

TNO is a pioneering applied science and technology organization. Their mission is to create impactful innovations for the sustainable well-being and prosperity of society.

From working with such a group of experts from across the world and in different sectors and industries, I have confidence in the robustness of the set of core digital measures we developed.

Because these measures are omni-therapeutic, I will include them in my own work to collect additional information on a range of individuals in the general population with sleep issues.

— **Herman de Vries**

Research Scientist, TNO

The opportunity



- The four-year TNO early research program develops tools and methodologies for meaningful digital health measurements, including sleep. One focus is on technology development, and another investigates innovations in sleep tracking.
- TNO is doing a needs assessment on individuals with sleep issues and healthcare providers to develop meaningful solutions. The investigated sleep issues range from mild and general sleep disturbance to obstructive sleep apnea.
- The focus of our work is: “what does society need us to build?”

The impact



- Using the Core Digital Measures of Sleep, TNO can begin their project knowing that this set represents a solid choice for a broad population.
- Through data collection, TNO can then refine and decide upon the most relevant measures.
- The TNO research effort has been accelerated, potentially accelerating the impact on public health.

The resources



- TNO plans to use the [Core Digital Measures of Sleep](#) to inform their development program research. As these measures represent sleep and sleep disturbances relevant to clinicians and patients across a broad range of therapeutic areas, the set makes the perfect inclusion in a study assessing a potentially broad and heterogeneous population.
- With the practical application of the conceptual model of sleep disturbance, TNO will be able to more accurately define the sleep disturbance issues that occur in their studied population and the short—and long-term impacts of sleep disturbance. This work and the associated publications can effectively showcase the impact of TNO's project.
- As TNO develops their technology during this project, they can implement the Core Measures Sleep Measurement System from the ground up, ensuring the flexibility to create additional sleep measures retrospectively based on the data they collect now.