COMFORTage

Prediction, monitoring and personalized recommendations for prevention and relief of dementia and frailty

Funded by the European Union

COMFORTage

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www.comfortage.eu

1 About us

2 Projects ongoing

3 Projects projected

4 Key messages

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2 Projects ongoing

3 Projects projected

4 Key messages

About us,
Ace Alzheimer Center Barcelona

COMFORTage
Prediction, monitoring and personalized recomendations for prevention and relief of dementia and frailty

ace alzheimer center BARCELONA

The foundation: Mission, vision & values

Mission

Ace Alzheimer Center Barcelona is a non-profit entity at the service of people with Alzheimer's disease or other dementias, and their caregivers. To do so, we carry out actions in the fields of diagnosis, treatment, research, training and awareness.

Vision

At Ace Alzheimer Center Barcelona we work to make someday Alzheimer's history.

HOLISTIC CARE MODEL

DIAGNOSIS

MEMORY CLINIC
- Global and multidisciplinary treatment
- Neurology
- Geriatrics
- Psychiatrics
- Neuropsychology
- Case management
- Social work
- Nurse
- Pharmacy

TREATMENT

INNOVATIVE THERAPIES

THERAPEUTIC APHERESIS UNIT
- Neurology
- Intensive Care Medicine
- Apheresis nursing

NEUROMODULATION UNIT
- TMS and tDOS

DAY CARE

DAYCENTRE
- Late-onset dementia

DAY HOSPITAL
- Early-onset dementia

MEMORY WORKSHOPS
- PPI & SmartBrain Stimul'Art

RESEARCH

FUNDAMENTAL RESEARCH
- Genetics
- Molecular biology
- Artificial intelligence and big data

APPLIED RESEARCH
- Clinical trials
- Non-pharmacological studies

SOCIAL AND LEGAL RESEARCH

TRAINING AND AWARENESS

ACADEMIC
- Internal training
- Global Research Summit

GENERAL
- Internal training
- External training
- Caregivers' classroom
- Awareness of society

COMMITMENT TO SOCIETY

- Programme for the care of people without resources
- Attend to non-scheduled visits
- Monitoring and assessment of the individuals who take the Facememory test, a self-administered digital tool for assessing memory
- Training for families
- Social and cultural activities for individuals with dementia
- Funding for research projects

Projects ongoing: CSLP

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🧠 *Scientific Relevance of Computerized Spontaneous Language Processing (CSLP) in MCI and Dementia Research*

Aspect	Description
🧪 **Digital Biomarker**	CSLP provides objective, quantifiable data on language use, which reflects underlying cognitive functions.
🧭 **Early Detection**	Subtle changes in language (fluency, structure, prosody) can be detected before clinical symptoms of dementia appear.
📉 **Monitoring Progression**	Enables longitudinal tracking of cognitive decline through repeated, non-invasive assessments.
🏠 **Remote Usability**	CSLP can be integrated into home-based or telehealth platforms for large-scale or continuous monitoring.
🔄 **Integration with Other Biomarkers**	Enhances diagnostic accuracy when combined with neuroimaging, fluid biomarkers, or cognitive testing.
🧠 **Multidimensional Analysis**	Allows both **linguistic** (lexical, syntactic, semantic) and **acoustic** (prosody, pauses, pitch) features to be extracted and analyzed via AI tools.

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> Front Neurosci. 2023 Sep 7:17:1221401. doi: 10.3389/fnins.2023.1221401. eCollection 2023.

Harnessing acoustic speech parameters to decipher amyloid status in individuals with mild cognitive impairment

Fernando García-Gutiérrez [# 1], Marta Marquié [# 1 2], Nathalia Muñoz [1], Montserrat Alegret [1 2], Amanda Cano [1 2], Itziar de Rojas [1 2], Pablo García-González [1], Clàudia Olivé [1], Raquel Puerta [1], Adelina Orellana [1 2], Laura Montrreal [1], Vanesa Pytel [1], Mario Ricciardi [1], Carla Zaldua [3], Peru Gabirondo [3], Wolfram Hinzen [4 5], Núria Lleonart [1], Ainhoa García-Sánchez [1], Lluís Tárraga [1 2], Agustín Ruiz [1 2], Mercè Boada [1 2], Sergi Valero [1 2]

> Alzheimers Res Ther. 2024 Feb 2;16(1):26. doi: 10.1186/s13195-024-01394-y.

Unveiling the sound of the cognitive status: Machine Learning–based speech analysis in the Alzheimer's disease spectrum

Fernando García-Gutiérrez [1], Montserrat Alegret [1 2], Marta Marquié [1 2], Nathalia Muñoz [1], Gemma Ortega [1 2], Amanda Cano [1 2], Itziar De Rojas [1 2], Pablo García-González [1], Clàudia Olivé [1], Raquel Puerta [1], Ainhoa García-Sanchez [1], María Capdevila-Bayo [1], Laura Montrreal [1], Vanesa Pytel [1], Maitee Rosende-Roca [1], Carla Zaldua [3], Peru Gabirondo [3], Lluís Tárraga [1 2], Agustín Ruiz [1 2], Mercè Boada [1 2], Sergi Valero [4 5]

> Am J Speech Lang Pathol. 2023 Sep 11;32(5):2075-2086. doi: 10.1044/2023_AJSLP-22-00403. Epub 2023 Jul 24.

Automated Classification of Cognitive Decline and Probable Alzheimer's Dementia Across Multiple Speech and Language Domains

Rui He [1], Kayla Chapin [1], Jalal Al-Tamimi [2], Núria Bel [1], Marta Marquié [3 4], Maitee Rosende-Roca [3], Vanesa Pytel [3], Juan Pablo Tartari [3], Montse Alegret [3 4], Angela Sanabria [3 4], Agustín Ruiz [3 4], Mercè Boada [3 4], Sergi Valero [3 4], Wolfram Hinzen [1 5]

Listening for Alzheimer's Clues: Machine Learning Analysis of Multidomain Speech Features for Cognitive Impairment Screening

Josep Blazquez-Folch[1], Berta Calm[1], Fernando García-Gutiérrez[1], Montserrat Alegret[1,2], Nathalia Muñoz[1], Amanda Cano[1], Maria Victoria Fernández[1], Andrea Miguel[1], Ariadna Solivar[1], Itziar De Rojas[1,2], Alejandro Valenzuela-Seba[1], Pablo García-González[1,3], Raquel Puerta[1,3], Clàudia Olivé[1,3], Maria Capdevila-Bayo[1,4], Álvaro Muñoz-Morales[1], Paula Bayón-Buján[1], Laura Montrreal[1], Adelina Orellana[1,2], Gemma Ortega[1,2], Pilar Sanz-Cartagena[1], Maitee Rosende-Roca[1], Yahveth Cantero-Fortiz[1,2], Miren Jone Gurruchaga[1], Lluís Tárraga[1,2], Christopher Butler[1,5,6], Xavier Montalban[1,2,7], Mercè Boada[1,2], Agustín Ruiz[1,2,8,9], Marta Marquié[1,2], Sergi Valero[1,2]

Projects ongoing: PUNTO

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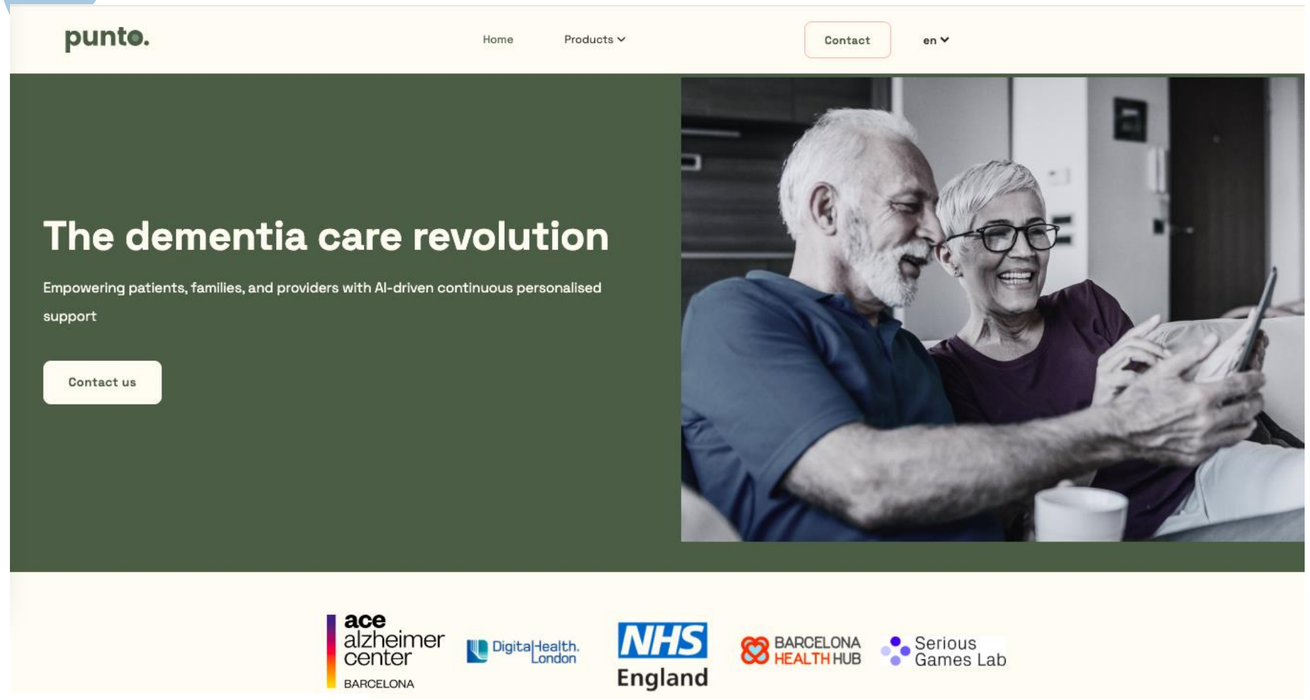

punto.

PuntoClinic

Manage and monitor

Speech-based digital biomarker for cognitive assessment to facilitate and improve remote monitoring of disease progression and early detection.

Remote pre-screening

Select patients for clinical trials and new treatments.

PuntoCare

Smartphone/tablet app that offers daily support to people with cognitive impairment and their families

- Personalised daily care plans: cognitive stimulation exercises, physical activity, healthy habits, relaxation, etc.
- Articles providing clinically validated information curated by experts

Management

- AI assistant that interacts with content and provides answers, tips and strategies when you need them
- Symptom diary that facilitates monitoring and management

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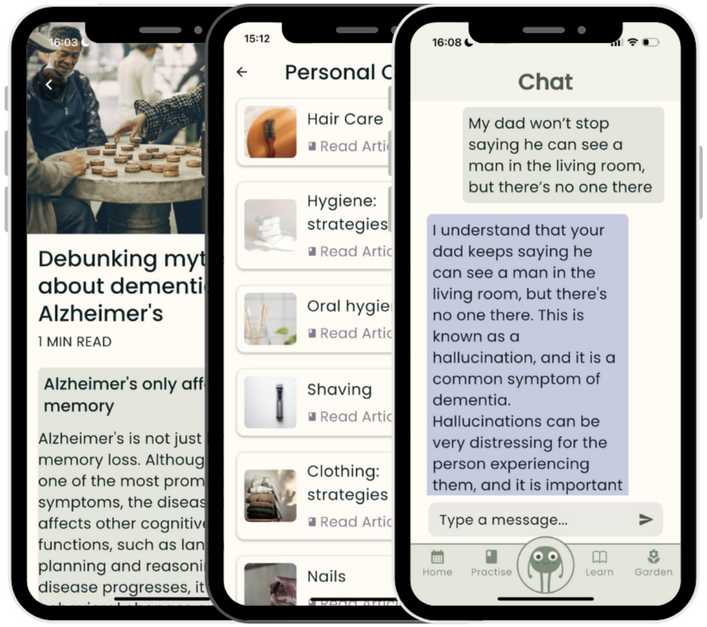

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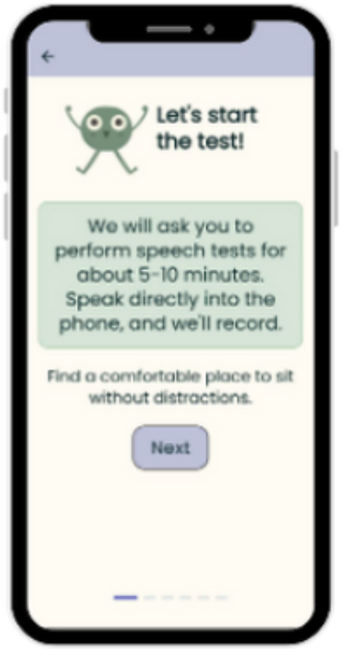

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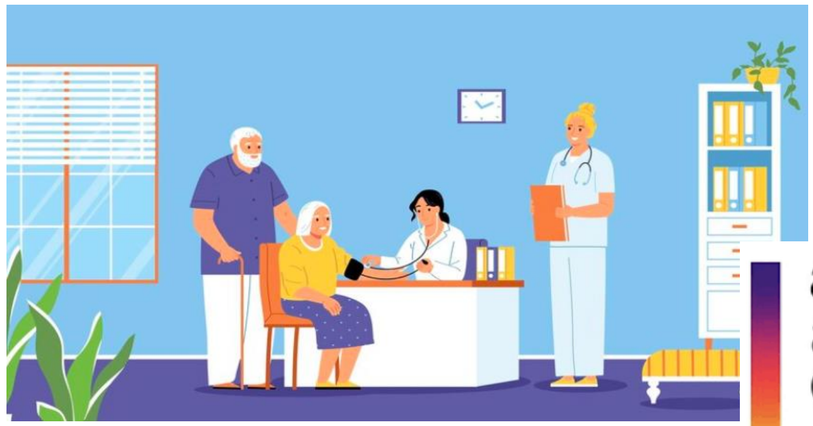

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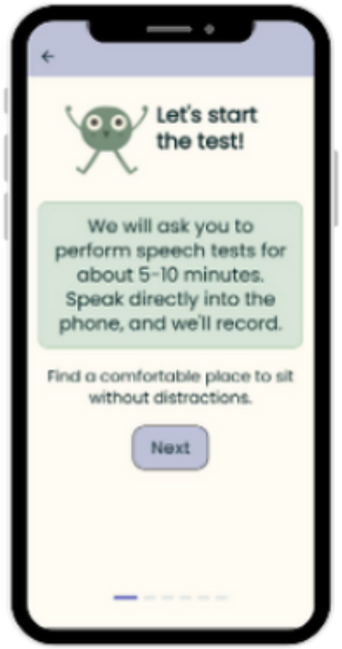

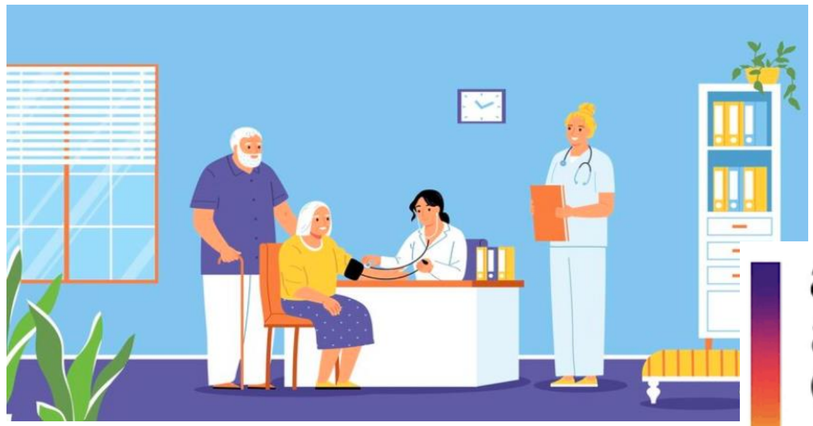

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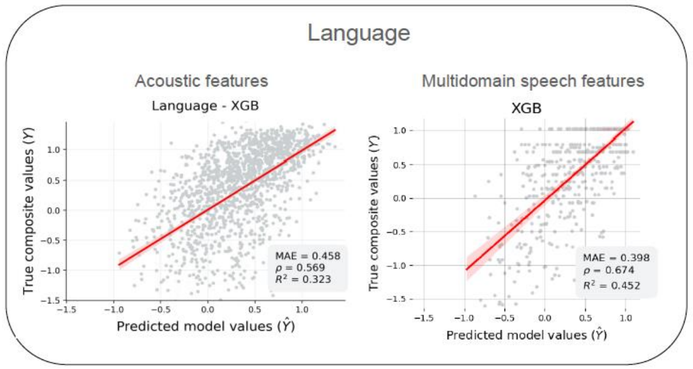

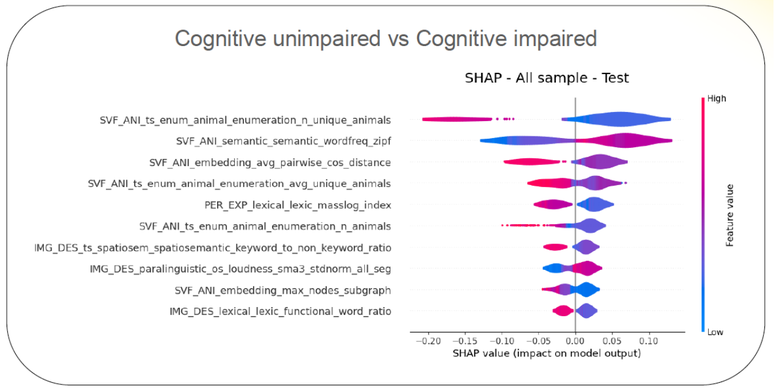

Projects ongoing: Pharmacies and cognitive impairment

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What about if we look for people with cognitive difficulties (but not in my office)

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OBJECTIVES

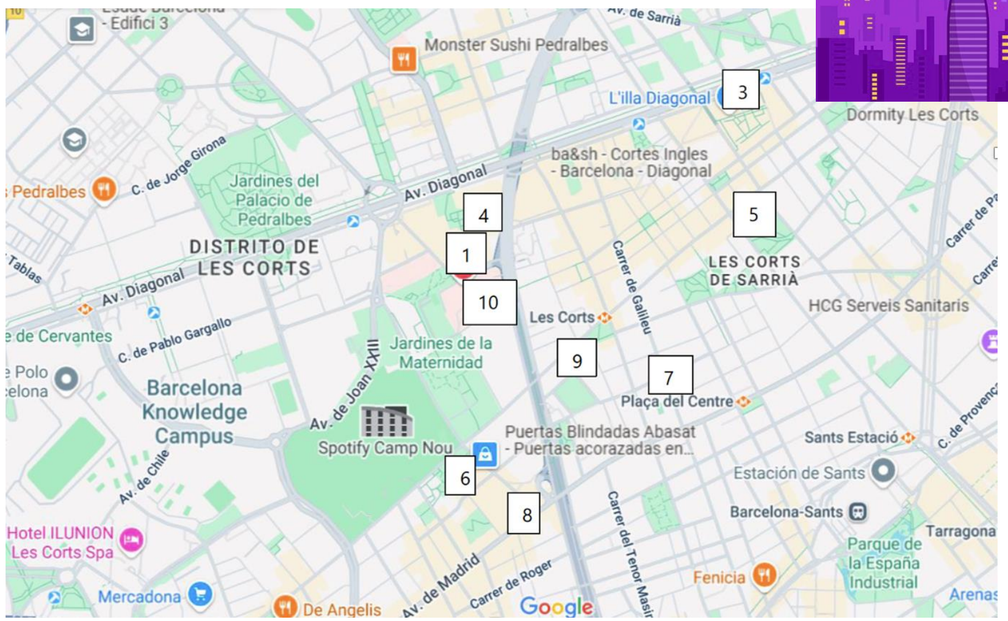
- Detect subtle cognitive alterations in advance of those evident on traditional clinical assessments.
- Optimize clinical referral to specialized units when markers of risk are detected.

DEPLOYMENT

Digital Screening in Pharmacies
Citizens who visit participating pharmacies invited to take part voluntily

Screening Procedure
Consists of e-consent. basic demographic data collection, and language evaluation with AI analytics

Follow-Up
Results communicated to participants by phone or email, with referral offered if needed



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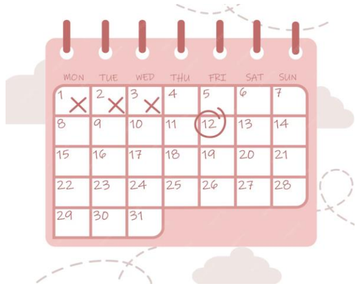

NUTRICIA
LIFE-TRANSFORMING NUTRITION

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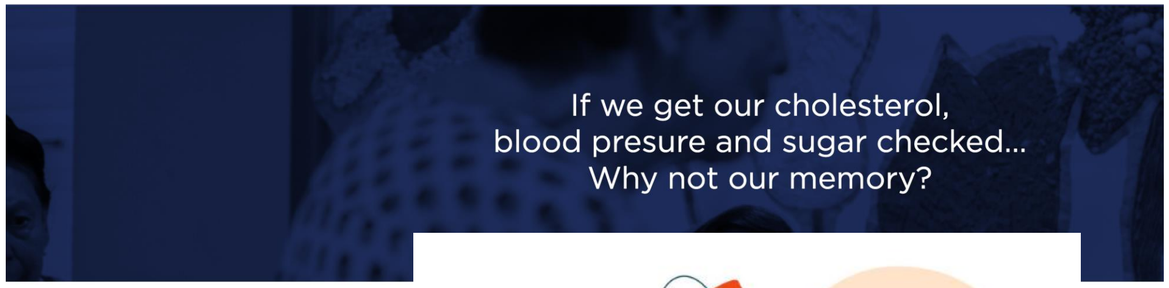
Alzheimer's The Foundatior

Home | making Alzheimer's history > Open House Initiative

What do we do: Open House Initiative



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Projects projected : Menopause and cognitive impairment

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Projects projected : Menopause and cognitive impairment

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🌺 *Cognition and Memory Problems during Menopause*

Aspect	Description
🔄 **Hormonal Changes**	Decline in estrogen affects neurotransmitters like acetylcholine, linked to memory and attention.
🧠 **Subjective Cognitive Decline**	Many women report "brain fog," forgetfulness, or difficulty concentrating during perimenopause.
🧪 **Neurobiological Correlates**	Brain imaging shows changes in hippocampal activity and connectivity during menopause transition.
📉 **Impact on Daily Function**	Memory lapses and reduced focus can affect professional and personal functioning.
💡 **Differentiation from MCI**	Menopausal cognitive symptoms may mimic early MCI but are often reversible or fluctuate with time.

Projects projected : Menopause and cognitive impairment

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Projects projected : Taking care of our patients

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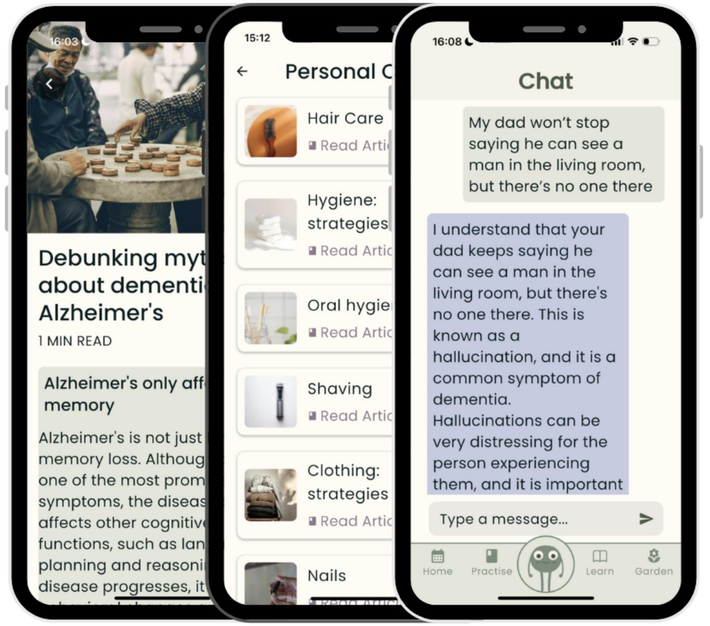

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Projects projected : Taking care of our patients

HOLISTIC CARE MODEL

DIAGNOSIS

MEMORY CLINIC

- Global and multidisciplinary treatment
- Neurology
- Geriatrics
- Psychiatrics
- Neuropsychology
- Case management
- Social work
- Nurse
- Pharmacy

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- Genetics
- Molecular biology
- Artificial intelligence and big data

APPLIED RESEARCH

- Clinical trials
- Non-pharmacological studies

SOCIAL AND LEGAL RESEARCH

TRAINING AND AWARENESS

ACADEMIC

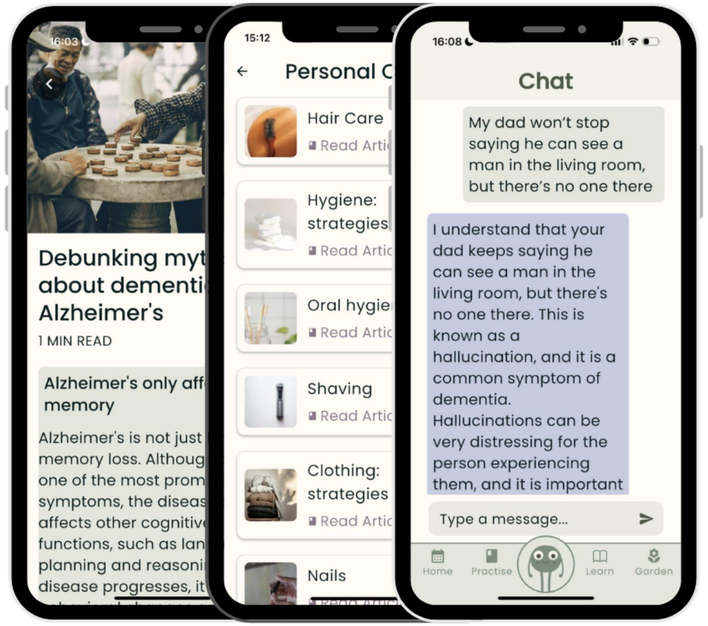
- Internal training
- Global Research Summit

GENERAL

- Internal training
- External training
- Caregivers' classroom
- Awareness of society

COMMITMENT TO SOCIETY

- Programme for the care of people without resources
- Attend to non-scheduled visits
- Monitoring and assessment of the individuals who take the Facememory test, a self-administered digital tool for assessing memory
- Training for families
- Social and cultural activities for individuals with dementia
- Funding for research projects



Projects projected : Taking care of our patients

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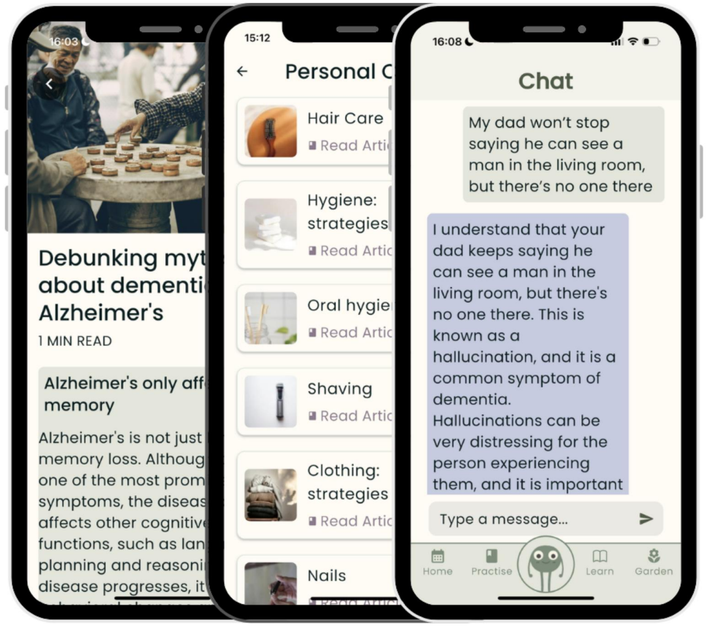
Summarized Care Elements by Category and Profile (Sorted)

Category	Profile	Title
Activities of Daily Living	Caregiver	Hydration Strategies, Practical Guide for Feeding People with Dementia, Sleep, and Dementia
Activities of Daily Living	Patient	Sleep Disorders in Dementia
Activities of Daily Living	Patient, Caregiver, MCI	Food Pyramid, Diet Recommendations
Basic Concepts	Caregiver	Alzheimer's Dementia, what is Mild Cognitive Impairment? Types of mild cognitive impairment.
Basic Concepts	Caregiver, Patient	Lewy Body Dementia, Frontotemporal Dementia, Vascular Dementia, Alzheimer's in Young Pe...
Basic Concepts	Patient, Caregiver	General Concepts, Debunking Myths about Alzheimer's, Stages of Dementia
Behavioral Alterations	Caregiver	Agitation, Aggressiveness, Delirium, Hallucinations, Depression, Anxiety, Apathy...
Behavioral Alterations	Patient	Depression, Anxiety, Apathy, Irritability, Euphoria
Cognitive Impairments	Patient	Amnesia, Aphasia, Apraxia, Executive Function



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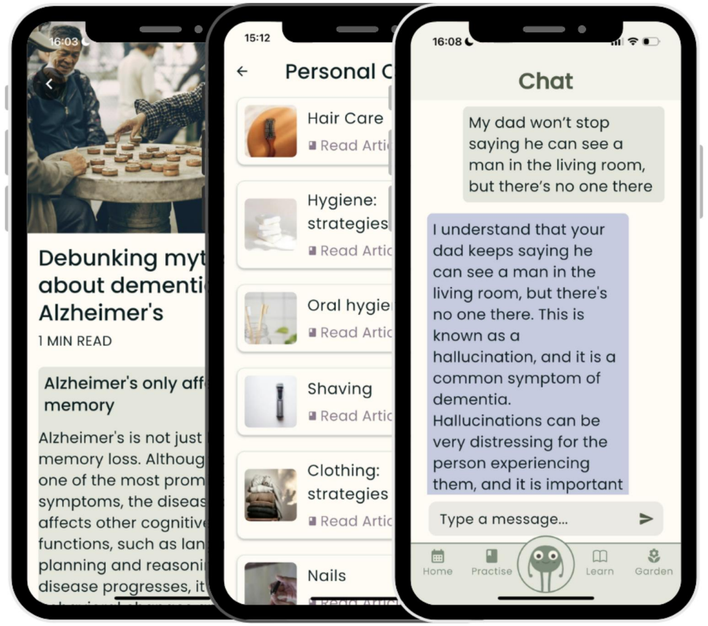
Risk Prevention	Caregiver	Urinary Incontinence, Fall Prevention, Trips and vacations, Fecal Incontinence, How to ...
Risk Prevention	Patient, Caregiver, MCI	Prevention of Mild Cognitive Impairment
Treatment	Patient, Caregiver	Transdermal pharmacological treatment, Pharmacological treatment
Well-being	Caregiver	Mindfulness, Physical Exercise

ETC...



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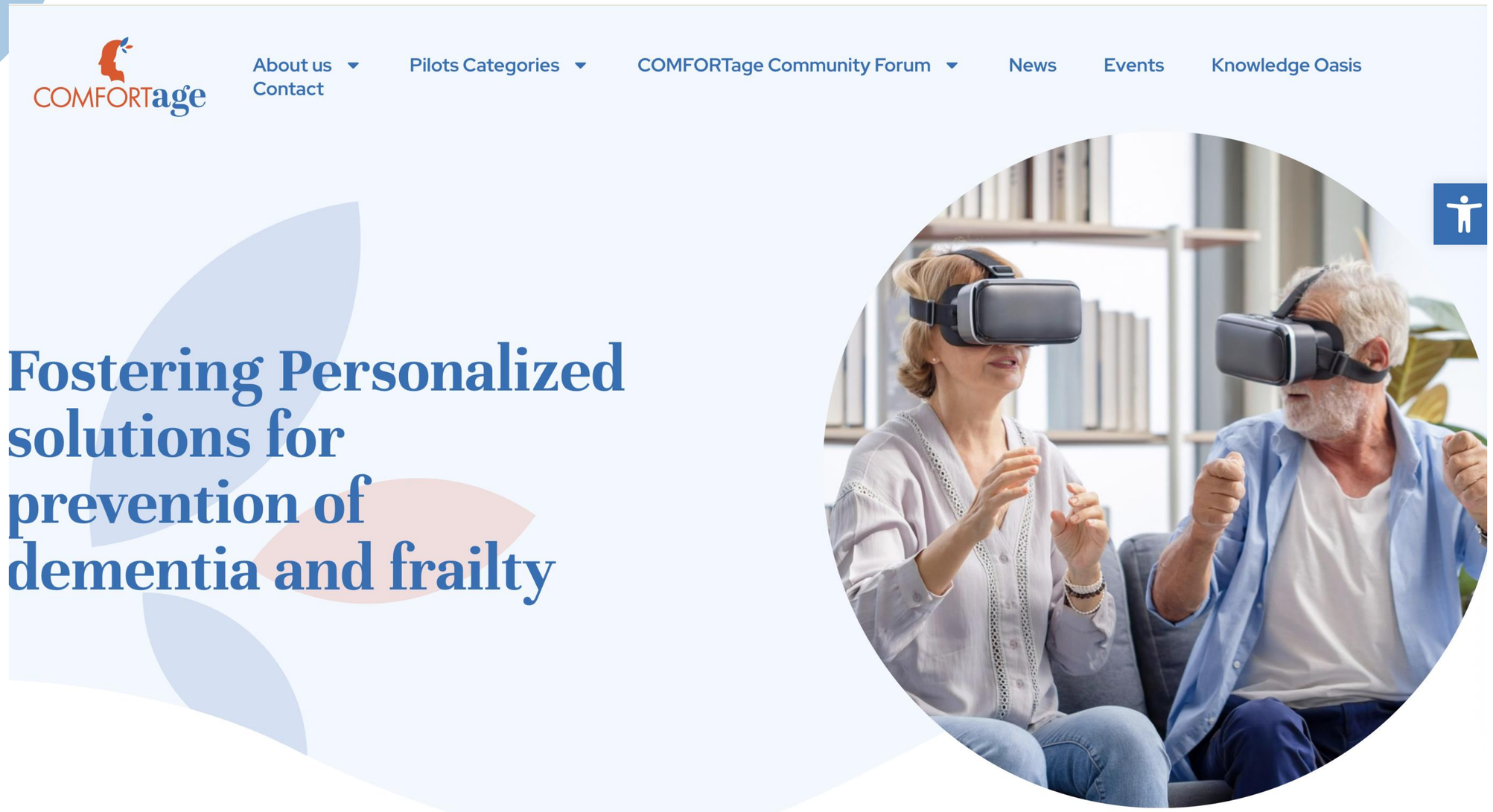

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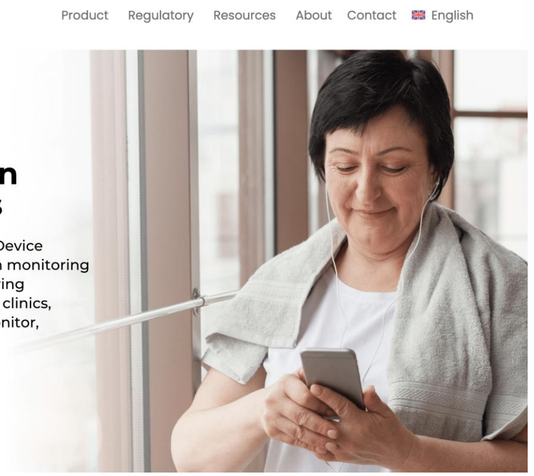

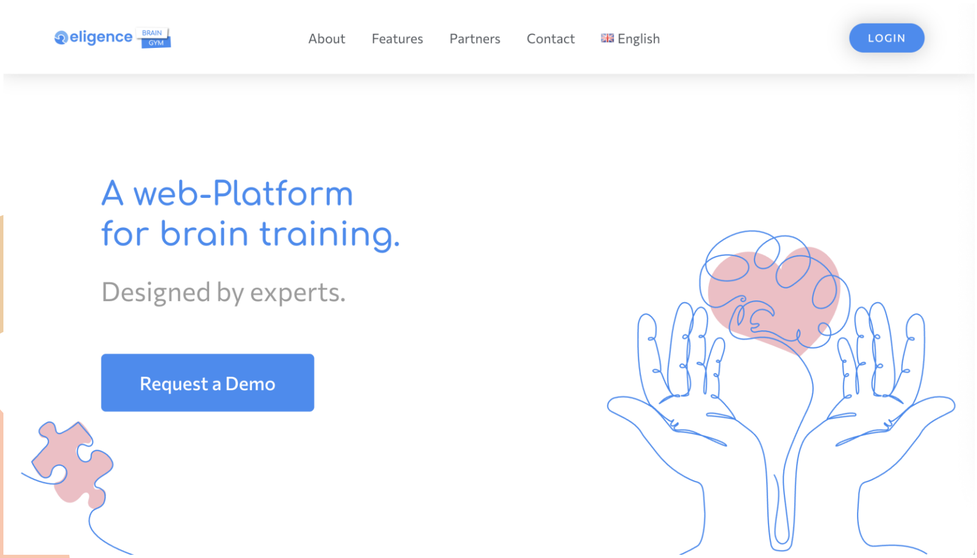

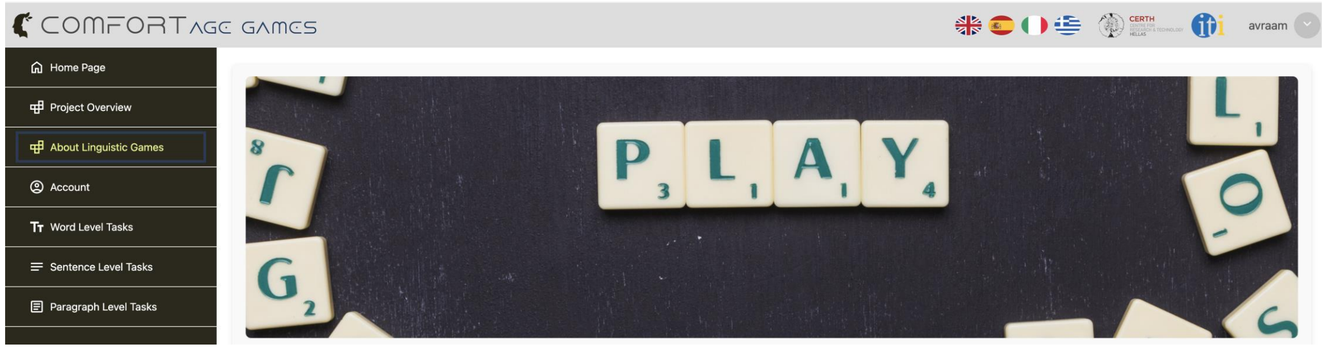

Others...

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Alzheimer's Drug Discovery Foundation

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ABOUT US | ALZHEIMER'S DISEASE | RESEARCH | EVENTS & CONFERENCES | NEWS | WAYS TO GIVE

SpeechDx
Unlocking Alzheimer's Disease through Voice-Based Biomarkers

Speech-based biomarkers for Alzheimer's disease offer several exciting possibilities:

WHAT IF SPEECH COULD UNLOCK EARLY DETECTION OF ALZHEIMER'S DISEASE?

In the early stages, Alzheimer's symptoms can be subtle and mistaken for normal age-related cognitive changes. While many people and their families may not recognize the signs as indicative of a serious cognitive disorder, early diagnosis can result in better quality of life and more effective treatment for those with

SCAP · AD

Screening Cognitivo y Abordaje Personalizado para Alzheimer y otras Demencias

EMPIEZA AHORA

Entrar

Financiado por la Unión Europea NextGenerationEU | Plan de Recuperación, Transformación y Resiliencia | Gobierno de España · Ministerio de Ciencia e Innovación · Instituto de Salud Carlos III

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Alzheimer's | The Foundation | What do we do | Collaborate | Donate

Home | making Alzheimer's history > Check your memory online for free with FACEMEMORY®

Get your free memory assessment

*Facememory has to be done by **tablet or PC.***

ENTER THE FACEMEMORY® TEST

You are about to start Facememory ®, the first online test for memory assessment. This test has been designed by an expert team in cognition, with more than 25 years of experience in the memory tests of people over 50 years old.
Ace Alzheimer Center Barcelona, a leading non-profit organization in Spain, was founded in 1995 with the aim of meeting the growing demand in the diagnosis and treatment of people with cognitive impairment and dementia, especially Alzheimer's disease. With a multidisciplinary team of more than 85 people, we offer personalized attention and comprehensive support to patients and their families. Currently, we are an international benchmark in diagnosis and research, especially in clinical, neuropsychological, social and basic research.

Each year, the Ace Alzheimer Center's Diagnostic Unit cares for about 7,000 people, of which more than 4,000 suffer from dementia (3,000 of them, Alzheimer's type). Among other research activities, we participate in numerous global participatory clinical trials targeting all stages of the disease course.

The neuropsychology team at Ace Alzheimer Center Barcelona, which will be in charge of reviewing and evaluating the results of this test, has successfully reviewed the memory of more than 3,000 people with a test similar to this one.

FACEmemory®
A computerized version of the Spanish adaptation of the Short Form of the Face-Name Associative Memory Exam

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Select language English

ENTER

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New projects...

COMFORTage
Prediction, monitoring and personalized recomendations for prevention and relief of dementia and frailty

(some few) Key Messages

1. Digitalization Extends Our Reach

> Leveraging digital platforms allows us to assess cognitive risk *beyond the clinical setting*, bringing early detection directly to the communities where people live.

2. Towards Early, Accessible Cognitive Screening

> We are redefining early detection through remote, user-friendly assessments—empowering individuals to seek support before symptoms become disabling.

3. From Patients to Populations

> Our model scales: we move from one-on-one evaluation to population-level screening, making cognitive care more **preventive, proactive, and inclusive**.

4. A Synergy Between Clinical Expertise and Technology

> Partnership with merges validated clinical protocols with digital design, ensuring that innovation is always aligned with care quality and scientific rigour.

5. Research-Driven and Scalable

> Our model is embedded in a framework of clinical research and continuous improvement—**ready to scale** and adaptable to different health systems and populations.