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Linking Gut Health and Microbiota Diversity

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Many scientific reports link a decreased diversity of the gut microbiota to a declined health status. However, to date, no mechanistic motivation for this exists. Here, it is shown that by applying first principles graph theory to small and simple networks, an increased diversity indeed leads to both higher efficiency as well as redundancy. The simulation results quantitatively support earlier hypothetical considerations with respect to therefore mentioned parameters, illustrating that a higher diversity in small microbial networks leads to more resilience. This provides an ingredient for the development of new interventional strategies with respect to microbiota management.

Biography:

Dr. Olaf Larsen (1972) is Assistant Professor (0.2 FTE) at the Athena Institute, VU University Amsterdam, and full time employed at Yakult Netherlands, where he is heading the Science Department. At the Athena Institute, Olaf focuses on both the valorization of microbiota management as well as on modelling of the gut microbiota. Olaf studied chemistry and obtained a PhD in biophysics.