

# Q-MOTOR ASSESSMENTS IN THE BIDIRECT COHORT STUDY: FEASIBILITY, NORMATIVE DATA AND DEMOGRAPHIC EFFECTS

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### **Background:**

Q-Motor assessments have been used in a number of large multicenter clinical studies in Huntington's disease and beyond. Q-Motor has proven to be a robust and sensitive tool to track and compare motor performance cross-sectionally or longitudinally, reducing placebo effects and rater bias compared to clinical scales.

## Aims:

The current study investigated whether the application of Q-Motor assessments in a large populationbased sample is feasible, and whether it provides the opportunity to generate normative data and to investigate the effects of demographic variables on Q-Motor measures.

## Methods:

BiDirect

The BiDirect study is an observational, prospective cohort study conducted at the University of Muenster in Germany. All participants, including the population-based control cohort, performed the Q-Motor speeded tapping (digitomotography) and grasping & lifting (manumotography and choreomotography) tasks. Normative data was gathered with regard to age and sex, thereby considering further mediating variables. Effects were estimated using univariate multiple linear regression analyses.





#### **Results:**

The use of Q-Motor assessments was feasible in the setting of this longitudinal cohort study. Normative data was generated for all tasks applied and measures proposed. The applied models showed significant effects of age and sex on some tapping speed measures and involuntary movements: participants showed decreasing performance with increasing age. Moreover, women tended to tap slower than men, and the non-dominant hand showed reduced performance compared to the dominant hand across tests.

## **Conclusions:**

Q-Motor assessments are feasible for population-based cohort studies. The normative data generated here will enable comparative analysis in other studies and clinical trials, including more robust conclusions about clinical change.

## References

Bidirectional analysis of the relationship between subclinical arteriosclerosis and depression The BiDirect Study is a prospective cohort study that investigates the bidirectional relationship between depression and arteriosclerosis in more than 2200 individuals. The aim of the study is to clarify whether patients with depression have an increased risk to develop arteriosclerosis and, in turn, whether patients with arteriosclerosis are at increased risk to get depression. To this end, BiDirect uses several vascular, neuropsychological, and psychiatric diagnostic procedures and examinations in order to quantify the degree of arteriosclerosis and to determine the depression subtype. The BiDirect Study is conducted in collaboration with the Department for Psychiatry and Psychotherapy and the Department of Clinical Radiology of the University of Münster. Several sub-projects of BiDirect address e.g. the topics lifestyle and nutrition, aging of the brain, cognition, pain, and sleep. https://www.medizin.uni-muenster.de/en/epi/research/projects/bidirect/

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