



## Dr. Harriët Schellekens



Dr. Harriët Schellekens is a Senior Lecturer in the Department of Anatomy & Neuroscience at University College Cork, a Principal Investigator with Food for Health Ireland, and a funded investigator with APC Microbiome Ireland.

Her research focuses on the microbiome-gut-brain axis in nutritional neuroscience, investigating the impact of diet, nutrition, and the gut microbiome on human metabolic and mental health across the lifespan.

She has designed and runs a screening platform for the mechanistic mining of gut microbiota across gut-brain axis targets to identify effective biotherapeutics and microbiota-targeted strategies against obesity and stress.

## About Health Innovation Hub Ireland

Health Innovation Hub Ireland (HIHI) was established by the Department of Business, Enterprise and Innovation and the Department of Health and is supported by Enterprise Ireland (EI) and the Health Service Executive (HSE) to drive collaboration between the health service and enterprise. We offer companies the opportunity for pilot and clinical evaluation studies and we provide the health service access to innovative products, services and devices that they may not otherwise be exposed to.

HIHI is built on the recognition that collaboration with enterprise can benefit patient care, patient pathways

and outcomes. We assess all concepts for healthcare innovation from those on the frontline – from clinician to porter. We encourage healthcare professionals to get in touch with HIHI if they have an idea or solution to how something in your job might work better.



## The Healthcare Challenge

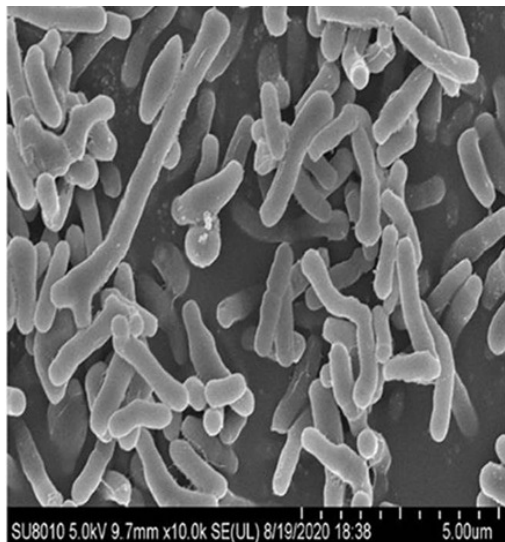
Childhood obesity is a growing health crisis in Ireland and globally. It is associated with increased risks of diabetes, cardiovascular disease, and psychological distress. Despite awareness campaigns, rates continue to rise, with clinicians highlighting several challenges:

- Poor dietary habits and reduced physical activity in children
- Lack of access to paediatric dietitians and psychologists
- Family and environmental influences on children's eating behaviours
- Limited tools for early, non-pharmaceutical intervention

Healthcare professionals highlighted the difficulty in initiating long-term behavioural change and managing compulsive or emotional eating in children, especially in neurodivergent populations. New, safe, and accessible strategies are needed to help curb obesity before it becomes entrenched.



# The Healthcare Solution



Dr. Harriët Schellekens' research at UCC/APC Microbiome Ireland has led to the discovery of *Bifidobacterium longum* APC1472, a probiotic strain with the potential to regulate food intake and improve metabolic markers such as ghrelin (hunger hormone), cortisol (stress hormone), and fasting blood glucose levels.

In preclinical and human trials, the probiotic demonstrated the ability to

- decrease fasting blood glucose levels
- reduce the stress hormone (cortisol)
- normalise hunger hormone (ghrelin).

Preclinical data has also shown the potential to reverse long-term alterations in feeding behaviour following a high caloric diet in early-life.

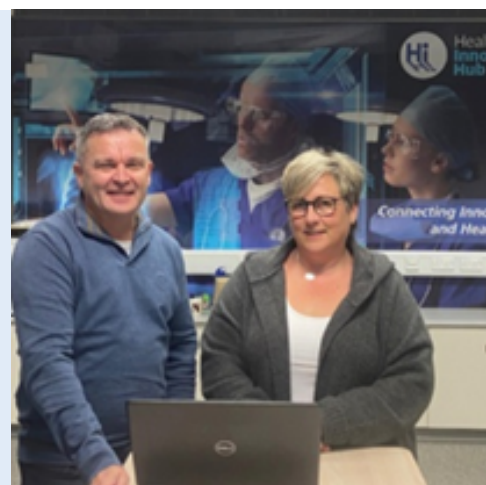
The probiotic presents a promising early-stage intervention that could be used in combination with lifestyle changes and existing treatment protocols. It targets both the gut and the brain, addressing key behavioural and metabolic factors in childhood obesity.

## HIHI Role

HIHI played a central role in the evaluation stage of this innovation. The team

- organised and conducted a series of interviews with key healthcare professionals (GPs, paediatricians, endocrinologists)
- helped prepare Dr. Schellekens' presentations and structured the interview questions
- collected and analysed clinical feedback
- provided strategic recommendations for future development and commercialisation

Through this process, HIHI ensured that the feedback gathered could inform future clinical trial design, product positioning, and implementation strategy.



## Outcome Report

The interviews provided deep insights into the feasibility, relevance, and potential clinical utility of the microbiota-targeted interventions.

Key themes from the feedback:

- Behaviour-focused treatment is critical: Clinicians stressed that compulsive eating, sugar cravings, and portion control are major contributors to childhood obesity.
- Strong interest in clinical trials: Paediatric specialists expressed interest in running randomised controlled trials (RCTs), particularly in the 5–7 age range.
- Gap in current treatment pathways: GLP-1 receptor agonists are being introduced in adolescent obesity management, but many families and clinicians are seeking non-pharmaceutical alternatives.
- Microbiota-based therapies are underused but promising: There is low awareness of probiotics in obesity care, but clinicians acknowledged their potential and welcomed more evidence-based approaches.
- Recruitment potential exists: Experts highlighted existing patient cohorts (e.g. 350,000 children in Munster) and school-based programs that could support future research.

## Testimonial

*"Working with HIHI on our microbiome-targeting solutions aimed at childhood obesity and eating behavior was an incredibly valuable experience. From the outset, Dr Michael Twomey and the HIHI team demonstrated a deep understanding of both the clinical landscape and innovation pipeline. Their support helped us refine our concept through meaningful engagement with clinicians and end-users, ensuring the intervention was aligned with real-world needs and challenges. The feedback gathered through HIHI's structured process has directly informed our development strategy and strengthened the translational potential of our work. This kind of collaborative, user-driven support is vital for any health innovation aiming to make a real impact."*

*Dr. Harriët Schellekens, UCC*