



**Improving
the Quality of
Life for
people with
neurological
disorders**



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Confidentiality

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Our goal

To **improve the quality of life** of people with neurological disorders

For David, one of the co-founders, this has started as a **personal project**, as he has a daughter, Marina, who is affected by drug-resistant Epilepsy.

For more than 19 years, Marina has been suffering unexpected and uncontrolled seizures.

The company is founded in 2014 based on two main pillars:

- **Technology & AI**
- **Social commitment.**



David and Marina's Story
Presentation video from MWC and TV3



COMPANY

Created in 2014

Based on two main pillars:

1 Technology & AI

2 Social commitment.

mjn·neuro

+ 10 years

COLLABORATIONS

- Barcelona, Madrid (SP)
- Oxford (UK)
- Kehl-Kork (GER)
- New York (US)

+ 8 hospitals
worldwide



12
employees

TEAM

- 4 management engineers
- 3 software & AI engineers
- 2 economists & administration
- 2 commercial & marketing
- 3 interns

PROJECTS

- Horizon2020 SME Instrument Ph2
- Retos Colaboración
- CDTI Misiones for Alzheimer
- EIT Health in European consortium
- Colaboración Público-Privada

+ 6 R&D
projects
with international
consortium

FUNDS RAISED

- 3 investment rounds 1,6M€
- Government loans 550k€
- European projects 4,7M€
- Spanish projects 3,1M€
- Prizes 250k€

10.2 M€
in private & public
funding



EIT Health is supported by the EIT,
a body of the European Union



Who are we?



David Blázquez

CEO 

eada® business school
barcelona



CEO, founder and project leader.

Engineer specialist in artificial vision, robotics, machine construction & industrial projects for more than 19 years. Management development program by EADA.

He owned an engineering company for 12 years, working for the automotive, plastic, quality & manufacturer sectors; he was electrical engineering chief for four years in machinery construction.

Technical

R&D

Regulatory

Production

Clinical

Projects

Financials



Jordina Arcal

Deputy CEO 

 **Innovators
Under 35**

 **TOP 50**



Deputy CEO, adjunct in business development. (ESOP* beneficiary).

Engineer & Serial entrepreneur, MIT Innovator Under 35 & EU TOP 50 Award.

After her more than 6 years of experience working as a technology promoter, business developer and sales area manager in the R&D field, she has developed skills in business development, management and market analysis.

Strategy

Business Development

International

*ESOP: Employee Stock Ownership Plan by phantoms stock option rights and rules

Who are we?



Josep Lluís Arcos
CSO



Chief Scientific Officer. Engineer and PhD (ESOP* beneficiary)

He has over 13 years of experience in CSIC, a prestigious research centre. Its mission is to carry out high-quality research in AI while maintaining a good balance between basic research and applications.



Xavi Raurich
CTO



CTO, co-founder and Technical chief. Engineer

He specialises in digital processes for companies, programming and digital solutions. He has experience in electronics and product development. He has had his own company for ten years.



Jesús Valls
COO



COO, Operations chief. Engineer and master (ESOP* beneficiary)

He has more than nine years of experience in production and logistics. He is an expert in software engineering and AI programming, including algorithms and mobile applications.



Clara Gelabert
CFO



Accounting Department and financials. Business management

She has over eight years of experience working on accounting and financials for other companies and collaborating with NGOs.



Fernando Atienza
Quality manager



Quality manager. Engineer and master

He is an expert in the regulatory affairs of medical devices and manufacturing processes. He has vast experience in health product management, procedural improvement and application of norms and regulations.

*ESOP: Employee Stock Ownership Plan by phantoms stock option rights and rules

Who are we?



Dra. Gloria Durán

CMO, Chief Medical Officer

"M.D. specialized in neurology & epilepsy"



Lluís Munsó

Software engineer

"Web environments, databases, server configuration expert"



Àlex López

Communications and software engineer

"Artificial intelligence expert and software developer"



Dr. Gustavo Torres

Neurologist, M.D.

"Clinical relations with patients and professionals"



Marina Blánquez

Marketing Assistant

"The engine of mjn-neuro, dynamics in social networks"



Anna Calixto

Customer Relations

"Expert in customer service, focused on the patients' view".



Jessica Borrell

Administrative Department

"Administrative and accounting"

Advisory Board



Adrián Trejo

Director of the Neuroscience Service of the Corachan Clinic. Neurodevelopment unit for children. Management of neuro and emergence service in Hospital Remei Barcelona. Instituto de Neurociencias Vithas Madrid. CEO of Synaptia Health Projects.



Dra. Beatriz López

Degree in Engineer, Computer Science and Information Systems. PhD in Artificial Intelligence. Machine learning coordinator in healthcare eXiT Group. Professor at the University of Girona. Academic coordinator of the Biomedical Engineering Degree.



MD. Luis M. Aras Portilla

Graduate in medicine and surgery. CEO ApoyoDravet and executive president of Impulso Cognitivo. INDRE coordinator for International Research Network on Dravet Syndrome and Refractory Epilepsy. Scientific Director of the Spanish Epilepsy Federation. Chief Scientific officer in Dravet Syndrome European Federation.



Scientific Advisory Board



MD. Antonio Gil-Nagel

Epileptologist. Director of Epilepsy Program in Hospital Ruber Internacional.
External scientific advisor.



MD. Arjune Sen

Epileptologist. Consultant Neurologist and Associate Professor Oxford Epilepsy Research Group.
External scientific advisor.



MD. Rodríguez Uranga

Neurologist. Medical director of Sevilla and Huelva, Centro de Neurología Avanzada.
Clinical trials.



Igor Pinedo

Lawyer. Specialist in medical affairs. Legal advisor in clinical trials and protocols.



Pere Guinart

Economist. Group Finance Strategy and PMO at Ferrero Group. Chief financial officer and controller at PepsiCo for 19 years.
Financial advisor.



Francisco Jurado

Chief Scientific Officer in Neuraxpharm. Scientific advisor.



EIT Health
European Commission

Partnerships

Building an ecosystem together with leading epilepsy stakeholders worldwide



Medtronic



inbrooll®

DKV



ERGO





Technological platform focused on creating **digital solutions** aimed at enhancing the **quality of life** for patients with neurological diseases, particularly epilepsy and Alzheimer.

In market:

Epilepsy Europe



Seizure risk monitoring and patient alert

Pending:

Epilepsy USA



Seizure risk monitoring and patient alert

Alzheimer Europe



Early diagnostic screening

Early stage:

Parkinson

Patient screening for DBS surgery

Bipolar Disorder

Diagnostic and tracking disease

Schizophrenia

Psychotic episode detection

Product pipeline

Unlocking New Frontiers in Neurology



mjn-SERAS
Epilepsy prediction



mjn-DREAMER
Alzheimer screening
Regulatory process



mjn-HOLTER
Holter EEG
Under development

Parkinson: "Off" moments prediction

Schizophrenia: Psychotic episode detection

Bipolar disorder: Periods detection

Future

Sleep apneas: Pauses detection

Multiple Sclerosis: Diagnosis aid with EEG

Anesthesia: Patient control during surgery

Awards



1st prize 2016



EVERIS
FOUNDATION

Semifinalist 2016



1st prize 2016



5th prize Boston 2017



Best New Wearable
IDTechEX 17 BERLÍN



1st prize 2017



Finalist 2017



1st prize 2018



1st prize 2018



PREMIOS
EVERIS

Finalist and accesit 2018



1st prize Silicon Valley
Funding Summit 2019



Top Catalan IOT Start-up
Innovation World Cup 2019



Selection of Best Social
Impact projects 2019



2nd place World
Competition 2019



X Premios Dependencia
y Sociedad (I+D) 2019



Spanish nominee 2019
Global Health Award 2020



Premio Fenin al Emprendimiento
en Tecnología Sanitaria 2020



1st prize 2021 in US program



1st prize 2021
BBVA



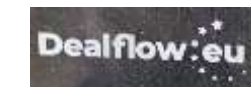
1st prize 2021



1st prize 2022
International contest in Italy



Finalist 2022
Technological improvement



1st prize 2023
Female lead innovation



Medtech Finalist 2024

Press



February 2020
Promotion of MWC 2020
Mobile World Capital Barcelona

Diari de Girona

November 2020
Regional article

LA VANGUARDIA

November 2020
Entrepreneurs-Health



November 2020
National interview



November 2020
TV News



November 2020
Health



November 2020
Innovation



December 2020
Start-up Generation



December 2020
Ship2B Accelerator

PlantaDoce.

January 2021
CDTI Misiones

europa press

May 2021
Innovation



December 2021
Health



May 2022
TV News

CincoDías

June 2022
Business

Emprendedores

September 2022
Business

PlantaDoce.

October 2022
Business

PMFarma

October 2022
Business



December 2022
Business

Seguros TV Blog

December 2022
Business

ConSalud.es

December 2023
Business

VIAempresa

December 2023
Innovation

Diari de Girona 135

February 2024
Business



February 2024
TV Program

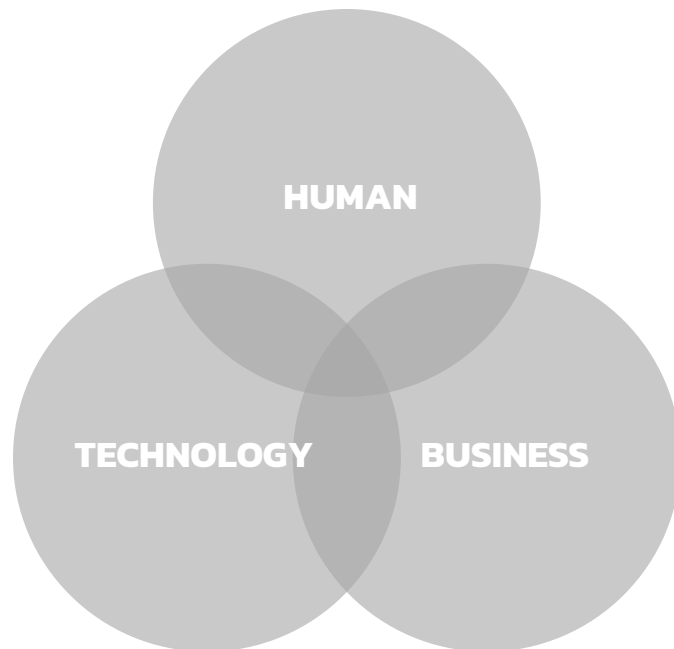


May 2024
Radio Program

Social Company

Mission

Generate a complete detection & warning system to improve the safety & quality of life for people, with a social function of adaptation, integration & job placement in society.



TRANSPARENT

SUSTAINABLE

SOLIDARITY

INCLUSIVE

To define these concepts we have to:



SEE what all the others have seen



THINK what others have not thought



DO what no one else has done

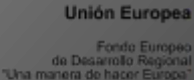
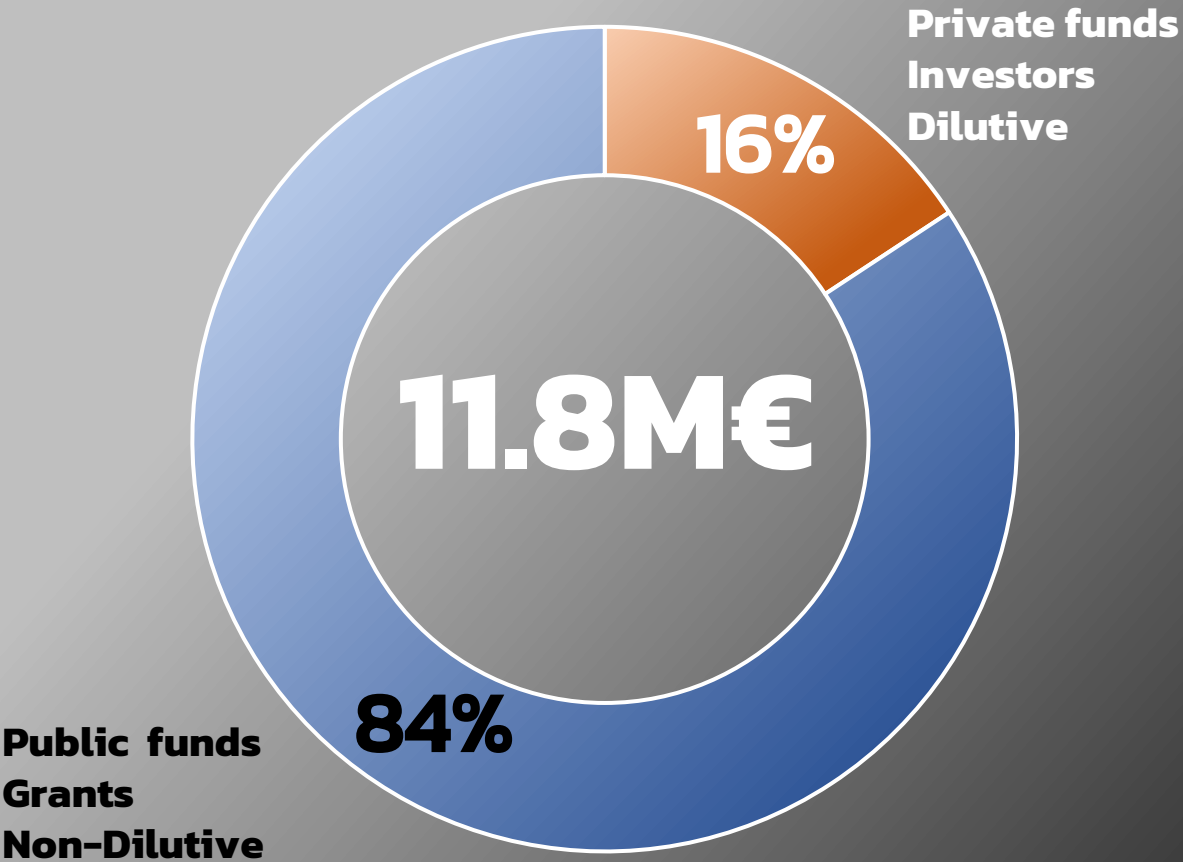
Committed Company

Decalogue

- Generate devices and services that improve the quality of life of people and their environment.
- Our clients are the people and we are oriented to give them a service of quality and with maximum respect.
- The company has to worry about having a defined and coherent strategy, but adaptable over the time.
- Promote favorable working conditions for the quality of life, human and professional development of its community, workers, families, shareholders and suppliers.
- Commitment of economic return in those cases that the system does not meet the minimum requirements.
- Recognize the importance of innovation and research, not only within the products and services, also in our business model using a global dissemination of progress, results and improvements.
- Social action, continuous investment in solidarity with families that can not economically access to the equipment and services, mainly in our territory.
- Promote mutual respect between the company and workers, the integration of women in the structures of the company and the reconciliation of the family and work life for both sexes.
- All actions that will do, promote or support the company must be based on an honesty criteria, integrity, sincerity and in accordance with our principles.
- Our company is part of the currently ecosystem, we will promote environmental, social and financial sustainability.

Funds Raised

2016 / 105k€ FFF round	1.6M€ Dilutive
2017 / 600k€ Professional investors round & Crowdfunding	
2021 / 900k€ Professional investors round & Crowdfunding	
2018 / 250k€ MWC prize and Clínica Corachan agreement, epilepsy	10.2M€ Non-Dilutive
2018-2019 / 900k€ ENISA & RETOS COLABORACIÓN for epilepsy from Spanish Government	
2018 / 1,8M€ DOI 10.3030/849781 H2020 SME Instrument European Commission, epilepsy	
2020 / 90k€ EIT Bridgehead Europe & Innnowide, epilepsy	
2020 / 2,1M€ CDTI Misiones, full consortium, Alzheimer	
2022 / 260k€ Banks and loans	
2022 / 2,8M€ MJN-SERAS - EIT Health EIT Health Amplifier, full consortium, epilepsy	
2022 / 1,0M€ CPP Ministerio, full consortium, Holter EEG	
2024-2025 / 1,0M€ CDTI Multipais-RETECH IA, full consortium	



EIT Health is supported by the EIT,
a body of the European Union



mjn·SERAS

**Next step
for seizure
prediction
in epilepsy**



Reality & Context

Epilepsy is the most prevalent serious chronic neurological disorder worldwide



> 50

million people

15M people in Europe & 11M people in US



30% drug-resistant
4M people in Europe & 3M in US

Problem

Epilepsy means living with low quality of life index



33% need **caregiver**



54% suffer **Anxiety**

32% suffer **Depression**



X2.5 mortality risk



3% Global Health
expenditure

The Problem



Epilepsy seizure is
unpredictable



It causes
accidents, injuries



People with epilepsy
have a **very low**
Quality of Life Index



Epilepsy also
causes **anxiety**
& **stress**



Problem

Epilepsy means living with low quality of life index

For patients & families



33% need **caregiver**



44% reduce **working time**

33% **give up work** every 6 months



54% suffer **Anxiety**

32% suffer **Depression**

For the healthcare sector



Not enough data for neurologists



X2.5 mortality risk



3% Global Health **expenditure**

Our Solution: mjn-SERAS



- ✓ CE mark
- ✓ ISO 13485
- ✓ Patented

An earpiece

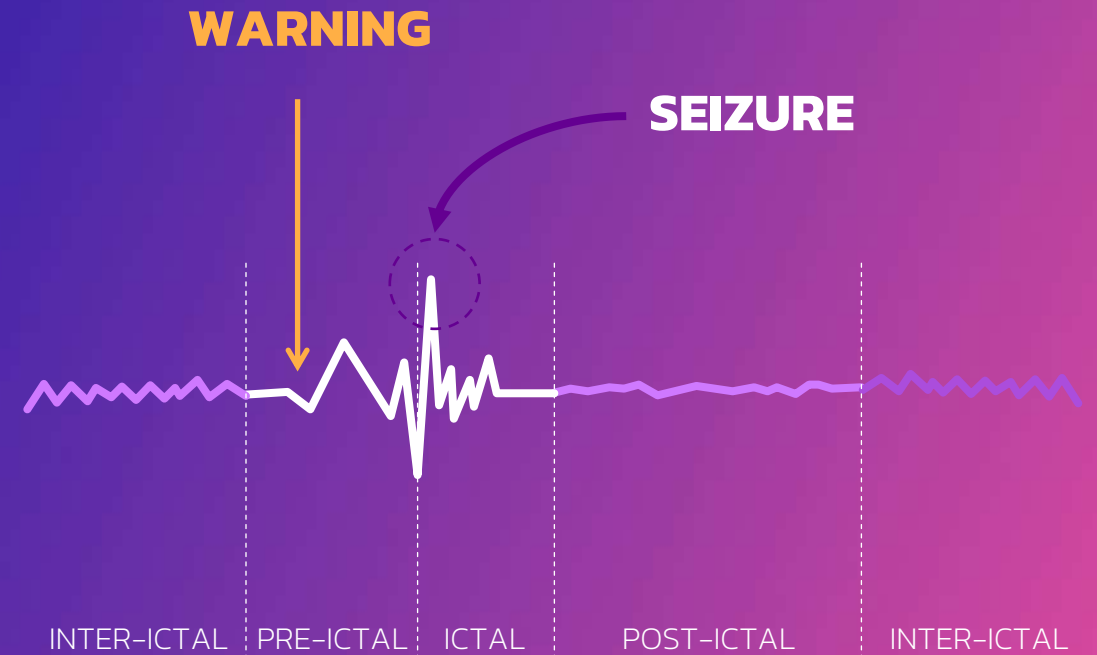
that records the
brain activity, EEG.

An App with an AI algorithm

that alerts from seizures
before they occur.

EEG, electroencephalogram

Continuous assessment of seizure risk



mjn-SERAS

mjn-SERAS[™]

Continuous assessment of seizure risk



An earpiece

Custom fit and discrete earpiece that records the brain activity, EEG.



An App with AI algorithm

An App with a personalized AI algorithm that alerts from seizures before they occur with objective reports for doctors

mjn-SERAS

How does it work?

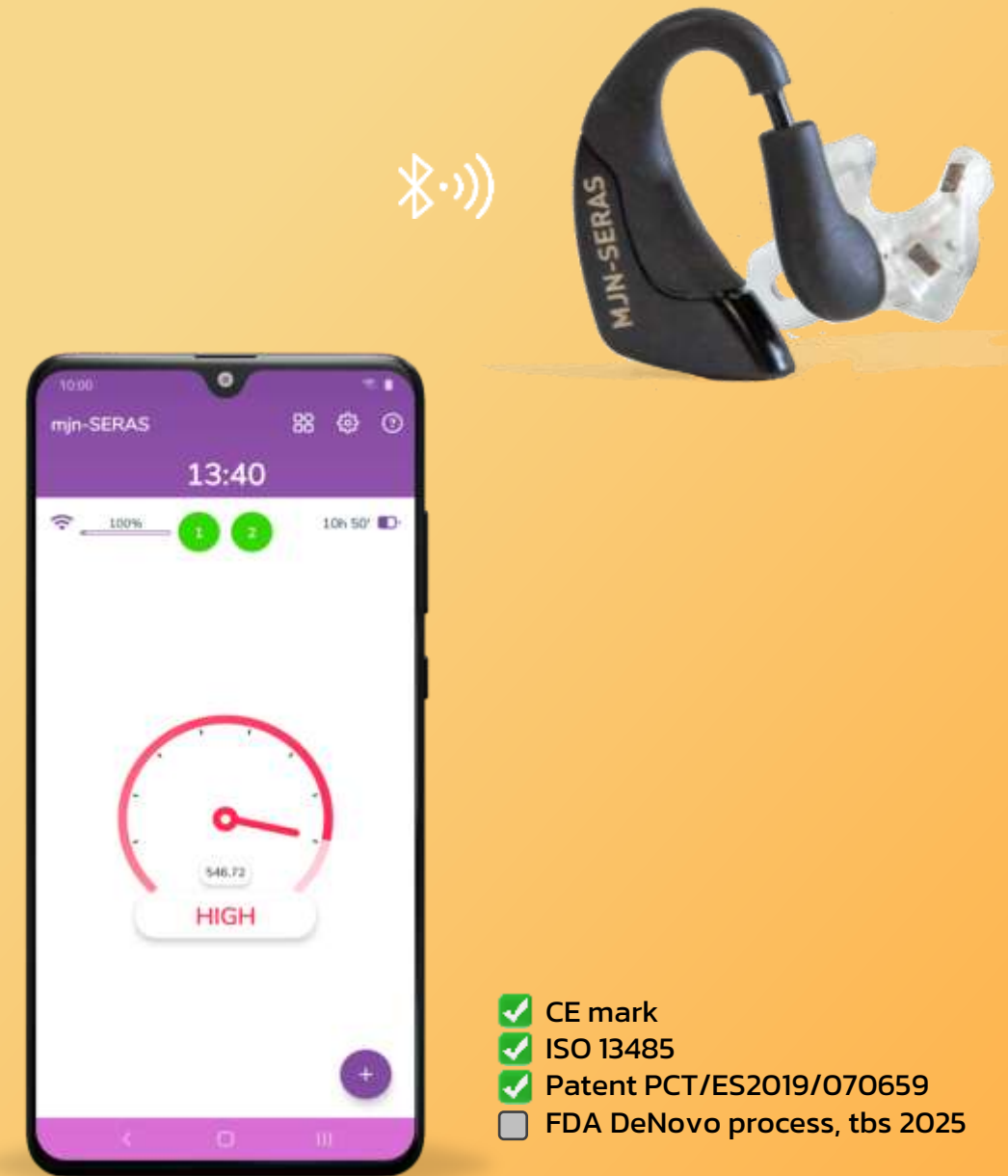
Our competitive advantage: **Brain data access & personalized System**

The Device

- Custom-fit earpiece
- Discrete
- Wearable
- Non-invasive

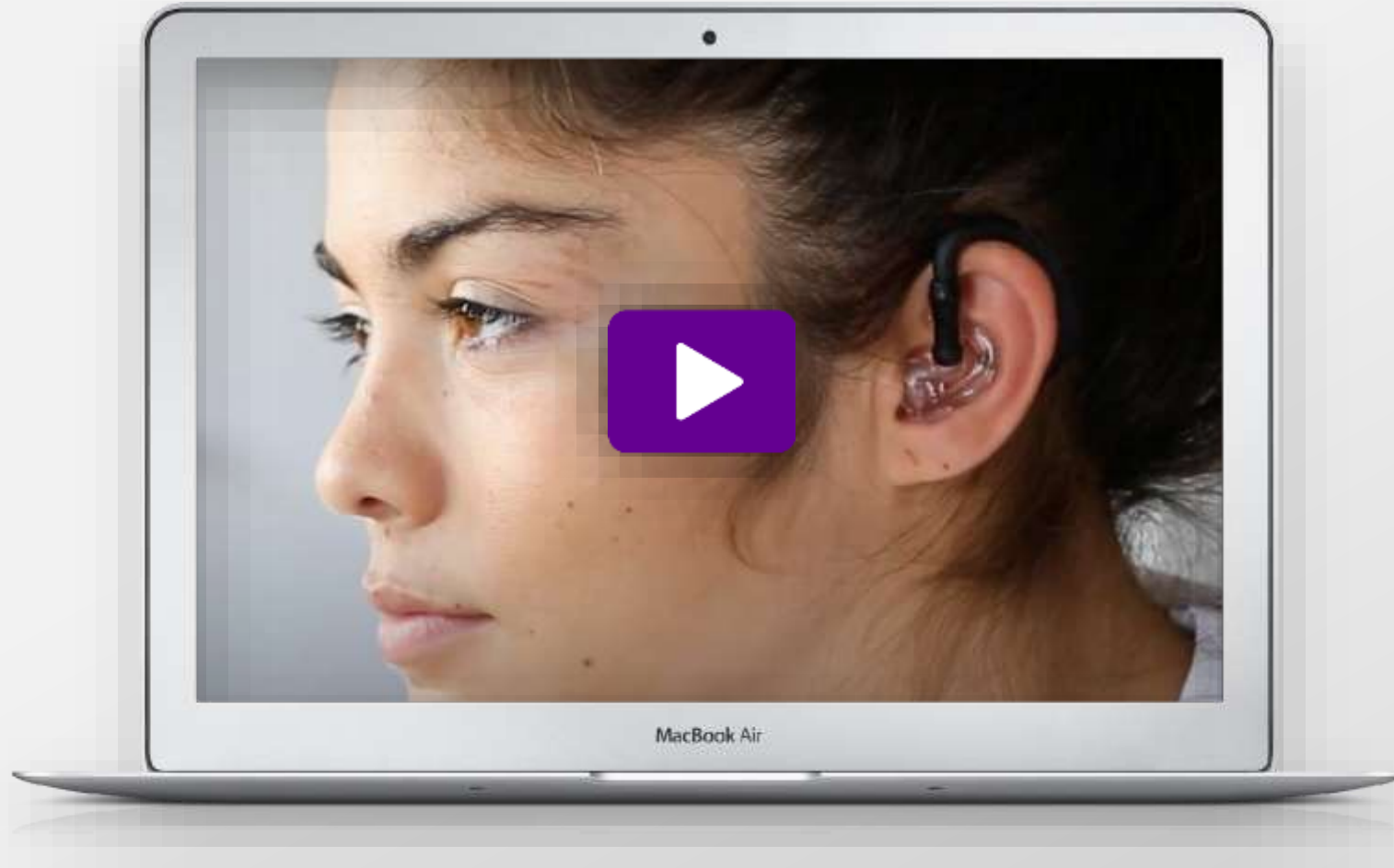
The App

- Embedded personalized algorithm
- Alarms 1 to 3 minutes before the seizure
- Records brain activity & uses Big Data
- Generates objective reports for doctors



- ✓ CE mark
- ✓ ISO 13485
- ✓ Patent PCT/ES2019/070659
- ☐ FDA DeNovo process, tbs 2025

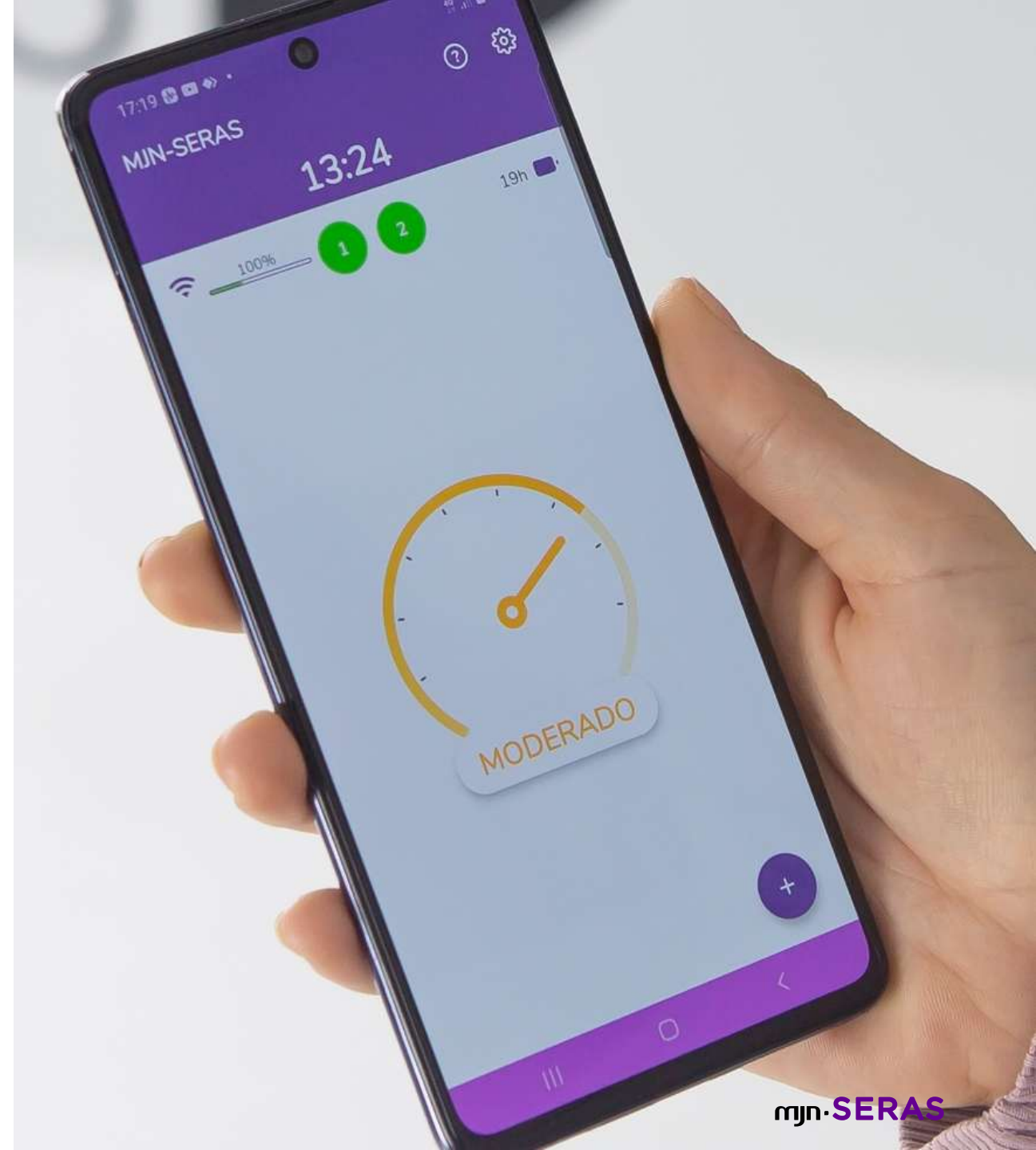
Our technology



Benefits

Prevents accidents

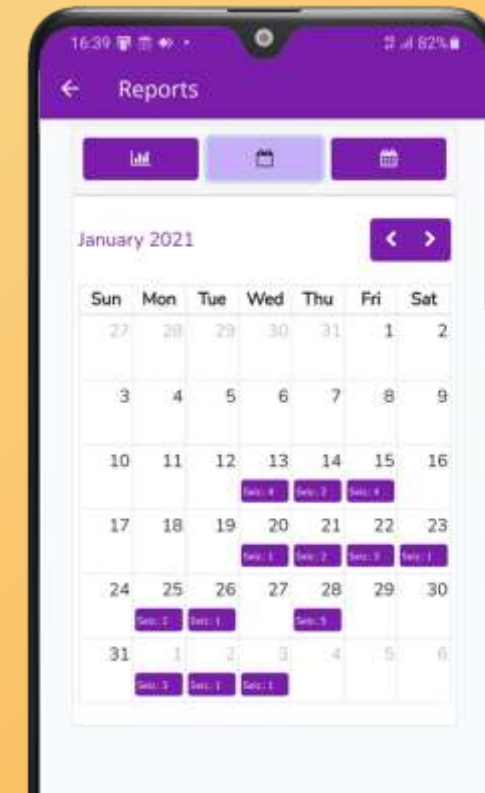
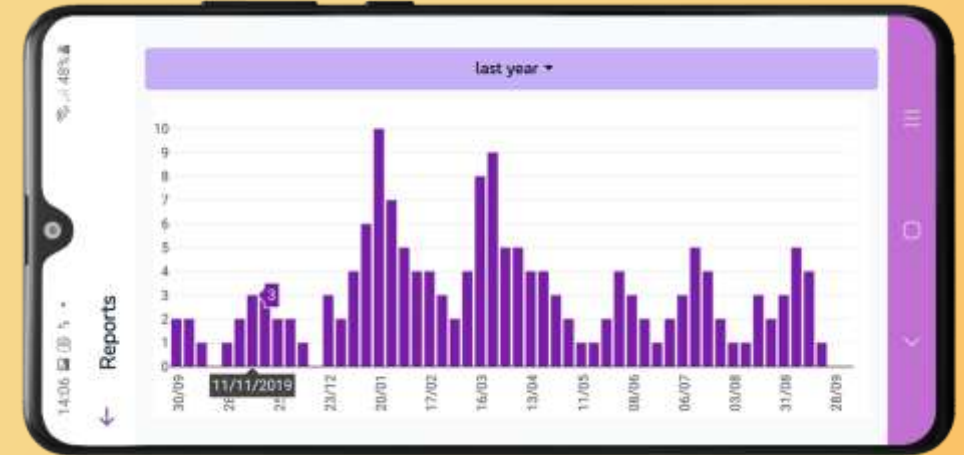
- The system records the brain activity and evaluates the seizure risk in real-time through the App.
- The patient or caregiver receives a warning, an alarm, on the mobile phone before the seizure.
- The patient can move to a safe spot to prevent accidents and injuries caused by seizures.



Benefits

Reports to improve follow up for neurologists & patients

- Graphical representation for patient's follow-up
- Indications of medications changes
- Calendar of seizures, medication & comments
- Color code according to status



Benefits



Reduce accidents, injuries, emergencies & deaths



Reduce economic impact

Hospitals | Insurances



Reduce emotional impact

Anxiety | Depression



Impact

Healthcare



Improves epilepsy treatment



Improves patient management
(future biomarkers)



Potential **> M\$10** cost reduction
in **US**



Social-SERAS App



Manual seizure reporting

and activity tracking (by smartphone or bracelet)



Monthly calendar

global view, pattern recognition and report for doctors



Patients' monitoring

for caregivers, parents and family



mjn-SERAS Mirror

to be alerted from patients' seizures



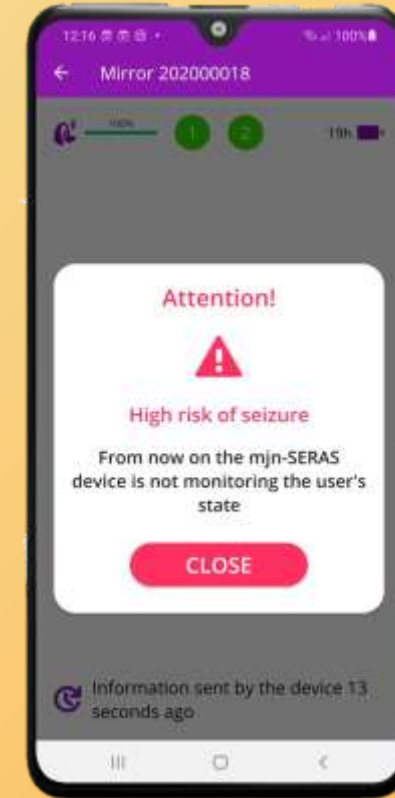
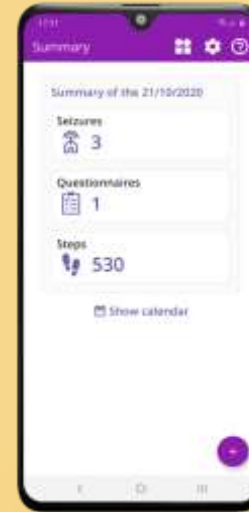
Questionnaire

mood, adherence to treatment, habits, sleep, TV, ...



Safety

notifications of user status & geolocation



Testimonials



"It gives us security"

Getting me safe before I have a seizure is very important to me and my family

Sergi Cutal



"A great hope for those of us who have seizures"

Complete confidence in it, being able to sit down and tell my son and husband in advance if it is time. In addition, mjin are a professional and unique team that addresses every last detail.

Cristina Sarmiento



"A valuable tool to improve my autonomy"

Comfortable, discreet and easy to use

Luis Tobarda



"It reduces my anxiety"

Comfortable and practical, the app is intuitive and very visual.

Avlano Garcia

**Early-adopters, real people between 22 and 49*

Clinical Trials

Unlocking the Future of Epilepsy: Our Clinical Trial Journey

2019 – 2020

EPISOFT: retrospective study for prediction algorithm

n = 50
Sensitivity = 95%
FAR = 0.55 / 24h
MTBS = 9 min

2021 – 2022

SERAS-EEG: prospective CT in hospital with mjn-SERAS & Video-EEG

n = 30
Correlation = 90,1%
89.6% epilepsy patients
90.7% control patients

2023 – 2025

SERAS-HOME: real-world European CT (UK, Germany & Spain)

n = 150
Sensitivity = 72%
FAR = 0.5 / 24h
Specificity = 97%

Next



Clinical Trial Episoft 2020

EPISOFT RESULT	video-EEG (Gold-standard)	mjn-SERAS Immediate Detection	mjn-SERAS Early Detection
Number of patients with seizures	n=50	n=30	n=49
Total hours recorded	1963	1394 (100%)	1205 (61%)
Hours per patient, mean	39,26	46,47	24,60
Total seizures recorded	310	-	-
Seizures used only to train AI algorithms, no processing		0	119
Total seizures processed by the algorithm (real alarms)		185 (100%)	188 (61%)
False negatives		5	10
False positives (false alarms, higher than 30')		6	22
False positives (pre-alarms, lower than 30')			31
Total sensitivity % (TPR)		98%	95%
F-Score (%)		97%	92%
PPV (%)		97%	91%
FAR (false alarms/24hrs)		0,2	0,55
Average time (in minutes) for detection		-	9,0

Collaborators



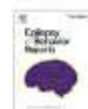
Clinical Trial Episoft 2020



Epilepsy & Behavior Reports

Available online 5 April 2023, 100600

In Press, Journal Pre-proof What's this? >



Artificial intelligence system, based on mjn-SERAS algorithm, for the early detection of seizures in patients with refractory focal epilepsy: a cross-sectional pilot study

Gustavo Torres-Gaona^a, Ángel Aledo-Serrano^b, Irene García-Morales^c, Rafael Toledano^c, Jesús Valle^d, Beatriz Coscolluela^d, Lluís Munsó^d, Xavier Raurich^d, Adrián Trejo^a, David Blázquez^d , Antonio Gil-Nagel^e

<https://doi.org/10.1016/j.ebr.2023.100600>

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Highlights

- The random and unpredictable nature of seizures is one of the principal factors affecting the patient's quality of life.
- Recognition of the interictal state from the preictal is the basis for early seizure detection.
- In Machine Learning-based Detection, algorithms can be trained to learn specific patterns of each individual through a multilayer hierarchical architecture.
- This system analyzes 1500 statistical parameters that measure different characteristics of the EEG signal and can generate an alert of the event.
- Each trained model was evaluated to maximize the sensitivity of seizure detection with minimal false detections.

Abstract

Around one-third of epilepsy patients develop drug-resistant seizures; early detection of seizures could help improve safety, reduce patient anxiety, increase independence, and enable acute treatment. In recent years, the use of artificial intelligence techniques and machine learning algorithms in different diseases, including epilepsy, has increased significantly. The main objective of this study is to determine whether the mjn-SERAS artificial intelligence algorithm developed by MJN Neuroserveis, can detect seizures early using patient-specific data to create a personalized mathematical model based on EEG training, defined as the programmed recognition of oncoming seizures before they are primarily initiated, usually within a period of a few minutes, in patients diagnosed of epilepsy. Retrospective, cross-sectional, observational, multicenter study to determine the sensitivity and specificity of the artificial intelligence algorithm. We searched the database of the Epilepsy Units of three Spanish medical centers and selected 50 patients evaluated between January 2017 and February 2021, diagnosed with refractory focal epilepsy who underwent video-EEG monitoring recordings between 3 and 5 days, a minimum of 3 seizures per patient, lasting more than 5 seconds and the interval between each seizure was greater than 1 hour. Exclusion criteria included age <18 years, intracranial EEG monitoring, and severe psychiatric, neurological, or systemic disorders. The algorithm identified pre-ictal and interictal patterns from EEG data using our learning algorithm and was compared to a senior epileptologist's evaluation as a gold standard. Individual mathematical models of each patient were trained using this feature dataset. A total of 1,963 hours of 49 video-EEG recordings were recorded, with an average of 39.26 hours per patient. The video-EEG monitoring recorded 309 seizures as subsequently analyzed by the epileptologists. The mjn-SERAS algorithm was trained with 119 seizures and split testing was performed with 188 seizures. The statistical analysis includes the data from each model and reports 10 false negatives (no detection of episodes recorded by video-EEG) and 22 false positives (alert is detected without clinical correlation or abnormal EEG signal within 30 minutes). Specifically, the automated mjn-SERAS AI algorithm achieved a sensitivity of 94.7% (95%CI 94.67-94.73), and an F-Score representing specificity of 92.2% (95%CI 92.17-92.23) compared to the reference performance represented by a mean (harmonic mean or average) and a positive predictive value of 91%, with a false positive rate of 0.55 per 24 hours in the patient-independent model.

This patient-specific AI algorithm for early seizure detection shows promising results in terms of sensitivity and false positive rate. Although the algorithm requires high computational requirements on specialized servers in the cloud for training and computing, its computational load in real-time is low, allowing its implementation on embedded devices for online seizure detection.

[Epilepsy&Behavior Reports](#)
EL SEVIER

doi:
<https://doi.org/10.1016/j.ebr.2023.100600>

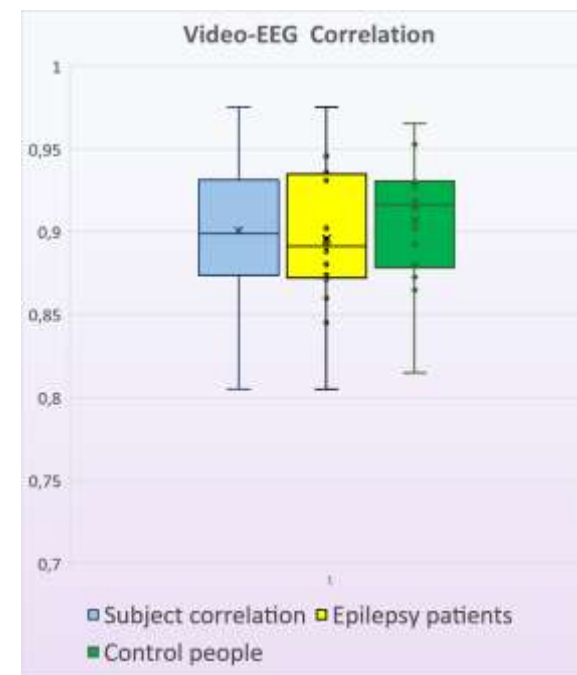
Clinical Trial SERAS-EEG 2022

Prospective, observational pilot study to validate the medical device mjn-SERAS in individuals exposed to refractory epilepsy, to determine the impact of the device in the evaluation of concordance and prediction of epileptic seizures compared to video-EEG.

The study has been performed in hospital facilities recording in parallel the video-EEG signal with the SERAS-EEG signal, to check the concordance with a correlation test.

- Ref: 07/063700,9/20 by Regional Ethical Drug Investigational Committee (CEIm) of Madrid's community.

SERAS-EEG Results	Processed Correlation	Patient Correlation
n:	148	30
Average Correlation:	90,2%	90,1%
StdDev:	7%	4%
CI95% Low:	89,1%	88,7%
CI95% High:	91,3%	91,5%



Collaborators



Clinical Trial SERAS-EEG 2022

Prospective, observational pilot study to validate the medical device mjn-SERAS in individuals exposed to refractory epilepsy, to determine the impact of the device in the evaluation of concordance and prediction of epileptic seizures compared to video-EEG.

EPILEPSY PATIENTS	Correlation
-------------------	-------------

Patients : 16

Average : 89,6%

SEIZURE :	88,1%
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Seizures : 11

StdDev: 7%

CI95% Low: 83,4%

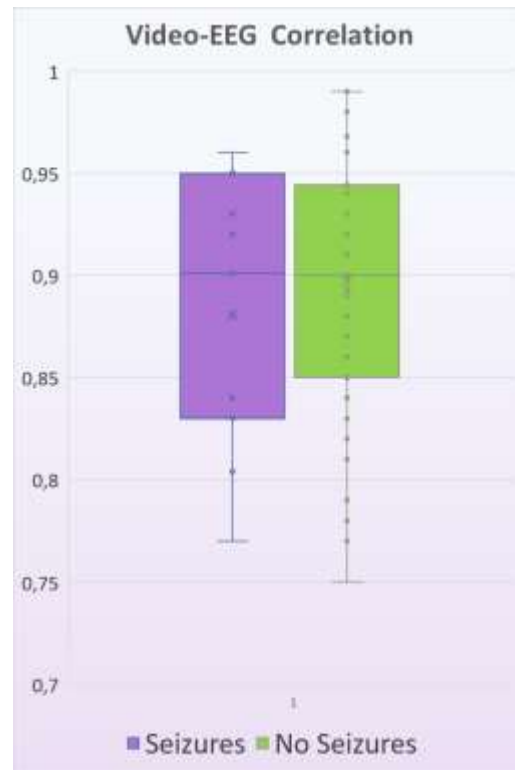
CI95% High: 92,8%

NO SEIZURE :	89,7%
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StdDev: 7%

CI95% Low: 87,9%

CI95% High: 91,5%



EPILEPSY PATIENTS	Correlation
-------------------	-------------

Patients : 16

Average : 89,6%

StdDev: 4%

CI95% Low: 87,5%

CI95% High: 91,7%

CONTROL PEOPLE	Correlation
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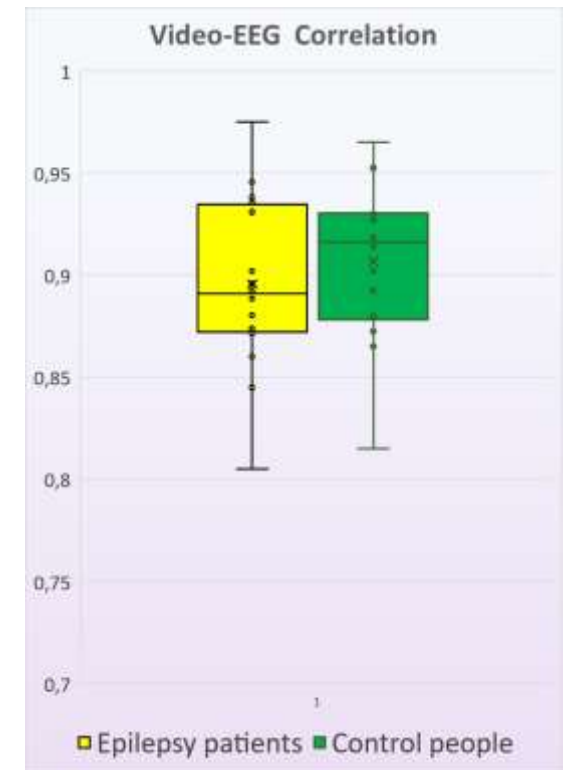
People : 14

Average : 90,7%

StdDev: 4%

CI95% Low: 88,4%

CI95% High: 93,0%



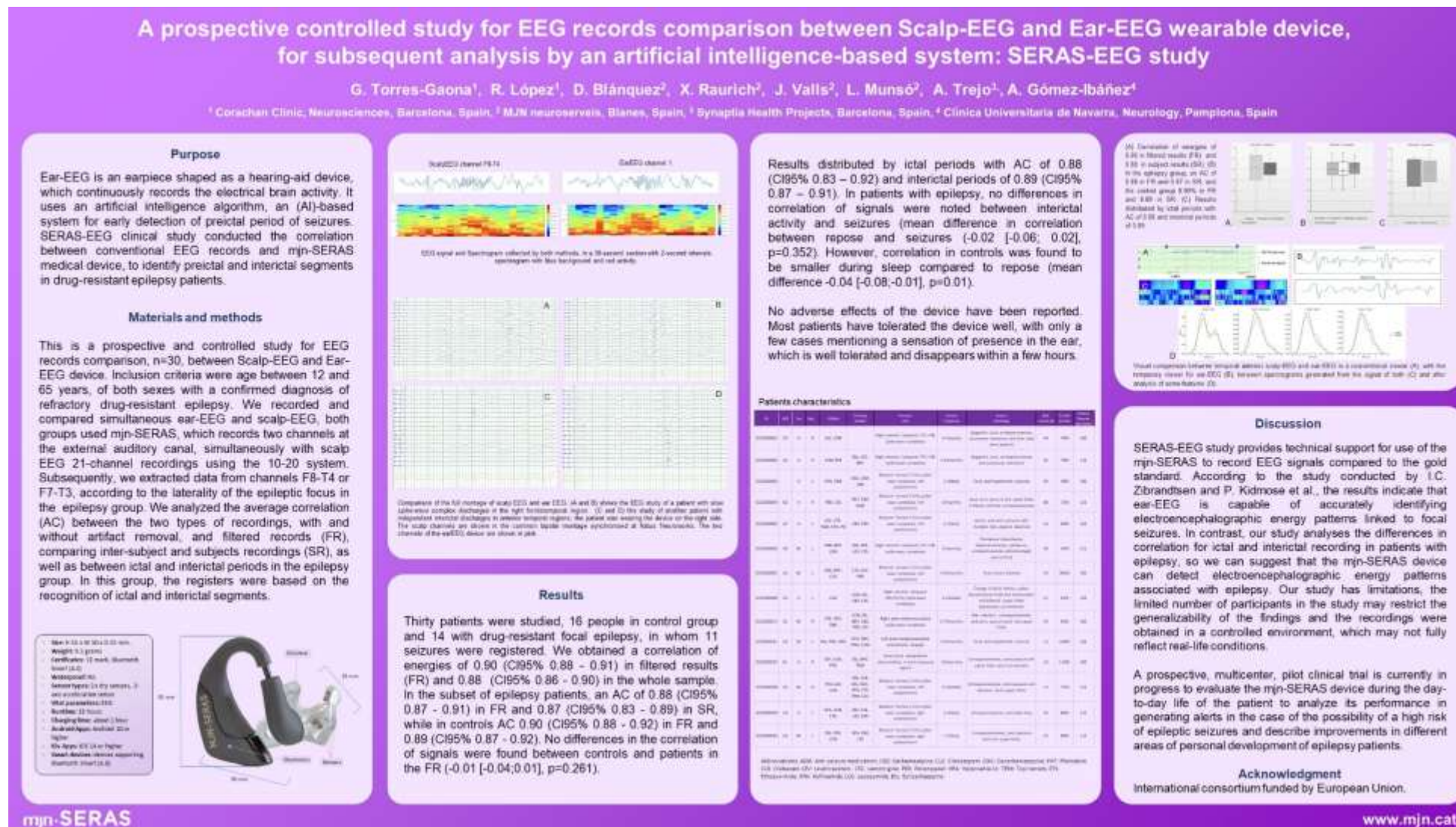
Clinical Trial SERAS-EEG 2022

Poster presentation in
ILAE 35th International
Epilepsy Congress
Dublin 2023.



Pre-print publication:

doi: <https://doi.org/10.1101/2023.10.01.23296029>



Clinical validation SERAS-Home 2023



Multi-center prospective

Post-market study in 3 different countries



Clinical validation & Impact assessment

Out of hospital social, mental & economic impact assessment



Objective

Sensitivity > 80%
FAR < 1 per day



Epilepsy prediction clinical trials



150

Clinical Trial SERAS-Home_12-65

Clinical study for the validation of the medical device mjn-SERAS for the detection and prediction of epileptic seizures in individuals from 12 to 65 years, suffering from refractory epilepsy during their day-to-day activity, to find out the impact of the device in a normalised environment.



DICTAMEN DEL COMITÉ DE ÉTICA DE LA INVESTIGACIÓN CON MEDICAMENTOS El Secretario del CEIm Regional de la Comunidad de Madrid CERTIFICA

Que este Comité ha evaluado el siguiente Estudio:

CÓDIGO: SERAS-Home_12-65 N° EudraCT: NP
TÍTULO: Estudio clínico para la validación del dispositivo médico mjn-SERAS para la detección y predicción de crisis epilépticas en individuos de 12 a 65 años, que padecen epilepsia refractaria durante su actividad diaria, para conocer el impacto del dispositivo en un entorno normalizado.

HOJAS DE INFORMACIÓN A LOS PARTICIPANTES:

- HIP Adultos_V2_08julio2022
- HIP 12 a 17 años_V2_08julio2022
- HIP Tutores menores_V2_08julio2022

PROTOCOLO: V SERAS_HOME_12-65_rev10_July 08 2022

PROMOTOR: MJN Neuroserveis

y considera que:

- El estudio se plantea siguiendo los requisitos de la Ley 14/2007, de 3 de julio, de investigación biomédica, del Real Decreto 1591/2009, de 16 de octubre, por el que se regulan los productos sanitarios y del Reglamento (UE) 2017/745 del Parlamento Europeo de 5 de abril de 2017 sobre los productos sanitarios, y las normas que los desarrollan, y su realización es pertinente.
- Se cumplen los requisitos necesarios de idoneidad del protocolo en relación con los objetivos del estudio y están justificados los riesgos y molestias previsibles para el sujeto.
- Son adecuados tanto el procedimiento para obtener el consentimiento informado como la compensación prevista para los sujetos por daños que pudieran derivarse de su participación en el ensayo.
- La capacidad del investigador y sus colaboradores, y las instalaciones y medios disponibles, tal y como ha sido informado, son apropiados para llevar a cabo el estudio.

Este CEIm, en su reunión celebrada el 04/07/2022 (Actas 07/22 y 11/22), decide emitir un **DICTAMEN FAVORABLE** para que dicho estudio sea realizado por los investigadores y en los centros que se relacionan a continuación:

Documento en papel con código de verificación: 110737464491072428

Collaborators



Clinical Trial SERAS-Home_12-65

mjn-SERAS algorithm
Results

Preliminary results

SERAS-Home_RWD	Results
Total hours	26842 h
Total days	3934 days
Validation split	13112 h
Accuracy	94%
TPR (Sensitivity)	80%
TNR (Specificity)	99%
FAR/day (False Alarm Rate)	0,20

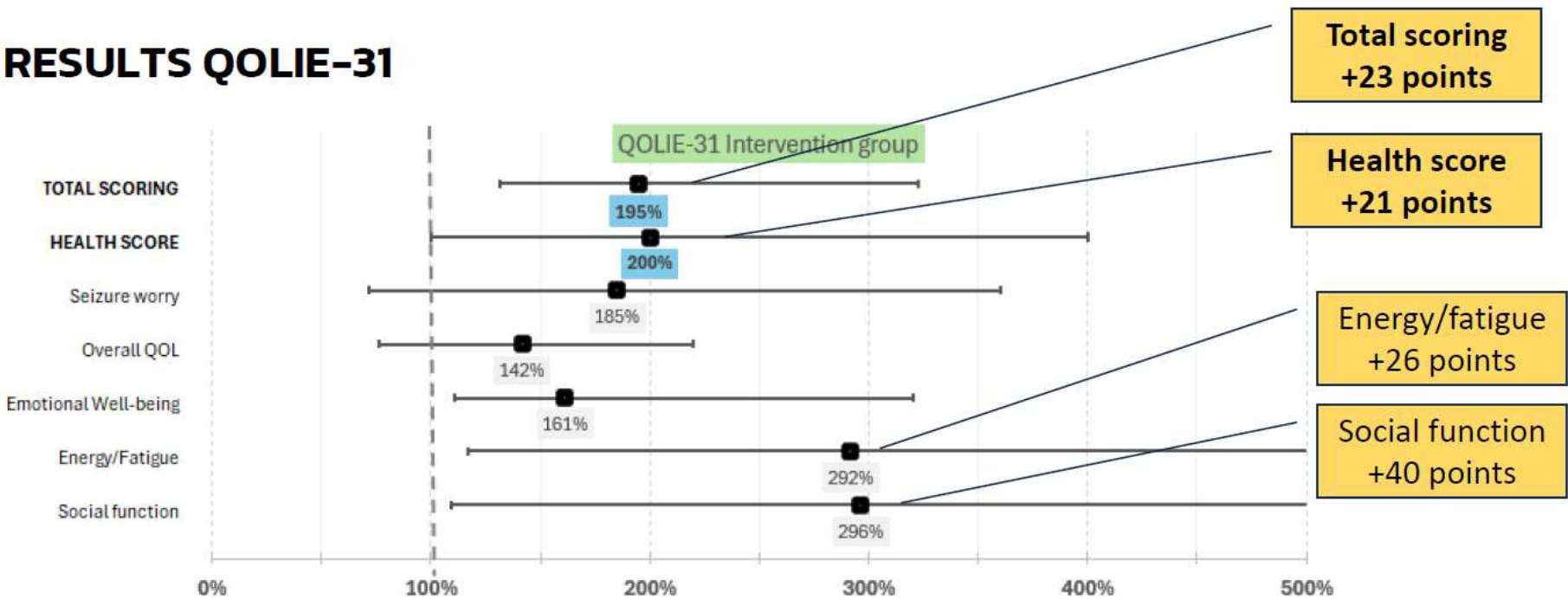
Collaborators



Clinical Trial SERAS-Home_12-65

Quality of life
Results

RESULTS QOLIE-31



Collaborators



mjn·SERAS

Clinical Trial SERAS-Home_12-65

Quality of life
Results

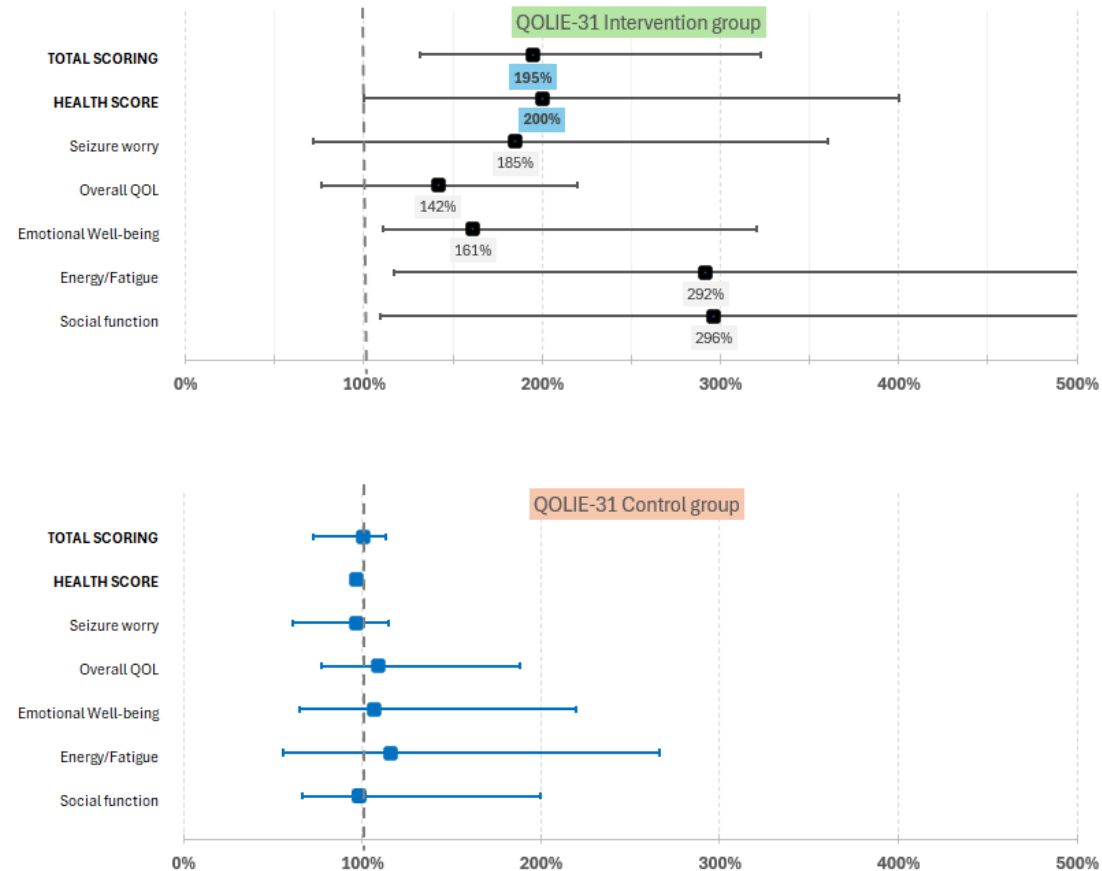
QOLIE-31

The global index is **QOLIE-31**, total scoring has improved in 195%. The perceived health by the patients has been improved in 200%, with very promising results in improving capabilities for personal activities and free-time, concentration, vitality and self-autonomy.

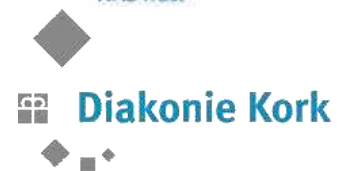
It is important the total score but also the sub-scales, so we cannot do nothing in cognitive or medication effects, weighed in the total score, but we can have **improvements** of 142% in overall QOL or seizure worry with 161%, and **more than 290%** in **social function** and **energy/fatigue**.

The average for the control group is maintained in the same status except one patient that has increased his/her social functions or energy.

Actually, all patients could be considered as middle and high affected populations.



Collaborators



Clinical Trial SERAS-Home_12-65

Quality of life
Results

EQ-5D-5L

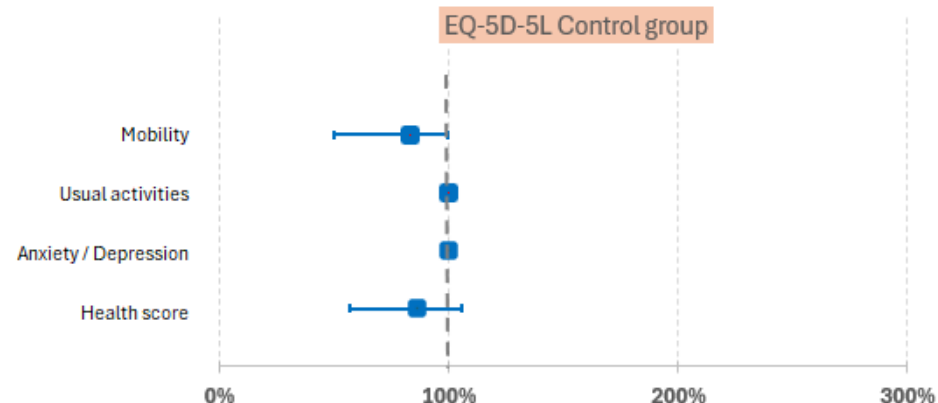
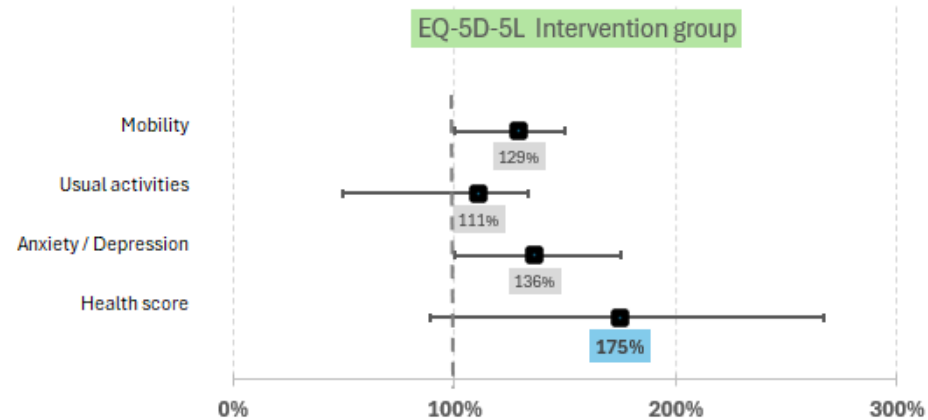
The questionnaire EQ-5D-5L shows an improvement of 175% in health score.

There is a **relevant** improvement in mobility 129%.

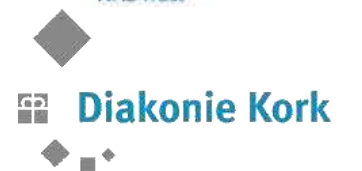
Also, **Anxiety/Depression** improvement of 136%.

All patients in control group maintained their scores or reduces some of them.

EQ-5D-5L is a generic test and it is not representative of epilepsy patients, so we have different global scores depending on the different types of seizures. When more patients arrived in T3, it will be needed to implement the 3 different subgroups, lightly, middle and high affected populations.



Collaborators



Clinical Trial SERAS-Home_12-65

Accidents
Results

ACCIDENTS REDUCTION

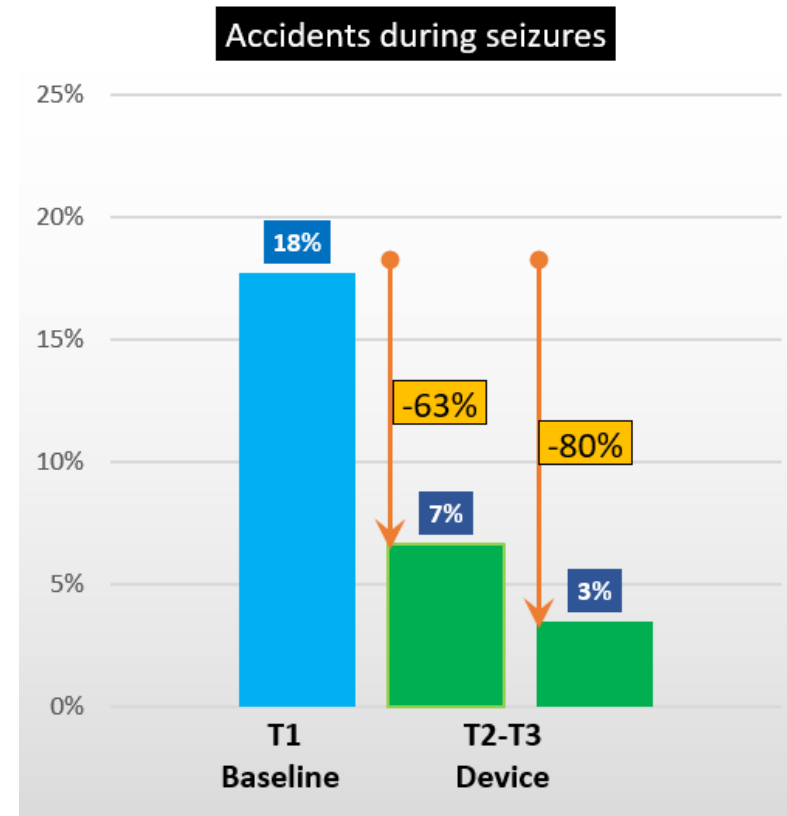
Based on a pre-post assessment, pre-assessment during the T0 and T1 period, without device or any seizure warning, and post-assessment during the T2 period with seizure warning.

53% of the patients are having accidents during seizures.

Using the device the average accidents is reduced up to 3% when patient receive the alerted seizures.

There is an average reduction in accidents of 63% to 80%.

From 87% to 93% of the patients are completely free of accidents.



Collaborators






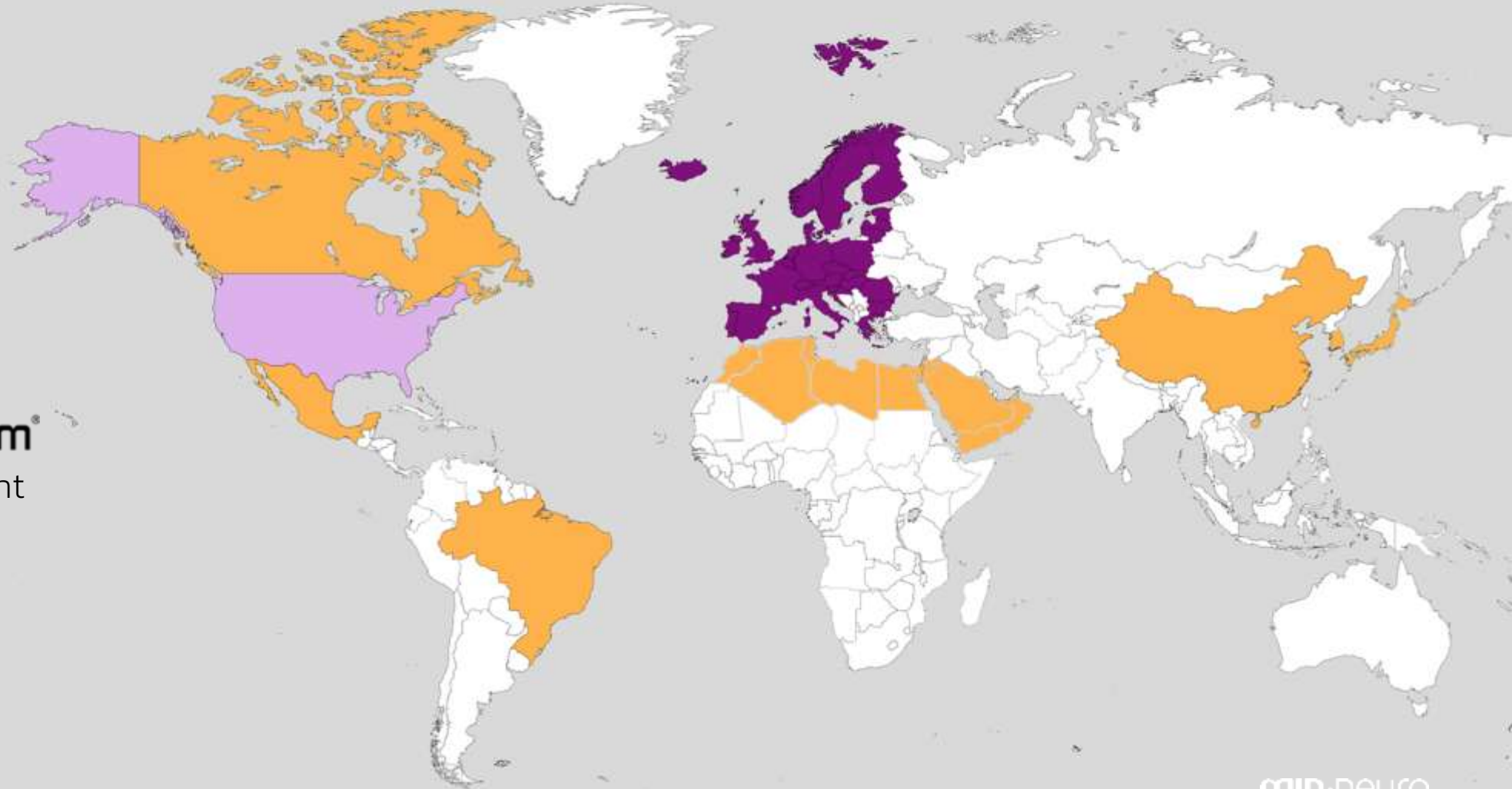
Go to market strategy

Exclusive partnership for Europe already secured



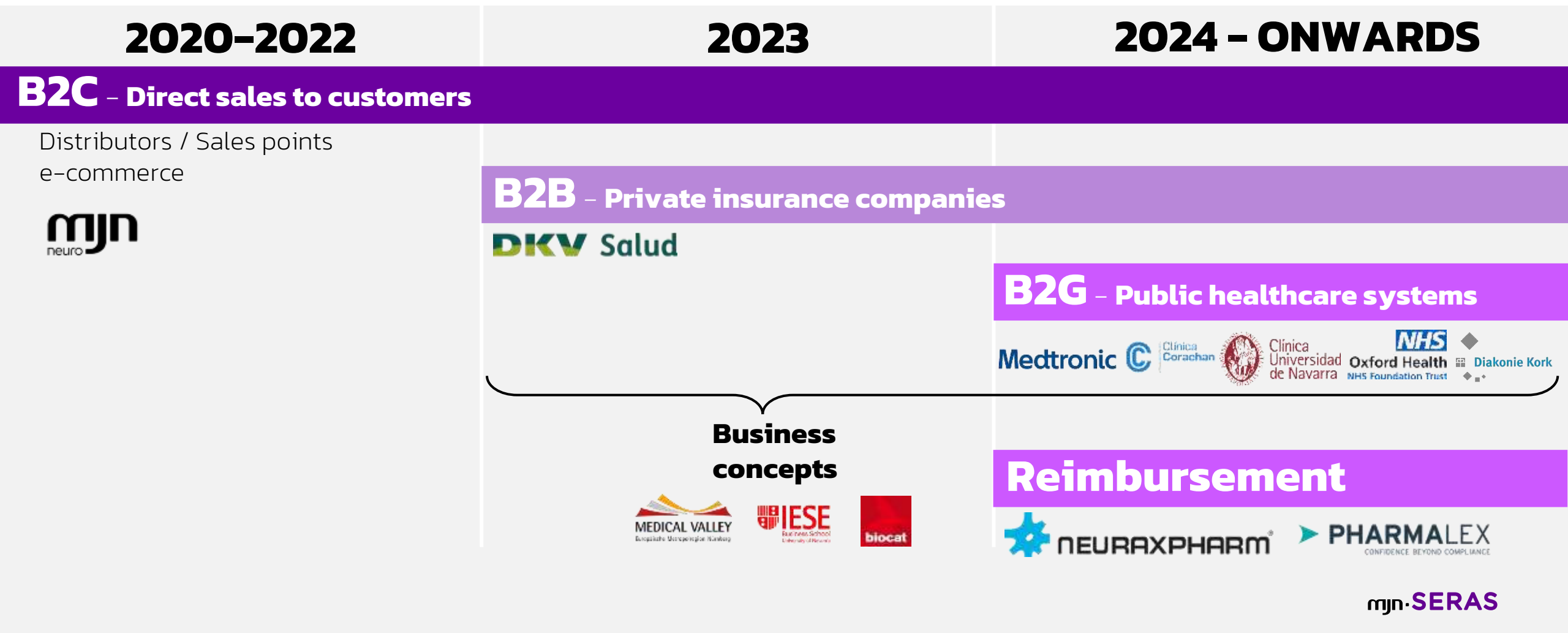
Distribution agreement
in exclusivity for **32
countries** in Europe

-  Already secured, Europe
-  USA
-  Under negotiations



Next Steps

Business models



EIT Health Amplifier



Increase **clinical evidence** in Europe



Increase **visibility** /
Connect with **EIT Health Network**

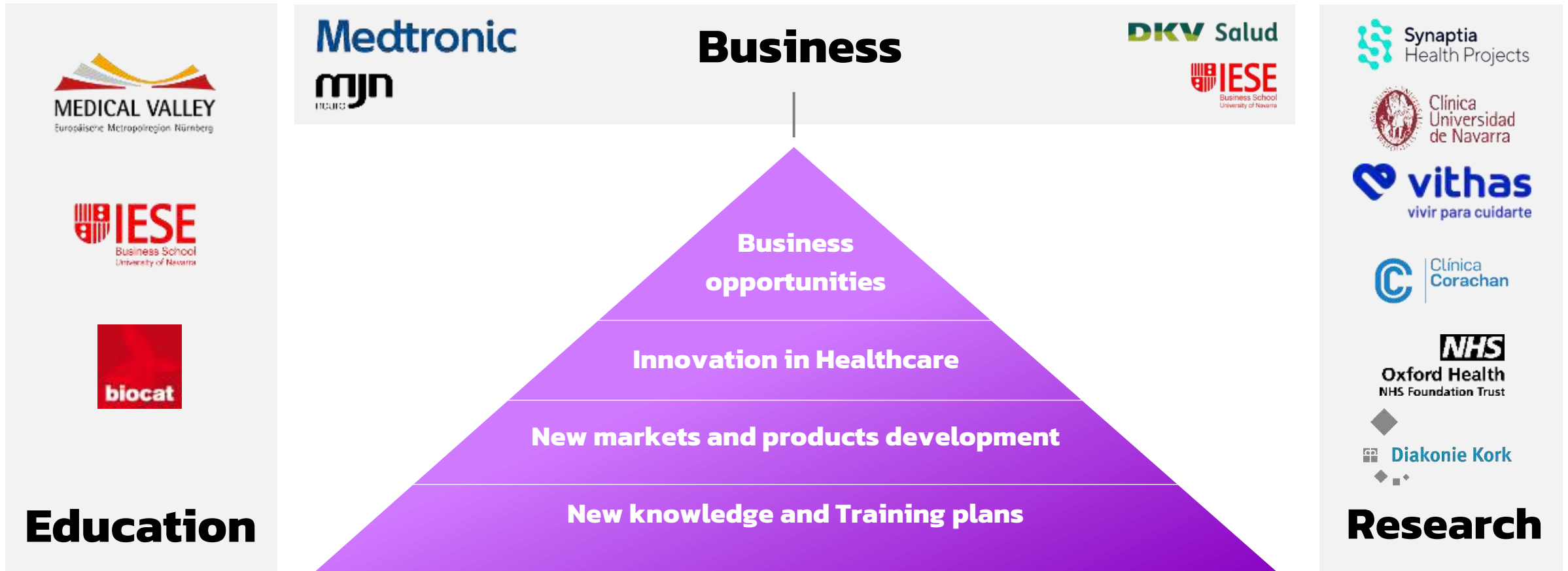


Expand **production capacity** / Reduce **production costs**



The Consortium

Knowledge triangle integration



The education experience



<https://dkvintegralia.org/proyecto-mjn-neuro/guia-inclusion-epilepsia/>

Performed by :

Fundación
INTEGRALIA DKV

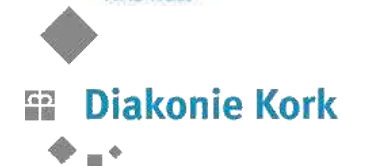


Collaborators

Medtronic



DKV Salud



mjn•SERAS

Our Value Proposition

For **people living with drug-resistant epilepsy** who **need to prevent accidents and injuries**, our **SERAS** is a **device** that **alerts users and their caregivers 1 to 3 minutes before the seizure occurs**, helping **reduce anxiety and improving their quality of life**.



Impact

Value proposition



Improve **quality of life**



Accessible technology
for **everyone**



Sustainable solution
for **healthcare systems**

A photograph of a person from the chest up, holding a large white sign with a black border. The sign has the text "WHAT'S YOUR PURPOSE?" written on it in bold, black, sans-serif capital letters. The person is standing outdoors in a grassy field with trees in the background.

**WHAT'S
YOUR
PURPOSE?**

mjn·neuro

Scalable project

Today

Viable solutions that help people with
epilepsy

Tomorrow

Viable solutions that help people with
other neurological diseases



Investing in health, quality of life and social companies is the best way to build a better society

¡Thank you!

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