

DEMENTIA IN EUROPE

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EU-FINGERS

Multimodal precision prevention toolbox for dementia in Alzheimer's disease



+20
years' experience



7
countries



11
partners



EU-FINGERS[®]
EUROPEAN MULTIDOMAIN INTERVENTIONS
FOR DEMENTIA PREVENTION



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Want to find out more about the EU-FINGERS project at the 33rd Alzheimer Europe Conference #33AEC in Helsinki?

Join our parallel session "Precision prevention of Alzheimer's disease and dementia: advancing multidomain interventions" on Monday 16 October 2023, from 17:00-18:15 in room 103B.



Front cover photo: EU-FINGERS Consortium members at the General Assembly Meeting (Stockholm, Sweden, November 2022)

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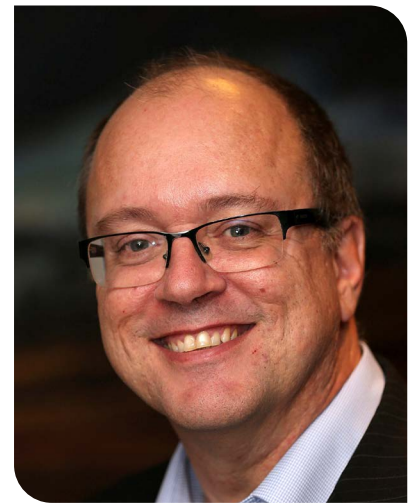
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Illustration, page 5: Martina Krona, from the book "Brain Health" by Miia Kivipelto and Mai-Lis Hellénus (Holm & Holm Books)

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Introduction

“Prevention and risk reduction of Alzheimer’s disease and dementia are relatively new research areas, which are rapidly growing. This research field can greatly benefit from input from the general public. I am very proud of how Alzheimer Europe was able to include their views through the setting up of the EU-FINGERS Advisory Board”.



Jean Georges

I am very pleased to welcome the readers of our Dementia in Europe magazine to this special supplement about the EU-FINGERS project, which is a project funded by the EU Joint Programme – Neurodegenerative Disease Research (JPND), the largest global research initiative aimed at tackling the challenge of neurodegenerative diseases.

EU-FINGERS is a multinational interdisciplinary consortium that has been growing since its launch in 2020 and is part of the global World-Wide FINGERS® network of multidomain trials for dementia risk reduction and prevention. It gathers world-renowned experts in the field of Alzheimer’s disease and dementia, who are leading pioneering multidomain prevention trials.

EU-FINGERS builds upon the successful experience of FINGER: the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability, which demonstrated that a two-year multimodal life-style intervention consisting of nutritional guidance, exercise, cognitive training and control of vascular risk factors benefitted cognition in older people at increased risk of dementia. In EU-FINGERS, the partners aim to develop tools to advance, optimise and scale-up the FINGER model across Europe.

The project started at the beginning of the COVID-19 pandemic, when the Alzheimer’s disease research field was heavily affected by the outbreak, with many activities being delayed or paused. In EU-FINGERS, a large amount of data was already available from partners, and activities were able to start as planned. This special supplement will give you a comprehensive insight into the rationale behind the project and the progress to date.

The supplement starts with a general description of the project and I would like to thank Miia Kivipelto, the project leader, who shares the vision behind the project and her enthusiasm for this important topic. After that, you will

get an overview of the tools and methods the group has been developed in the area of brain health and prevention of Alzheimer’s dementia.

Prevention and risk reduction of Alzheimer’s disease and dementia are relatively new research areas, which are rapidly growing. This research field can greatly benefit from input from the general public, people with an interest in the topic and people experiencing cognitive problems or living with early-stage dementia. I am very proud of how Alzheimer Europe was able to include their views through the setting up of the EU-FINGERS Advisory Board. You will hear from my colleagues about how the Advisory Board brought a unique perspective and actively and meaningfully contributed towards several aspects of the project. As an organisation, we are particularly grateful to the Luxembourg National Research Fund which supported our involvement in this project.

I hope you will find this special supplement on the EU-FINGERS project interesting and that you will share our interest in the important topic of multimodal precision prevention for dementia in Alzheimer’s disease.

Lastly, if you are reading this during our 33rd Alzheimer Europe Conference (#33AEC) in Helsinki, I would like to invite you to join Miia Kivipelto, Project Coordinator of EU-FINGERS, who will speak about multi-modal interventions through European and International collaborations during the plenary session “Brain Health and Prevention” on Tuesday 17 October from 8.30 to 10.00 am. In addition, EU-FINGERS is hosting a parallel session “Precision prevention of Alzheimer’s disease and dementia: advancing multidomain interventions” on 16 October from 17:00-18:15.

Jean Georges
Executive Director, Alzheimer Europe

The EU-FINGERS vision

The EU-FINGERS mission is to develop, test and validate methods and tools for researchers working in the area of brain health and prevention of Alzheimer’s dementia. Project Coordinator Prof. Miia Kivipelto provides an overview of the rationale behind the project as well as the main achievements.



Miia Kivipelto

Prevention of Alzheimer’s disease and dementia

In recent decades, a lot of research has highlighted the impact of several modifiable factors on brain health, including lifestyle and factors related to vascular and metabolic health. We know that there are opportunities to reduce risk and prevent Alzheimer’s disease (AD) and dementia in old age, which are one of the biggest global health challenges of our time.

EU-FINGERS builds upon the successful experience of FINGER: the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability. The FINGER study demonstrated for the first time that a multidomain intervention, combining nutritional guidance, physical exercise, cognitive training, social stimulation and management of vascular and metabolic factors, improved cognitive abilities (memory and thinking) in older adults at high risk of developing dementia. Efficacy of the two-year intervention was beyond cognition, including also reduced risk of cardiovascular disease, physical decline, multimorbidity. The FINGER intervention also proved to be cost-effective.

Working together to bring AD and dementia prevention to the society

EU-FINGERS is a multinational interdisciplinary consortium. We work to develop tools to advance, optimise and scale-up the FINGER model across Europe. These tools include for example methods to accurately measure the level of risk in older adults, both in terms of developing brain pathology and cognitive decline, as well as their prevention potential. This will help to identify individuals with different risk profiles who are more likely to benefit from specific preventative interventions. We know that each person is unique, so prevention programs need to be tailored to the individual’s unique characteristics. This method is called *Precision Prevention* and it is successfully used for other health conditions.

The EU-FINGERS tools and methods are enabling the next generation of clinical trials, to find effective and sustainable multidomain programmes to reduce the risk or to slow down AD and other brain disorders leading to memory problems and dementia.



Tools to measure the prevention potential of individuals, and help early identification of people at risk of experiencing cognitive decline and/or of developing Alzheimer’s dementia, who can benefit most from specific preventive interventions.



Protocol to design and conduct new clinical trials combining lifestyle amelioration and medications supporting brain health. This innovative model allows testing in a scientific way novel preventive and therapeutic approaches.



Online registries for the population, to provide easy access to reliable information on projects related to dementia prevention, with possibility to sign-up and express interest in participating in intervention studies.



Guidelines for clinicians on how to best inform patients with no memory problems (or mild problems) about the results of medical tests related to Alzheimer’s disease, and how to empower the person with no memory problems (or mild problems) in deciding and engaging in an individualised plan to prevent dementia.

Success story: EU-FINGERS achievements to date

During the past three and half years, EU-FINGERS achieved several milestones: first and foremost, the consortium has grown with the inclusion of three research teams, from Hungary, Luxembourg and Spain, thus becoming even more representative of the European landscape and maximising the impact of this JPND-supported project. The expansion enriched availability of relevant data, with a total of about 2,000 participants from preventive trials and over 16,000 participants from observational studies on brain aging and AD. The growth of EU-FINGERS helps Europe and JPND in consolidating their role in leading the development of effective

multidomain strategies on dementia prevention. Secondly, despite the COVID-19 pandemic, the consortium carried several activities, including the development of tools and methods supporting new intervention studies (see graphic), and the launch of two novel multidomain interventions (MET-FINGER, FINGER-NL). These innovative clinical trials are testing the FINGER updated lifestyle intervention with the drug metformin (MET-FINGER) or medical food (FINGER-NL) in four countries. Finally, thanks to Alzheimer Europe, engagement of citizens at-risk of dementia or mild dementia has been achieved, establishing a multinational Advisory Board which participated in fully digital activities and has provided relevant input to carry on the consortium work.

What's coming up next?

As the JPND project approaches its conclusion, the EU-FINGERS work will continue. "We have developed innovative tools, which open new avenues in the field of AD and dementia prevention, and we are testing them in pioneering trials." says Professor Miia Kivipelto, adding that "EU-FINGERS is also providing much needed guidance to healthcare professionals on how to support the increasing number of older adults who access memory clinics to have answers on their concerns about dementia risk. We have today many effective tools to support brain health, and we work to make them available across Europe".

The FINGER model: Reducing the risk of memory problems



Capitalising on the EU-FINGERS data library to develop precision prevention for Alzheimer's disease and dementia

EU-FINGERS brings together worldwide renowned experts in the field of Alzheimer's disease (AD) and dementia, joining knowledge, experience and data from seven European countries, to define innovative solutions for early detection of risk and for prevention.

A main strength of the EU-FINGERS Consortium is the availability of data, from both observational studies (Figure 1) and innovative intervention studies (Figure 2). These data cover the whole at-risk continuum of AD, including asymptomatic at-risk individuals, early symptomatic people (Mild Cognitive Impairment (MCI), Prodromal AD) and individuals with early-stage dementia. A large variety of clinical and other data is available from these populations, including genetic, neuroimaging measures, EEG (electroencephalogram), and biomarkers derived from the blood or the cerebrospinal fluid.

Overall, these data are a unique and extraordinary asset, which the EU-FINGERS team is leveraging to answer key research questions to advance

the science of risk reduction and prevention. For instance, data from the observational cohorts are used to identify novel biomarkers for early detection of risk for developing brain pathology and cognitive impairment, while exceptional data from innovative long-term, multidomain intervention studies enable the assessment of individuals' characteristics, which can predict higher adherence and beneficial response from preventive interventions. Taken as a whole, these findings can enable the definition of precision prevention strategies, based on multimodal interventions, thus defining the right preventive approach for the right person at the right time. Given the lack of widely-available disease-modifying drugs for AD, precision prevention can play a central role in curbing the growing number of cases.















GEDOC	Amsterdam Dementia Cohort	Gipuzkoa Alzheimer Project	Semmelweis MCI Neuroimaging Cohort	AlzEpi Cohort Observational Library	STOP ALZHEIMER DEBA Project	ALFA+
 Sweden N > 12,000	 Netherlands N > 3,000	 Spain N > 400	 Hungary N = 110	 Hungary N ≈ 110	 Spain N = 700	 Spain N > 400
 Memory clinic patients with and without dementia diagnosis	 Memory clinic patients with and without dementia diagnosis	 Pre-clinical Alzheimer's Disease from the general population	 Memory clinic patients with and without MCI and dementia	 Memory clinic patients with and without MCI and dementia	 +60 years old from the general population	 Cognitively unimpaired (45-65 years old) at risk of dementia
Since 1990s	Since 2000s	Since 2011	Since 2012	Since 2014	Since 2015	Since 2016

Figure 1. EU-FINGERS observational cohorts





















FINGER	LipiDiDiet	MIND-ADmini	PDP	GOIZ ZAINDU
 Finland	 Partners	 Partners	 Luxembourg	 Spain
 N = 1260 (60-77 years) At risk of dementia (general population)	 N = 311 (55-85 years) Prodromal Alzheimer's Disease	 N = 96 (60-85 years) Prodromal Alzheimer's Disease with lifestyle risk factors	 N = 200 At risk of dementia (general population)	 N = 125 (60+) At risk of dementia (general population)
 2-year trial (ended 2014) 5, 7 & 11-year follow-up	 2-year trial (ended 2015) 1-4-year extension 1-2-year open label	 6-month (+6 months extension in Sweden)	 6-year trial (2018-2024) Annual follow-up	 1-year trial (2018-2019)
 Multimodal intervention	 Multinutrient (medical food)	 Multimodal intervention + medical food	 Multimodal intervention	 Multimodal intervention

Figure 2. EU-FINGERS Intervention studies

A few words from EU-FINGERS consortium members



András Horváth



Gábor Csukly



Mikel Tainta



Pablo Martinez-Lage

“The EU-FINGERS Consortium includes Hungary, a relatively under-represented country in the large clinical cohorts on AD. Namely, the network includes the AlzEpi Cohort Observational Library. The databases consist of neuroimaging, neurophysiology, neuropsychology, cerebrospinal fluid and blood biomarkers. The major interest of the research group is to improve the early diagnostic procedures and to develop biomarkers for better understanding of the contributors to disease progression. They are pioneers in the field of network theories in AD and one of the leading centres investigating the link between neural hyperexcitability and cognitive decline.”

András Attila Horváth, National Institute of Mental Health, Neurology and Neurosurgery and Gábor Csukly, Semmelweis University

“CITA Alzheimer Foundation is a non-profit research institution in Basque Country, Spain. We aim to connect our people with the latest research advances in dementia and Alzheimer’s disease treatment. Our previous research on brain health revealed a high prevalence of modifiable dementia risks factors in our older population. We have developed the CITA GO-ON study to assess how to prevent cognitive decline and dementia through brain-healthy habits. We understand that becoming part of the EU-FINGERS community is crucial to achieving this objective as we can only understand our research collaboratively. We also believe it is crucial to be as close and connected with the participants and patients as the EU-FINGERS study intends to be.”

Mikel Tainta and Pablo Martinez-Lage, CITA Alzheimer Foundation

“Our work would be unattainable without international collaboration such as EU-FINGERS. Europe has consistently served as a frontrunner in dementia prevention research, a feat that has invariably been a multinational effort. Multinational trials offer greater insights and ultimately prove more definitive than national trials alone.”



Tobias Hartmann

“Combinostics develops software tools for the entire patient pathway in cognitive disorders. Prevention is obviously an essential part in solving the global challenge of dementias and because of that, the important work done in EU-FINGERS is of interest to us.”



Jyrki Lötjönen

Tobias Hartmann, Deutsches Institut für Demenzprävention

Jyrki Lötjönen, Combinostics

Disease models for prediction based on risk and response to dementia preventive interventions

Developing disease models

Tobias Hartmann, from the Deutsches Institut für Demenzprävention (Germany), provides an update on the development of the disease models and tools for accurate prediction of risk and prevention potential:

“In general, we’ve discerned the importance of aligning models with authentic long-term data from clinical trials. This understanding stems from the fact that short-term effects don’t always provide a consistent reflection of observations noted after intervals of two, three, or more years. Consequently, a model’s value increases with its ability to predict over longer durations. Biomarkers of all types have proven exceedingly effective in linking experimental models with clinical outcomes. In comparison to our starting point, the advancements in the current models represent a significant leap forward in predicting the best-suited interventions for individual patients and in forecasting the likeliest outcomes. Notably, these predictions can be formulated as early as the preliminary stages of treatment initiation are about to begin. One of the lingering hurdles we face is integrating all individual findings into a comprehensive model. By integrating more variables into the final model, we will encounter fewer patients where biomarker and risk-factor predictions enter zones of ambiguity, making prognosis challenging.

In EU-FINGERS, models are developed to better predict which patient will experience cognitive decline and how severely the decline will progress, will it eventually progress to dementia. The most relevant question addressed is, which kind of intervention might be most beneficial for which patient. To address these questions a wide array of methodology is employed. In the case of EU-FINGERS, extensive use was made of artificial intelligence, biomarkers, cellular and animal models. Notably this includes a huge array of clinical samples from the EU-FINGERS data library. Still today, few trials significantly changed the course of cognitive decline in Alzheimer’s disease. Barely a hand full of those trials studied people at risk and those with Mild Cognitive Impairment due to Alzheimer’s disease, this is why

those clinical samples are highly informative when it comes to predicting treatment response. Moreover, FINGER and LipiDiDiet participants were followed for many years, allowing to draw long-term conclusions.

These preliminary models are then validated to address clinical relevance and cost effectiveness. The results from data analyses within the EU-FINGERS trials provide new insights on predictors of shorter- and longer-term response to preventive interventions including long-term adherence, efficacy and beneficial effects.”

Testing of disease models and prediction tools: assessing response to preventive interventions

We spoke to Jenni Lehtisalo and Tiia Ngandu from the Finnish Institute for Health and Welfare (THL) who shared with us further investigations made in the FINGER trial:

Jenni Lehtisalo: “We investigated the effect of the FINGER multi-domain lifestyle intervention on incident cardiovascular disease (CVD) in older people focusing on cerebrovascular and coronary events. We showed that the incidence of cerebrovascular events was lower in the intervention than the control group. Among those with history of CVD events before entering the trial, and also among those who were older than 69 years at the beginning, the incidence of total CVD including coronary and cerebrovascular events was lower in the intervention than the control group.”

Tiia Ngandu: “We also investigated how intervention adherence affects cognition in the FINGER trial. Findings demonstrated that a better adherence to FINGER lifestyle intervention was linked to more cognitive benefits, as were healthy lifestyle changes adopted during the intervention. These findings indicate that multidomain lifestyle changes are beneficial for cognitive functioning, but future interventions should be more intensive, and supporting adherence is essential.”



Tobias Hartmann



Jenni Lehtisalo



Tiia Ngandu

Designing the first multimodal prevention trial, integrating pharmacological and non-pharmacological interventions

The EU-FINGERS Harmonisation Guidelines

For the first time, the FINGER multidomain prevention model, which promotes dementia risk reduction by ameliorating lifestyle and vascular health, is being tested in association with pharmacological interventions, such as medical food or drugs supporting brain health. Following international recommendations (i.e., National Institute on Aging 2017; World Health Organization 2019) on the need of further research on the efficacy of multidomain interventions for dementia risk reduction, the EU-FINGERS team developed a document to best deliver them. This document, called the “Harmonisation Guidelines”, outlines the aims, design and methodology of innovative trials, and ensures the safety of the trial participants, as well as the integrity of the data collected. The Harmonisation Guidelines support alignment and harmonisation of data from clinical trials across different settings and populations, enabling joint data analysis and thus robust results on efficacy of interventions for dementia risk reduction and prevention. The Harmonisation Guidelines build on the experience from the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability (FINGER), and are also pondering information from EU-FINGERS trials and FINGER-like trials that are part of the World-Wide FINGERS (WW-FINGERS) global network on multidomain trials for dementia risk reduction. Linked to the Harmonisation Guidelines, are protocols for individual clinical trials, including those combining pharmacological and non-pharmacological interventions tested in the EU-FINGERS project.

Novel multidomain interventions for risk reduction and prevention of AD and dementia

EU-FINGERS bridges the gap between pharma- and non-pharmacological interventions in the Alzheimer’s disease (AD) field, by running unique novel trials such as MET-FINGER and FINGER-NL. With these trials, EU-FINGERS is at the forefront of innovative approaches for dementia risk reduction, which are moving towards precision prevention. In this article, we outline the added value of both studies.

MET-FINGER

MET-FINGER (Alina Solomon and Mariagnese Barbera from the University of East Finland, Kuopio): Research and analysis of drug development for AD including repurposing approach - meaning identification of new uses for approved drugs - has led to the identification of metformin as drug which can hinder processes leading to the accumulation of brain damage, and can also support healthy aging. Metformin has thus been chosen as the first drug to be tested in association with the FINGER lifestyle multidomain intervention, to assess the ability of this novel approach to prevent cognitive decline. Metformin is a drug approved for the treatment of diabetes mellitus, and has been used for several decades with good safety records.



Alina Solomon



Mariagnese Barbera

EU-FINGERS partners have compiled the protocol for the MET-FINGER trial combining metformin and multidomain lifestyle intervention to prevent cognitive impairment and disability in older adults at increased risk of dementia. Based over three sites in Sweden, Finland, and the UK, the MET-FINGER trial started to recruit participants in early 2023 and expects to enrol 600 people aged 60-79 years, with risk factors for dementia, including people carrying the APOE4 gene. Participants are randomised to receive either an upgraded FINGER lifestyle-based intervention, alone or in association with metformin, or a self-guided lifestyle program (reference group). The lifestyle intervention includes five main components: physical exercise, diet, cognitive training and social stimulation, as well as control of vascular and metabolic risk factors.

MET-FINGER is the first in its kind study, providing the basis for forthcoming trials combining non-pharmacological and pharmacological interventions towards Precision Prevention. Results will inform drug development for AD, reduce intervention failure rate of new trials.



FINGER-NL (Marissa Zwan and Wiesje van der Flier from Alzheimer Center Amsterdam, Amsterdam UMC & Sebastian Köhler and Kay Deckers from Maastricht University): As part of a world-wide effort to replicate and build on the FINGER results, FINGER-NL (FINGER-Netherlands), a new trial within EU-FINGERS, started in January 2022 to investigate the efficacy of a two-year multidomain lifestyle intervention to prevent cognitive decline in older Dutch adults. This study is part of the overarching national Maintaining Optimal Cognitive function In Ageing (MOCIA) project (www.mocia.nl).

The lifestyle programme in the FINGER-NL study comprises of seven lifestyle components related to brain health, including physical activity, cognitive training, cardiovascular risk factor management, dietary counselling, sleep counselling, stress management, social activities, and one nutritional product (Souvenaid®) that was successfully tested in the LipiDiDiet and MIND-ADmini trials to investigate the effects of a multidomain intervention - combining lifestyle and medical food - on the cognitive abilities of older people.

Just 18 months into the study, FINGER-NL completed the recruitment (N=1,210) in five Dutch research institutes. Participants in this study are between 60 and 79 years old. The first participants have now entered the second year of the intervention, so the first follow-up visits have taken place. The results of this study can be used for more specific lifestyle advice, with the goal of preventing cognitive decline amongst older people.



Wiesje van der Flier



Kay Deckers



Marissa Zwan



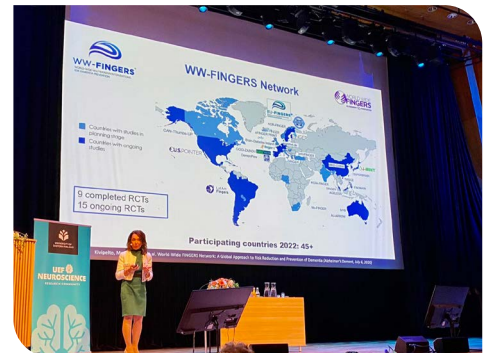
Sebastian Köhler

EU-FINGERS in pictures

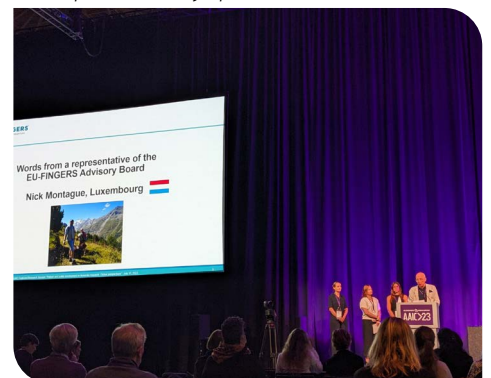
Snapshots from the Kuopio Alzheimer Symposium 2022 and the Alzheimer's Association International Conference 2023



Kuopio Alzheimer Symposium, Kuopio, Finland, August 2022



Miia Kivipelto presents the EU-FINGERS project at the Kuopio Alzheimer Symposium



EU-FINGERS talk, Alzheimer's Association International Conference, Amsterdam, July 2023

Facilitating the recruitment of participants in clinical trials

We also worked to deliver digital tools such as online registries. Carolina Minguillón (Barcelonaβeta Brain Research Center, BBRC) and Marissa Zwan (Alzheimer Center Amsterdam, Amsterdam UMC) explain how this is conducted.



Carolina Minguillón



Marissa Zwan

The importance of online registries

Recent developments on disease-modifying treatments for Alzheimer’s disease (AD) including the approval of drugs that can slow-down cognitive decline in (early) symptomatic patients represents a turning point for AD research. In parallel, preventive clinical trials with these drugs are already being conducted in asymptomatic individuals in the preclinical stage of the disease. The current implementation of prevention trials is based on the recruitment of cognitively healthy people who are not normally found at the clinical sites where studies are conducted. In this context, registries including potential eligible individuals who are willing to participate in studies focused at maintaining or improving brain health, appear fundamental.

“The registry keeps me informed about research studies in which I can participate. I have participated in a research study before and I hope to receive more study invitations in the future. For me this is a meaningful way to contribute to finding solutions for diseases like Alzheimer’s disease”, Dutch Brain Research Registry participant.

New EU-FINGERS online registry: requirements and progress

Building on the existing core features, recommendations were compiled for an optimised design of online registries on a larger European scale, with the final aim to develop a new online registry within EU-FINGERS to

streamline recruitment into clinical trials for precision prevention of AD and dementia.

A registry should be designed to link suitable participants who are searching for a clinical study that matches their medical history, as well as their needs and motivations. Minimal features include: 1. a website providing information for a lay audience in local languages, on participation and instructions, active studies, study results, as well as the information about the registry for potential investigators; 2. it should allow interested persons to register and registration should contain essential data for the purpose of the registry and pre-screening procedures; 3. a software should be developed and implemented to allow automatic online pre-screening possibilities and matching with the studies; 4. the possibility to perform an online Informed Consent procedure, and 5. to have in place retention and communication plans with people registered.

The workflow of the EU-FINGERS registry is proposed as follows: 1. Participants are able to register and to be pre-selected based on the series of questionnaires. Upon registration and online consent, they can be contacted once their profile matches a study, they get a confirmation and their answers are registered in the database. 2. An external investigator can send a study request to the Scientific Committee. If approved, an automated search is made on the database. 3. Those matching the study criteria will receive a study invitation. Once this invitation is accepted, the study participant will be contacted by the external investigator.

Core features of existing online brain health registries



	Barcelonaβeta Dementia Prevention Research Clinic	Dutch Brain Research Registry
Website	https://www.prevenciondemencia.org/	www.hersenonderzoek.nl
Target population	People (60-80 years) with a cognitive decline interested to participate in a study on the disclosure of risk factors for dementia	People (18 years and older) with or without a brain disease interested to participate in Dutch brain studies
Characteristics & Use	Registry containing the a priori eligible persons interested in participating in studies, using an algorithm designed to include participants that met certain criteria	Large cohort of people interesting to be invited for research studies / Automatic pre-screening of eligible participants based on participant profile / To inform and engage the public in research with studies, their results and events
Key indicators	~1,000 persons registered in the first week >50% of participants were eligible for other ongoing prevention studies at the BBRC	> 40,000 people signed up to the registry Successful recruitment of 38,000 participants for a variety of over 85 studies across the Netherlands

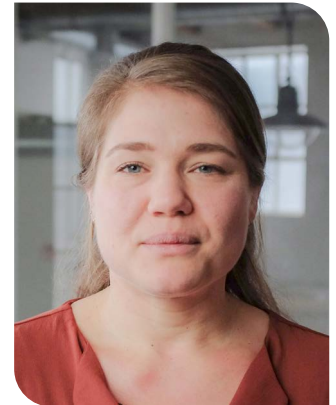
► More effective recruitment for researchers and decrease of screening failure rates, showing efficient recruitment strategy via online registries

Dementia risk communication

In this article, Heleen Hendriksen and Leonie Visser from Alzheimer Center Amsterdam, Amsterdam UMC share promising insights obtained from the EU-FINGERS project on their work on dementia risk communication.



Heleen Hendriksen



Leonie Visser

The importance of risk communication

Encouraging evidence suggests that the incidence of dementia can be lowered by means of personalised prevention interventions aimed at risk factors^{1,2} *. An important question is how we can best inform people about these risk factors and their risk of developing dementia. According to the World Health Organization, risk communication is ‘an exchange of real-time information, advice and opinions between experts and people facing threats to their health, economic or social well-being’³. Risk communication helps people to make informed decisions and take action to protect themselves. It is thus an important part of a personalised medicine approach to dementia prevention. However, communicating about dementia risk is challenging. The concept of risk is difficult for people to comprehend and for clinicians to explain.

Identifying opinions and providing recommendations

In a survey study, we collected opinions of 160 European memory clinic professionals on communication about dementia risk and prevention. A vast majority of clinicians indicated to talk about dementia risk and prevention with their patients, but they would appreciate communicating skills training or online tools to support them in these complex conversations⁴. In the context of the EU-FINGERS, LETHE (www.lethe-project.eu) and the Dutch ABOARD⁵ (www.aboard-project.nl) projects, we have made some efforts to provide clinicians guidance and support.

As a first step, we synthesised available guidelines and evidence in the oncology field, resulting in practical recommendations on how to communicate about dementia risk (see Figure)⁶. We also concluded that risk communication should be based on a process of shared decision making, taking into account that risk implies, by definition, uncertainty. In addition, we systematically evaluated the effects of different communication strategies on affective, cognitive and behavioural outcomes in a randomised controlled study⁷. Results showed that the

use of natural frequencies, risk visualisation, and neutral risk framing were most beneficial in terms of individual’s recall of information provided by the clinician. Actively attending to emotions was also shown as important in terms of information recall and individuals’ satisfaction with the clinician and the provided information. This last recommendation was underlined by the members of the EU-FINGERS Advisory Board, who provided valuable feedback on these risk communication guidelines (see Figure)^{6,8}.

Providing online tools

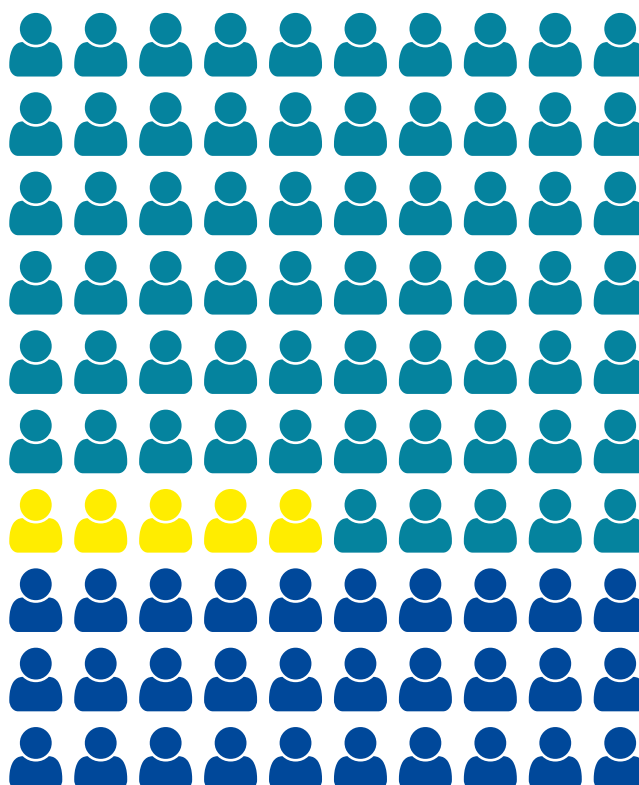
To promote adherence to these risk communication guidelines and support communication in memory clinic practice, we developed an online platform of tools called ‘ADappt’ (www.ADappt.health)⁹. ADappt comprises modules for clinicians that: 1. facilitate shared decision-making, 2. help address important pieces of information during consultations, 3. interpret diagnostic test results of patients with mild cognitive impairment, and 4. improve communication of test results including dementia risk. Furthermore, for patients and care partners, we developed tools to empower them in expressing their (information) needs and preferences (e.g. video-animations)^{10,11}. These modules together foster a personalised medicine approach, where care, including dementia risk communication, is attuned to the individual patient¹².

In order to gain more insights on user experiences and the feasibility of implementing ADappt in clinical practice, we performed a usability study in four Dutch memory clinics. Some learnings from this study are that patients and care partners highly appreciated the patient tools, but that some had difficulties accessing the video-animations online. Clinicians reported sufficient levels of usability and satisfaction with ADappt on questionnaires, and in interviews we learned that we could improve our training and written instruction. These insights help to improve ADappt and facilitate successful implementation.

**There are a number of references used in this article, which you can find on page 18.*

Dementia risk communication guidelines

- 1 **Use plain language**, i.e. present focused, well-structured, and logically sequenced information, and reduce or eliminate clinical and statistical jargon.
- 2 **Avoid exclusive use of qualitative risk descriptors**, e.g. 'a high risk' or 'many people'.
- 3 **Present precise and defined risk information**, such as percentages e.g. '65 % of individuals similar to you', or frequencies e.g. '65 out of 100 individuals like you'.
- 4 **Be aware that order and framing affect risk perception, therefore use mixed framing**, e.g. '35 out of 100 individuals will develop dementia in 3 years time (negative framing) and 65 out of 100 individuals will not develop dementia in 3 years time (positive framing)'.
- 5 **Use visuals in addition to numerical risks**, e.g. bar charts or icon arrays.
- 6 **Use an incremental risk format highlighting how an intervention changes risk**, e.g. by displaying the risk with and without intervention in the same icon array.
- 7 **Include and repeatedly draw attention to the time interval over which a risk occurs**, e.g. 'this graph displays the 5-year risk and this graph the lifetime risk of developing dementia'.
- 8 **Present absolute risks** (instead of relative), e.g. 'the lifetime dementia risk for people without hypertension is 25% compared to 35% for people with hypertension'.
- 9 **Do not use 'number needed to treat' since it reduces understanding**, e.g. 'if 33 individuals would be treated, 1 would not develop dementia because of the treatment'.
- 10 **Actively attend to emotions, by providing space for emotional expressions and acknowledgment**, e.g., 'I can imagine this is a lot to take in all at once, how do you feel?'.
- 11 **Provide post-communication (psychological) support**, e.g. discuss the possibility of scheduling follow-up visits.



Adapted from Visser et al. (2021) and Frisoni et al. (2023)

Public Involvement

Public Involvement (PI) refers to research that is carried out 'with' the public and not 'to', 'about' or 'for' them. It means that people affected by a disease or condition contribute to how research is designed, conducted and/or disseminated. In this article, Ana Diaz and Cindy Birck from Alzheimer Europe present the PI work conducted in the EU-FINGERS project.



Cindy Birck



Ana Diaz

The EU-FINGERS approach

Several reasons have been put forward as to why it is important to involve members of the public in this way in research, including that their involvement can make research more relevant, appropriate and transparent, can bring the unique perspectives of people living with or affected by a condition (“lived experience”) and that it is a democratic principle to involve them in research that concerns their lives. In line with these ideas and principles, the EU-FINGERS consortium wanted to ensure that the perspectives of people affected by or with an interest in Alzheimer’s disease and brain health were reflected in the project’s work.

Alzheimer Europe worked closely with the project coordinator Karolinska Institutet and partners to plan how to involve members of the public with different backgrounds and from different countries in the project.



Anna Rosenberg

“As the coordinating institution, we find this collaboration very fruitful, and it has truly shaped our consortium’s research. A big strength has been the involvement of a multinational and mixed group of people, with different and unique lived experiences with the disease. Because of this, each topic has been approached from many different angles which for us researchers is the ideal situation”, said Anna Rosenberg, Karolinska Institutet.

In early 2021, the EU-FINGERS Advisory Board (AB) was set up and since, the members have met regularly to discuss issues related to the project. The AB includes 16 members with and without cognitive problems (i.e. older adults who had participated in prevention studies, who were at a higher risk of dementia, with Mild Cognitive Impairment or mild dementia, or were informal carers) from seven different European countries (Finland, Hungary, Luxembourg, Netherlands, Spain, Sweden, United Kingdom).

“Brain health is key for individual and social well-being. Research in this field is hard and the professionals who choose it need and deserve all our support. As a part of society, it is my duty to respond to questions or requests from researchers and scientists”, said Mercedes, Spanish member of the AB.

The work of the Advisory Board

The work of the AB has been the result of a great and very strong collaboration between all projects partners who were involved in the preparation and co-facilitation of meetings and reporting. The success of this work is also based on a very active and motivated AB, whose members have been meaningfully engaged in meetings from the very beginning of the project, and have provided very valuable input in core aspects and issues linked to the research activities conducted by the consortium.

“I want to share information with researchers. I am glad to have noticed that we as people with dementia are listened to as equal partners”, said Petri, Finnish member of the AB.

The meetings were dedicated to presenting and discussing the different tools and concepts which are part of the EU-FINGERS Toolkit and members were able to express their opinions, suggestions and concerns. Some examples of the topics addressed in the meetings include the relevance of risk reduction and dementia prevention, the terminology used and how to communicate these topics to different audiences, online registries for dementia prevention, combined interventions including lifestyle interventions and pharmaceutical treatments, concerns about risk disclosure and recommendations about how this should be disclosed.

Due to the COVID-19 pandemic, the work and activities of the AB were mainly conducted online. Although working online was, at times, a big challenge for some members of the AB, this approach worked well because Alzheimer Europe, the partner leading this work, has extensive experience in working in online meetings with people with cognitive problems. Moreover, local partners were key in providing support when needed. There is a face-to-face meeting planned before the project ends.

The EU-FINGERS Advisory Board members come from seven European countries



Presence at international conferences

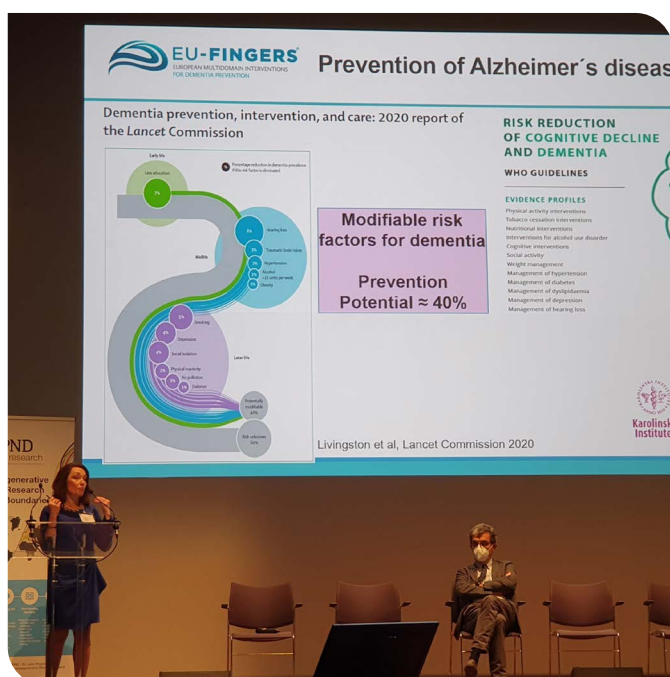
The PI activities carried out within EU-FINGERS have been very well represented at scientific conferences. The most recent public-facing activity of the project came at the Alzheimer’s Association International Conference (AAIC) which took place in Amsterdam (Netherlands) in July 2023. A Featured Research Session was dedicated to PI in dementia research. We were glad that several members were in attendance to present the EU-FINGERS approach, including Nick, who shared his experience as a member of the AB.

The 9th Kuopio Alzheimer Symposium was organised in August 2022 in Kuopio (Finland). The work of the EU-FINGERS AB was presented during a satellite meeting dedicated to the topic of PI, as well as in a plenary session. Chris Roberts and his wife Jayne Goodrick gave a speech at the conference and referred to the relevance of PI in research and to their own personal experiences as members of the EU-FINGERS AB.

EU-FINGERS will also have a presence at the Alzheimer Europe conference to be held on 16-18 October 2023 in Helsinki (Finland). A talk will be dedicated to the involvement of the public in brain health research. A member of the EU-FINGERS AB will be present and will refer to his personal experience of this work.

EU-FINGERS in pictures

Snapshots from the JPND/JPCo-fuND2 Midterm Symposium, Brussels, April 2022



A few words from representatives of the Advisory Board



Nick Montague

“I am **Nick Montague**, 67 years old and I am living in Luxembourg. I have direct family experience of dementia and I am very interested by the topic of brain health. My involvement with the AB has taught me and continues to teach me a lot. The meetings are every three months, online, in small groups, with individuals across Europe and are managed very professionally by the facilitators. For me this is a very trusted and safe environment where I can say, honestly, what I think. I find that being part of this group, discussing various parts of dementia, is very worthwhile, challenging and hopefully helpful to the researchers. For me to know that this research has the participation of people with a dementia diagnosis, and is not just confined to ‘experts’ as an intellectual exercise, makes the research much more authentic.”



Chris Roberts and Jayne Goodrick

“My name is **Chris Roberts** and I am the current Chair of the European Working Group of People with Dementia. I am from Wales (UK) and was diagnosed with early-onset mixed dementia in my early 50’s. People with dementia have a right to be involved in research. I think that it’s very important for any expert by experience to be involved in any research around them. Taking part in research gives you hope and value when previously I had none, this is really good for your confidence. We live with the illness and we can make a huge difference by collaborating with professionals. It’s a great pairing. We need to work together to make progress in the field. PI needs to be a true productive collaboration.”

“I am **Jayne Goodrick**, Chris’s wife. We became involved in research and this opened up a whole new world that we had never been involved in before. It gives people hope and, even if there is nothing that can be done about the particular condition, you are contributing to the research and future generations with whatever that condition may be. In our case it’s dementia, because Chris has mixed dementia. With EU-FINGERS, the methodology behind it is good for you anyway, even without a diagnosis. It can help the condition and what’s good for the heart is good for the brain.”



Members of the EU-FINGERS consortium and Advisory Board participated in the 2023 Alzheimer's Association International Conference

The COVID-19 pandemic effects on lifestyle and psychosocial factors relevant to brain health



Francesca Mangialasche

Results from the survey are crucial to adapt forthcoming multidomain prevention trials, in terms of content and methods to deliver the intervention and monitor adherence and efficacy. We know that psychosocial factors were negatively affected by the pandemic and need to be addressed to promote brain health but we also know there has been an increase in the use of digital tools among older adults, which can be leveraged to reach people when necessary or preferred, and we can facilitate personal adaptation in delivering lifestyle interventions. Assistant Professor Francesca Mangialasche, Scientific Coordinator of this initiative, tells us more.

The World-Wide-FINGERS-SARS-CoV2 survey

The COVID-19 pandemic has had a major impact in older adults, with consequences for brain health and dementia risk related to both the direct effects of the SARS-CoV-2 infection, and negative changes in lifestyle and management of chronic disorders which can affect cognition. To measure these changes, the World-Wide FINGERS (WW-FINGERS) global network of multidomain trials for dementia has launched a multinational survey - WW-FINGERS-SARS-CoV2 - which is linked to the WHO Global Forum on Neurology and COVID-19, where members of the EU-FINGERS consortium are participating.

The EU-FINGERS consortium had a key role in data collection, which started in Finland, among the participants of the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and disability (FINGER). The EU-FINGERS collected survey data also from Hungary, Spain, Sweden and the Netherlands, with overall more than 10,000 respondents across the

consortium. Overall, the survey monitored changes in lifestyle, access to medical care of chronic disorders, and mental wellbeing in older adults at-risk of dementia, recruited both from the community and memory clinics. The survey was deployed during different stages of the pandemic, from the first wave in 2020 (Finland) to later waves in 2021. Despite the EU-FINGERS countries having different measures in place to curb the COVID-19 spread, from lock-down to less-restrictive recommendations, common patterns have emerged, in terms of negative changes in lifestyle, such as reduced physical activity and social contacts, increased consumption of unhealthy snacks, more frequent sleep problems or experiences of loneliness (see Figure 1). Notably, a significant proportion of the survey respondents reported worsening of memory and general health. There was also a significant increase in the use of digital solutions, both for maintaining social connection and to access social and healthcare services.

*There are two references used in this article, which you can find on page 18.

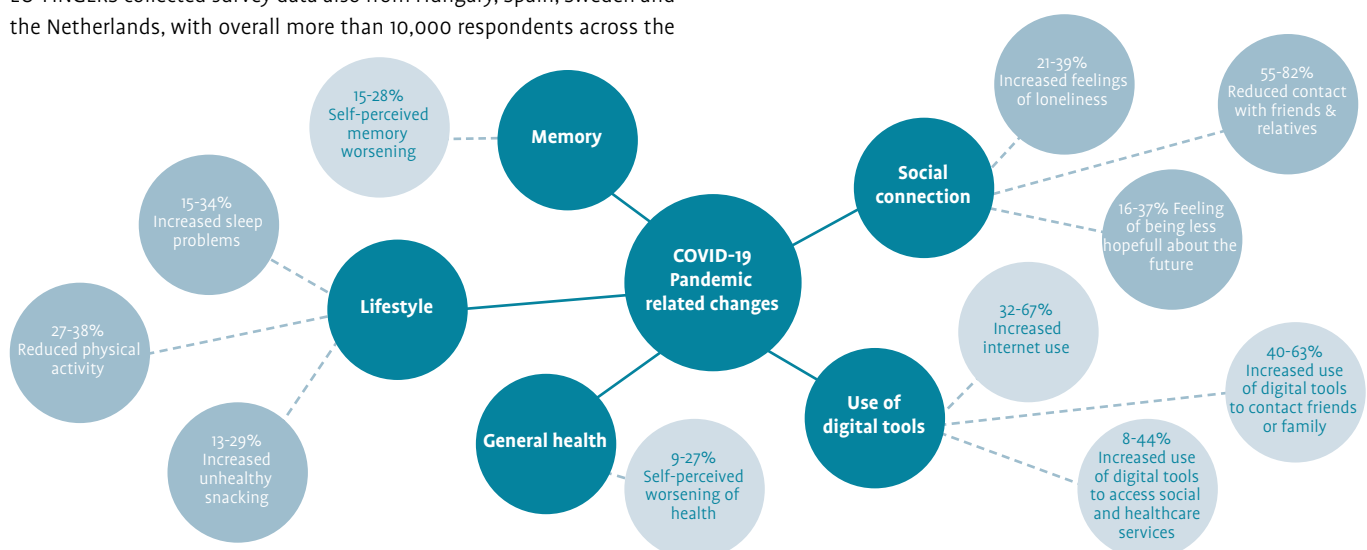


Figure 1. Self-reported change in lifestyle factors, self-rated health, social connection indicators and use of digital tools during the COVID-19 pandemic in older adults. Published data from Finland and the Netherlands^{13, 14} *. plus unpublished material from Hungary, Spain, and Sweden.

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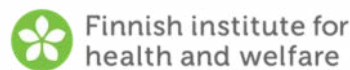
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The EU-FINGERS Partners

EU-FINGERS is a multinational interdisciplinary consortium that has been growing since its launch in 2020 and is part of the global World-Wide FINGERS® network of multidomain trials for dementia risk reduction and prevention.



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About JPND

The EU Joint Programme – Neurodegenerative Disease Research (JPND) is the largest global research initiative aimed at tackling the challenge of neurodegenerative diseases. JPND aims to increase coordinated investment between participating countries in research aimed at finding causes, developing cures, and identifying appropriate ways to care for those with neurodegenerative diseases - www.jpnd.eu





For more information on the EU-FINGERS project,
please visit our website: <https://eufingers.com>



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