Information on the project: Alzheimer's Disease Prediction Service (ADPS)

Title of project	Alzheimer's Disease Prediction Service (ADPS)
Language of project	German, English§
Contributing institutions	Trinity College Dublin, University of Barcelona, Ionian University (Bi-HeLab), SwissNeuroFoundation (SNF), Global Brain Health Institute (GBHI), EIT Health (EU institution), Research Center for Computational Biomarkers (RCCBM), Altoida AG
Key words	Computational biomarker; behavioural analysis, machine learning, cognitive outcomes, real-world-evidence
Geographical space	Switzerland
Research question	How effective is a smartphone app in predicting the risk of Alzheimer?
Aim of project	The objective of this project is to evaluate the accuracy and performance of the first ADPS product called Altoida Medical Device (AMD) that continuously tracks everyday cognition and combines different mobile phone collected, activity data layers using machine learning techniques – in order to better estimate the risk of developing Alzheimer's disease. In a second step, these results are compared with status quo tests in clinical settings. The final aim will be to validate the digital biomarkers as a fast, easy, comfortable, non-invasive, inexpensive, and scalable solution for use in clinical trials and eventually as an annual Brain Check-up test for Alzheimer's and dementia in a clinical setting.
Methods	Sample: • 40 individuals from all educational levels and all over Switzerland will form the sample. • The participants will be recruited from a community setting with announcements made at the Swiss Neuro Foundation website and social media. Data collection: • Participants will be asked to interact with a smartphone app that measures their brain activity. • The study also includes a standard clinical examination for cognitive impairment.

	Data analysis: • The data from the smartphone task and the standard clinical examination will be compared and the equivalence will be assessed.
Relevance	The app will give insights into novel biomarkers which allow clinicians to recognise the early stages of the disease and those who may be suitable for trials of possible treatments.
Project lead	Altoida AG
Project team	• Dr. Ioannis Tarnanas, PhD, PI • Prof. Dr. med. Daniel Rüfenacht • Prof. Panagiotis Vlamos
Mandating institutions	• EIT Health, Munich • Global Brain Health Institute, Dublin • Altoida AG, Lucerne
URL of project	www.altoida.com
Start of project	1.1.2018
Estimated end of project	31.12.2018
Dissemination	News and updates about the project will be posted regularly at the newsletter of the Global Brain Health Institute, the Atlantic Philanthropies and the Alzheimer's Association USA. Also a number of scientific publications is planned for the next couple of years.