

# Prediction and real-life monitoring of DBS motor response in Parkinson's disease

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## Stellingen

Behorende bij het proefschrift getiteld:

### **Prediction and real-life monitoring of DBS motor response in Parkinson's disease**

1. "Developing machine learning-driven Deep Brain Stimulation outcome prediction tools requires arbitrary choices on which outcome measures to use, which cut off thresholds to use, and how to combine them." (This thesis)
2. "Experience sampling can contribute to the development and the validation of naturalistic Parkinson motor monitoring by capturing multiple real-life 'ground truth labels' per day." (This thesis)
3. "Real-time naturalistic Parkinsonian motor symptom detection based on wearable motor monitoring is feasible in time windows of several minutes." (This thesis)
4. "Whether future closed-loop neuromodulation for Parkinson's disease can be programmed based on wearable motor monitoring will be determined by the minimal duration of naturalistic motor fluctuations these sensors can detect." (This thesis)
5. "Data collected in unsupervised, ecologically valid, patient-relevant settings can overcome limitations of conventional clinical assessments, as they capture fluctuating and rare events." (Modified from Warmerdam et al, The Lancet Neurology 2021)
6. "In order to accurately evaluate an algorithm's performance, it is essential to assess its actual impact on users' decisions at an early stage." (Modified from The DECIDE-AI Steering Group, Nature Medicine 2021)
7. "It is the absolute truth that is never reached; gold standards are constantly challenged and superseded when appropriate." (Modified from Versi, BMJ 1992)
8. "The clinical research community has also got blind spots. In particular, there is a lack of awareness of the gulf between developing a scientifically sound algorithm and its use in any meaningful real-world applications." (Modified from Keane, NPJ Dig Med 2018)
9. "Be curious. Read widely. Try new things. I think a lot of what people call intelligence boils down to curiosity." (Aaron Swartz)
10. "Between stimulus and response there is a space. In that space is our power to choose our response. In our response lies our growth and our freedom." (Viktor Frankl)
11. "Reis ver, drink wijn, denk na, lach hard, duik diep, kom terug." (Kom Terug, Spinvis)