UNRAVELING HUMAN MILK COMPOSITION

From a scientific point of view, human milk is one of our most intriguing body fluids. Millions of years of evolution have not only adapted its composition to perfectly nurture our babies, but also to fight infections, boost cognitive development and lay the basis for a healthy microbiome development[1]. Human milk even contains mechanisms to fight cancer[2] and HIV[3].

Despite these jaw dropping facts, relatively little research focuses on the investigation of human milk itself: currently, we know more about tomatoes, than about human milk[4]. This master project will enable you to make a difference.

Illustration by
Lily Padula

The aim of this project is to investigate the biochemical composition of human milk with Raman spectroscopy. The high molecular sensitivity of Raman spectroscopy will not only enable you to investigate the milk's nutritional properties, but also its immunological properties, the presence of beneficial microbes, and other exciting aspects.

More knowledge on human milk composition will enable a) a better understanding of its benefits for newborns, b) better synthesis of formula milk for those mothers who cannot breastfeed, and potentially c) the development of new medication.

Interested? Contact Principal Investigator Dr. Nienke Bosschaart: n.bosschaart@utwente.nl or co-supervisor Dr. Cees Otto: c.otto@utwente.nl for more information.

References
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