DEMENTIA RESEARCH

SYNAPSIS FOUNDATION SWITZERLAND

Principal Investigator Grant

Project

Olaf Blanke:
"Bioengineering of hallucinations for early dementia detection"

Granted amount	CHF 290'142
Starting date	1.2.2024
Duration	36 months

Main applicant

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Bioengineering of hallucinations for early dementia detection

Dementia is a devastating syndrome characterized by a gradual decline of cognitive abilities, loss of independence, causing suffering for the patient and their families. The World Health Organization estimates that in less than a decade approximately 80 million new people will suffer from dementia.

Dementia with Lewy bodies (DLB) is the second most common dementia of neurodegenerative origin and is associated with specific hallucinations that appear early in the disease. In response to the growing threat of dementia and DLB, there is an urgent need to identify biomarkers to enable their early detection to maximize the efficacy of novel therapies.

Based on recent bioengineering advances in robotics and virtual reality, that we adapted for use in human clinical neuroscience, we have identified behavioral and brain signals related to hallucinations that are promising biomarkers for cognitive decline and evaluated them in over 100 patients with Parkinson's disease, who also frequently experience hallucinations and cognitive decline.

The objective of the present project is to establish whether our approach also enables the early identification of individuals at risk of DLB, thereby improving the prognosis of DLB and facilitating the development of early neuroprotective interventions aimed at slowing down the progression of the disease.