

The nature of gut microbiota in early life

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PROPOSITIONS

belonging to the thesis

The nature of gut microbiota in early life

Origin and impact of pioneer species

Niels van Best

Maastricht, 2021

1. In addition to exogenous factors such as exposure to maternal microbes and diet, endogenous host factors also significantly affect microbial colonization of the neonatal gut (this thesis).
2. The origin of methanogens in the human gut is likely environmental (this thesis).
3. The application of longitudinal analyses while controlling for potential confounders reveals differences in microbiota development that precede the onset of atopic diseases (this thesis).
4. Early infancy represents a unique period where probiotics are able to colonize and alter the enteric microbiota (this thesis).
5. You can teach infants certain things that can no longer be learned in adulthood, and exactly the same is true for educating your immune system.
6. We need to know about all commensal bacteria what we know about (opportunistic) pathogens like *E. coli* and *Salmonella spp.*
7. Single-cell phenotyping approaches could substantially advance the microbiome research field by elucidating the functionality and activity of individual microbes within complex microbial ecosystems.
8. The neonatal window provides the optimal opportunity for targeted manipulation of the microbiota, potentially even with long-lasting positive health consequences (this thesis).
9. We need to protect our precious nature for future generations and gift children an upbringing in closer contact to the natural world.
10. Cross-border research is a long and windy road less traveled, but we can only improve research and education by passing these boundaries.