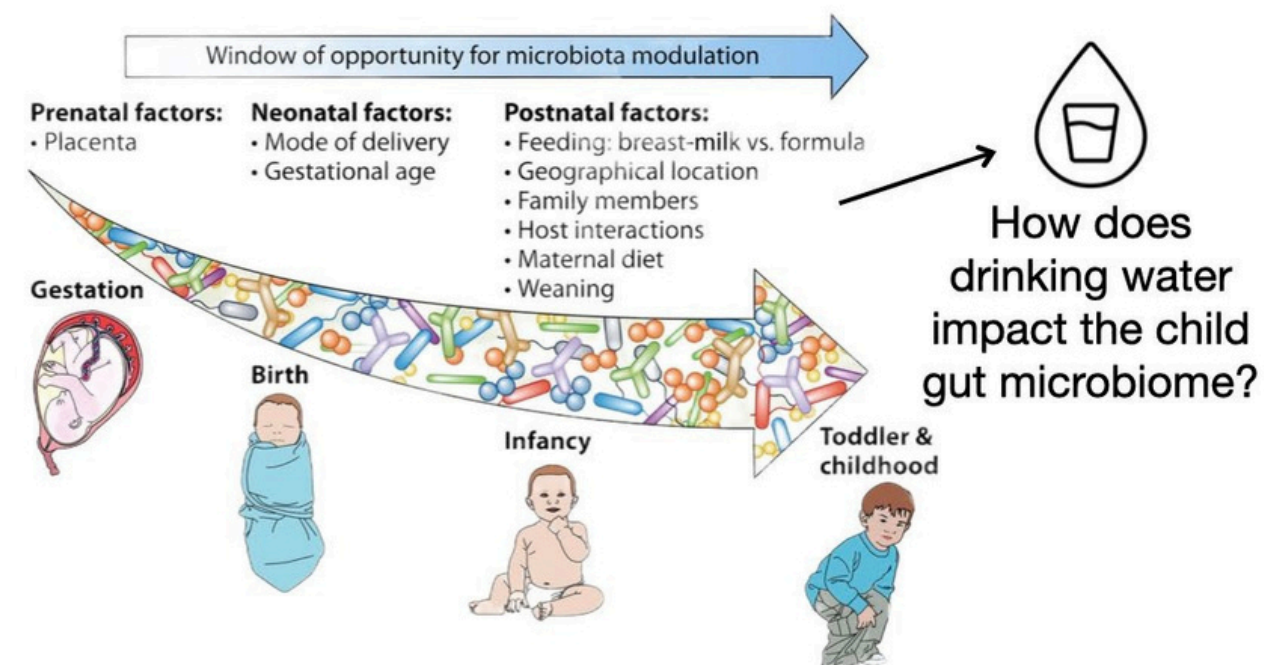
THE GUT MICROBIOME

The trillions of microbes that reside in our gut which perform important bodily functions:



Human microbiome: an academic update on human body site specific surveillance and its possible role | SpringerLink

CHILD GUT MICROBIOME



The First Microbial Colonizers of the Human Gut: Composition, Activities, and Health Implications of the Infant Gut Microbiota | Microbiology and Molecular Biology Reviews (asm.org)

Gaps in Knowledge

01

The impact of large-scale water interventions in low-income settings?

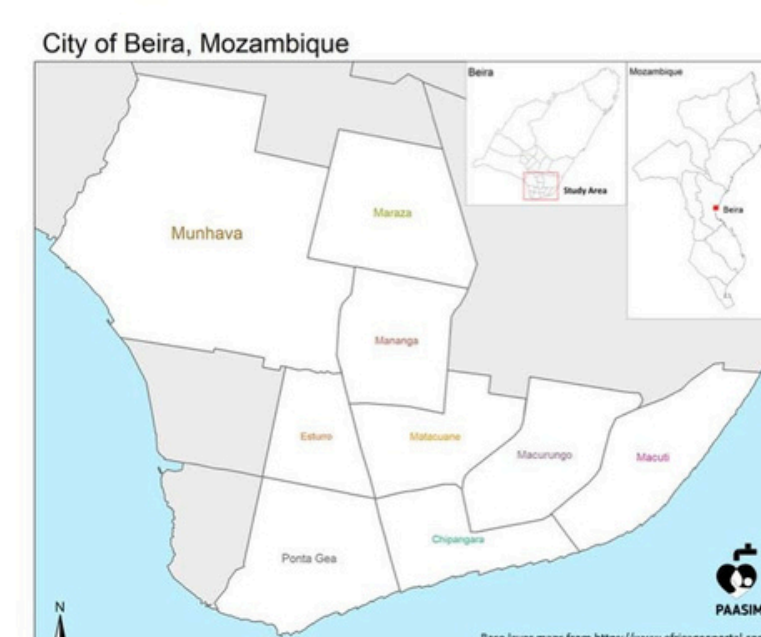
02

The impact of drinking water on the child gut microbiome?

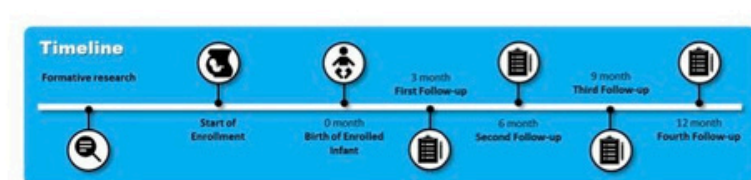
03

How to improve our methods for exposure assessment in water, sanitation, and hygiene research?

MY RESEARCH Project Description



STUDY OBJECTIVE:
To investigate if and how improvements to drinking water quality and access influence gut microbiome composition among children.



IMPACT

01

The impact of large-scale water interventions in low-income settings?

RESEARCH WILL SUPPORT LARGE INVESTMENTS IN URBAN WATER INFRASTRUCTURE.

02

The impact of drinking water on the child gut microbiome?

WE WILL IDENTIFY OPPORTUNITIES TO INTERVENE AND PROMOTE HEALTHY MICROBIOME DEVELOPMENT.

03

How to improve our methods for exposure assessment in water, sanitation, and hygiene research?

APPROACH WILL LAY FOUNDATION FOR MORE COMPREHENSIVE EXPOSURE ASSESSMENTS IN FUTURE STUDIES.

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Scholar Awards Celebration
November 15, 2023



Igniting
Innovation
in Georgia