Suzan Wopereis, Principal Scientist, TNO

Dr. Wopereis joined TNO in 2006 and works with a systems biology research group active on the theme ‘personalized health and lifestyle’. Her main focus is studying on the understanding of what biological mechanisms drive health, how you can measure health and deviations from health and importantly on how to intervene on an individual level with lifestyle on health. Food, diet and nutrition is a central focus point within these lifestyle interventions. An important aspect in her research focuses on phenotypic flexibility as a measurement of health, where she uses standardized challenge tests to study the response of a multitude of biological processes to quantify resilience in health optimization and chronic lifestyle related diseases such as Diabetes Mellitus type II. On this topic she has >70 peer reviewed scientific publications, with a total H-index of 39. Suzan acts as principal investigator in several public private partnerships focusing on real-life intervention studies, systems health applying genomics technology, bioinformatics, and standardized infrastructures. Moreover, she is responsible for scientific contents in the TNO program on personalized health focusing on low grade inflammation and on digital health innovations focusing on digital health measurements and applications. Suzan Wopereis was involved in the initiation of the Dutch Innovation Center for Lifestyle4Health (lifestyle4health.nl/) in 2018 with the mission to reduce the societal and economic impact of lifestyle related diseases, where she coordinates the program line ‘bio-mechanisms’. In 2016 she was awarded the ‘Excellent researcher of 2015’ for her work on personalized nutrition. She has a PhD in medical sciences from Radboud University Nijmegen Medical Center (2006).

Recent results

In my research, I discovered that there are multiple causes for type 2 diabetes and depending on the cause of the disease one or another lifestyle treatment works better for you. I have been working on personalized lifestyle treatments for type 2 diabetes patients that have been tested in the real setting of primary care. It showed that in newly diagnosed type 2 diabetes patients such lifestyle treatment strategy of 3 months could reverse the disease for 75% of the participants, which could be maintained also after 2 years. Here you can read more:

de Hoogh I, Biomedicines (2022), 10(3):643

Besides focusing on the curative setting Suzan also collaborates with multiple partners to realize evidence based applications for personalised health especially focusing on prevention of chronic lifestyle related diseases. Here you can watch a video on the concept of phenotypic flexibility:

Phenotypic flexibility as biomarker of health

Recent podcasts:

On personalized nutrition:

What might the future hold for personalised nutrition? (foodmatterslive.com)

Top publications:

- Phenotypic flexibility in nutrition research to quantify human variability: building the bridge to personalized nutrition. **Wopereis S**. *Proc Nutr Soc. 2022:1-13.*
- Effects of a 13-Week Personalized Lifestyle Intervention Based on the Diabetes Subtype for People with Newly Diagnosed Type 2 Diabetes. de Hoogh IM, Pasman WJ, Boorsma A, van Ommen B, **Wopereis S**. *Biomedicines. 2022;10(3):643.*
- Perspective: Guiding Principles for the Implementation of Personalized Nutrition Approaches That Benefit Health and Function. Adams SH, Anthony JC, Carvajal R, Chae L, Khoo CSH, Latulippe ME, Matusheski NV, McClung HL, Rozga M, Schmid CH, **Wopereis S**, Yan W. *Advances in Nutrition. 2020;11(1):25–3420*
- The Effect of a Lifestyle Intervention on Type 2 Diabetes Pathophysiology and Remission: The Stevenshof Pilot Study. de Hoogh IM, Oosterman JE, Otten W, Krijger AM, Berbée-Zadelaar S, Pasman WJ, van Ommen B, Pijl H, **Wopereis S**. *Nutrients. 2021;13(7):2193.*
- A Novel Personalized Systems Nutrition Program Improves Dietary Patterns, Lifestyle Behaviors and Health-Related Outcomes: Results from the Habit Study. de Hoogh IM, Winters BL, Nieman KM, Bijlsma S, Krone T, van den Broek TJ, Anderson BD, Caspers MPM, Anthony JC, **Wopereis S**. *Nutrients. 2021;13(6):1763*.
- The Circadian Clock, Shift Work, and Tissue-Specific Insulin Resistance. Oosterman JE, **Wopereis S**, Kalsbeek A. *Endocrinology. 2020;161(12):bqaa180.*
- Current and Future Nutritional Strategies to Modulate Inflammatory Dynamics in Metabolic Disorders. van den Brink W, van Bilsen J, Salic K, Hoevenaars FPM, Verschuren L, Kleemann R, Bouwman J, Ronnett GV, van Ommen B, **Wopereis S**. *Frontiers in nutrition. 2019;6:129*
- Digital Resilience Biomarkers for Personalized Health Maintenance and Disease Prevention. van den Brink W, Bloem R, Ananth A, Kanagasabapathi T, Amelink A, Bouwman J, Gelinck G, van Veen S, Boorsma A, **Wopereis S**. *Front Digit Health. 2021;2:614670.*