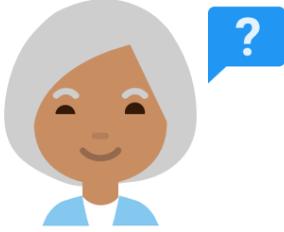# LETHE (λήθη)

A personalized prediction and intervention model for early detection and reduction of risk factors causing dementia, based on AI and distributed Machine Learning

lethe
Digital Cognitive Biomarkers

01 Cognitive impairment

Cognitive impairment is common among elderly adults. Dementia, the most severe expression of cognitive impairment, affects nearly 50 million individuals worldwide.

02 Preventive interventions

Dementia has long been considered to be neither preventable or treatable, today we know that the disease course might be modifiable with preventive interventions.

03 FINGER
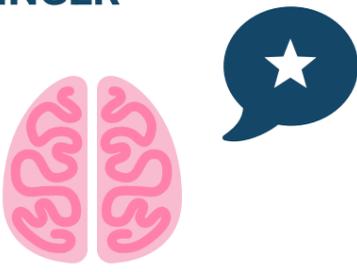
FINGER is the first large randomised controlled trial showing that it is possible to prevent cognitive decline using a multi-domain intervention.

04 LETHE project

LETHE project will evolve the clinical study into a digital model - **FINGER 2.0** - based on the IoT, Mobile, Big Data and AI, technologies.
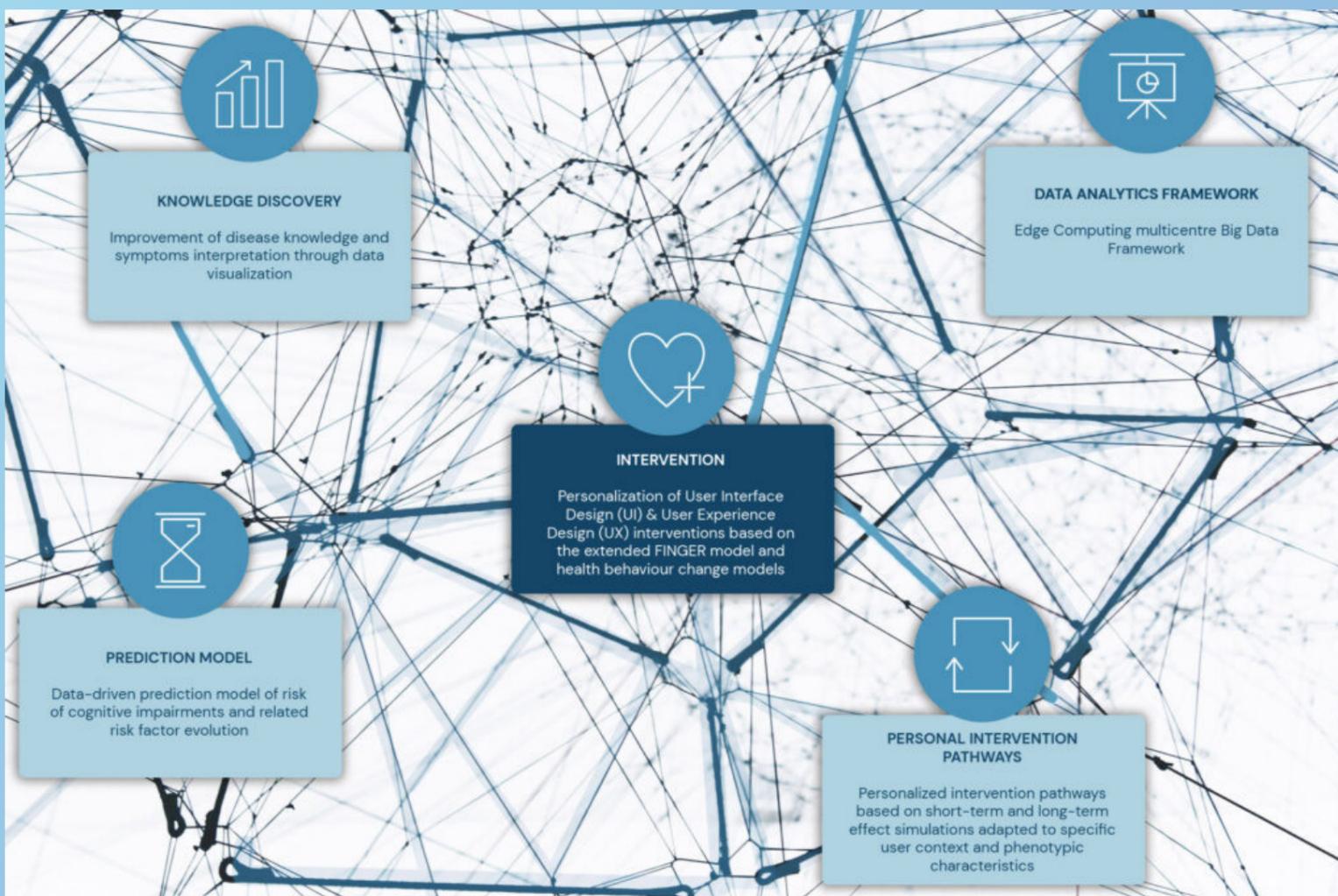
05 Prediction model

Data-driven prediction model of risk of cognitive impairments and related risk factor evolution.

06 Personal intervention pathways

Personalized intervention pathways based on short-term and long-term effect simulations adapted to specific user context and phenotypic characteristics

KNOWLEDGE DISCOVERY
Improvement of disease knowledge and symptoms interpretation through data visualization

DATA ANALYTICS FRAMEWORK
Edge Computing multicentre Big Data Framework

INTERVENTION
Personalization of User Interface Design (UI) & User Experience Design (UX) interventions based on the extended FINGER model and health behaviour change models

PREDICTION MODEL
Data-driven prediction model of risk of cognitive impairments and related risk factor evolution

PERSONAL INTERVENTION PATHWAYS
Personalized intervention pathways based on short-term and long-term effect simulations adapted to specific user context and phenotypic characteristics

The LETHE approach targets the monitoring of the clinical markers, physical activity, cardiovascular risk, cognitive function, nutrition, relaxation and social interaction.

For more information **www.lethe-project.eu**