

Jeroen Raes, Gwen Jacques Falony, Sara Vieira-Silva work together in the Catholic University in Leuven. Jeroen Raes is Professor of Microbiology and Immunology and group leader at the REGA Institute and VIB Centre for Microbiology. Gwen Falony is a staff scientist and Sara Vieira-Silva a senior post-doctoral scientist. This team is at the forefront of research in understanding the gut microbiome and clearly demonstrate good collaborative teamwork. Our guts carry a vast collection of microbes of different types, which clearly impact on health, especially when disturbed, a condition sometimes call dysbiosis.

A particular advance this team made was to drive forward more accurate measurements of microbiome composition. They participated in many large international projects funded by the EU or the US National Institutes of Health showing their strong international networking capacity and reputation. The projects concern the human gut microbiome using cutting edge technologies and led to the discovery of four cross-national enterotypes (distinctive pattern of gut microbes), one associated with various disease pathologies. In 2012 they launched the Flemish gut flora project and link age, gender, body mass index and diet to microbiome. This is a first important step towards clinical applications and diagnostics.

The team established the link between stool consistency and microbiome, and between gut microbiome composition and depression status, pointing to specific metabolic pathways that may influence the depression status. They also discovered the importance of quantitative microbiome profiling (not only proportions) in disease, such as Crohn's disease and discovered certain microbial community types that are associated with dysbiosis.

Finally, they found that statins may modulate dysbiosis, opening future opportunities for therapeutic potential.