ai·prognosis

Newsletter #5

January 2025

AI-PROGNOSIS -

Towards Parkinson's risk assessment and prognosis through AI

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Learn more on **www.ai-prognosis.eu**

Project updates

Survey on AI-PROGNOSIS toolkit for Parkinson's disease care

We value your **feedback on the use of AI system** designed to support people at risk of developing Parkinson's disease (PD), those already diagnosed, and their healthcare professionals. This system aims to monitor and explain symptom fluctuations, predict disease progression, and optimise treatment responses.

Your insights are invaluable to us as:

- someone over the age of 18,
- a relative to someone with PD, or a person living with PD or a healthcare professional working with PD patients.

The **online survey** consists of 5 different sections and will take around 15-20 minutes to complete.

Take the survey **here.**

Initiation of Digital Biomarkers Development, Validation, and Verification Study (dBM-DEV Study)

The **Digital Biomarkers Development, Validation, and Verification (dBM-DEV) study** is now fully underway, with participants recruitment initiated at all clinical sites: CHU de Toulouse in France, King's College London in the UK, Fundación INCE (Iniciativa para las Neurociencias) in Spain, and Technical University of Dresden in Germany.

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AI-PROGNOSIS: digital biomarkers development study (dBM-DEV study)

Rapid eye movement (REM) sleep behaviour disorder (RBD) is a condition in which you act out your dreams while you sleep and constitutes a risk factor for developing Parkinson's disease (PD) in the future. Traditionally, RBD is diagnosed in specialized sleep clinics and thus, these tests are not widely available. **RBD detection at home via a smartwatch application could potentially be available for everyone.**

To achieve this, this study aims to **identify a set of novel digital biomarkers for the detection of RBD** using smartwatch-based recordings. Specifically, this study seeks to identify features extracted from passive smartwatch data that are associated with episodes of RBD and demonstrate that these features can reliably detect episodes of RBD.

So far, **16 participants** have been recruited.

The study focuses on developing digital biomarkers (dBMs) to track Parkinson's disease (PD) symptoms, particularly REM sleep behaviour disorder (RBD) and daytime sleepiness.

Interview with Prof. Dr. Björn Falkenburger

Prof. Dr. Björn Falkenburger from the Technical University of Dresden discusses the objectives of the Digital Biomarkers Development, Validation and Verification study (dBM-DEV study) and the potential impact on the management of PD. He shares how the study uses digital biomarkers to improve early detection and the management of PD symptoms.

Prof. Dr. Björn Falkenburger   Technical University of Dresden | TUD

Watch the full video **here.**

mAI-Health App on Google Play Store

The mAI-Health app is now available for download on the **Google Play Store**. The app is a research data collection tool used in the Digital biomarkers development, validation, and verification study (dBM-DEV study) (NCT06444789). Currently, the app is only available to participants enrolled in the study across Germany, France, Spain, and the UK.

The dBM-DEV study is part of the AI-PROGNOSIS project and focuses on developing digital biomarkers (dBMs) for Parkinson's disease (PD) symptoms, particularly REM sleep behaviour disorder (RBD) and daytime sleepiness.


Link to the app on the Google Play Store **here.**

mAI-Care UI/UX co-creation session

On 22-23 October 2024, **AI-PROGNOSIS Patient Panel participated in two focused workshops aimed at shaping the mAI-Care app.** Eight participants from France, Germany, Portugal, and Spain joined the sessions to provide valuable input, ensuring the app meets the needs of those living with Parkinson's disease.

The workshops were designed to **gather feedback on the proposed data visualisations for the mAI-Care app** and to address user experience concerns. This feedback is instrumental in deciding which features will enhance the app's usability. Following the workshops, we plan to continue refining the app's design and will conduct additional sessions to further discuss how data will be displayed, ensuring a user-friendly experience.
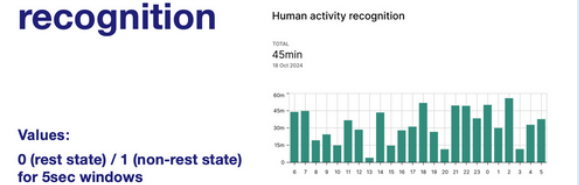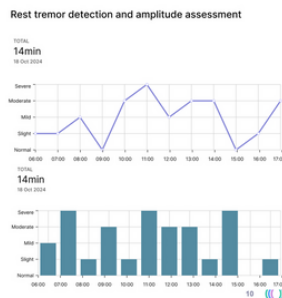
Read **more**.
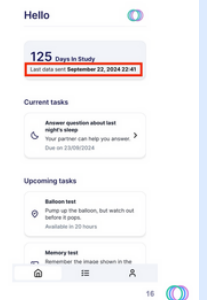
Meet the people behind AI-PROGNOSIS

Behind every breakthrough and milestone of **AI-PROGNOSIS are dedicated people** driving progress. While data, advanced methodologies, digital innovations and collaborative research shape our path, it's our people who make it possible.

Learn more about the people behind the project **here.**

Scientific publications

An agile co-creation approach for designing a comprehensive digital motor assessment test for Parkinson's Disease patients

Alves B, et al. (2024). DSAI 2024 Proceedings. 13–15 November 2024. Abu Dhabi, UAE. ACM ISBN 979-8-4007-0729-2

Read the full **publication.**

Assessing motor skills in Parkinson's Disease using smartphone-based video analysis and machine learning

Stergioulas A, et al. (2024). PETRA '24 Proceedings. 26–28 June 2024. Fodele, Greece. ACM ISBN 978-1-4503-XXXX-X/18/06.

Read the full **publication.**

Knowledge base

Learning Hub

AI-PROGNOSIS offers **educational resources** to raise awareness about PD and improve health literacy. **Visit our Learning Hub for**:

✓ **Interactive Quizzes**

Test your knowledge about PD here.

Learn about the prodromal stage and early signs of PD here.

Informative articles

The role of sex and gender in Parkinson's disease.

Read more.

Trust and Trustworthiness in AI Ethics.

Read more.

Videos

Video by Dr. Margherita Fabbri from Toulouse Université Hospital on motor symptoms.

Watch here.

Events

Project presentation to MSc Students of Advanced Practice in Neurological Physiotherapy

11 January 2025

On 11 January 2025, **Beatriz Alves from FMH-ULisboa** presented the AI-PROGNOSIS project to **MSc students of Advanced Practice in Neurological Physiotherapy at the Health School of the Polytechnic Institute of Setúbal, Portugal**. As part of the curricular unit on Technology Allied to Neurological Physiotherapy, the presentation aimed to provide an overview of the AI-PROGNOSIS project and share recent progress on motor and cognitive assessment tools.

It also served as an opportunity to engage students in the ongoing dissemination of the web survey (**Survey | AI-PROGNOSIS**) and address their questions regarding participation in European research initiatives, especially the role of multidisciplinary teams in this context.

AI-PROGNOSIS 4th Plenary Meeting
10–11 December 2024

The AI-PROGNOSIS 4th Plenary Meeting took place on December 10–11, 2024, in Dresden, Germany, where consortium partners gathered to review the project's progress and key achievements.

Discussions included **workshops on study designs** for AI-PMP and AI-PRA studies, as well as a session with the External Advisory Board to gather valuable feedback on the project's progress. Additionally, **regulatory strategies and future steps** were carefully considered to ensure the project's continued success.

The meeting also provided **an overview of the project's current status and milestones, updates** from various Work Packages, and decisions made by the General Assembly regarding necessary adjustments to the project.
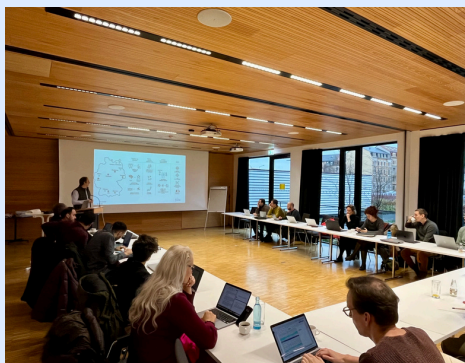
World Movement Disorders Day 2024
29 November 2024

On World Movement Disorders Day, AI-PROGNOSIS reaffirmed its dedication to raising awareness about Parkinson's disease (PD) and improving health literacy. As part of our Learning Hub, we **featured the video "Motor Symptoms in Parkinson's Disease: The Clinical Perspective"** by Dr. Margherita Fabbri from Toulouse Université Hospital.

This insightful resource explores the clinical aspects of motor symptoms in PD, offering valuable knowledge for patients, caregivers, and healthcare professionals.

Watch the video here.

2nd Healthy Longevity Symposium
21-22 November 2024

The AI-PROGNOSIS project coordinator, **Prof. Leontios Hadjileontiadis, shared insights on the development of a smartphone-based tool to assess motor skills in Parkinson's patients** at the 2nd Healthy Longevity Symposium, held by Khalifa University in Abu Dhabi on 21-22 November 2024.

The presentation highlighted **a key focus of AI-PROGNOSIS: the development of a smartphone-based tool, the Comprehensive Motor Function Test (CMFT)**, to assess motor skills in Parkinson's disease patients. The goal is to integrate this tool into a mobile app to enhance patient care using advanced technology.

DSAI 2024
15 November 2024

On 15 November 2024, **Beatriz Alves from FMH-ULisboa represented AI-PROGNOSIS at the 11th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion (DSAI 2024),** held at Khalifa University in Abu Dhabi, United Arab Emirates (UAE).

Beatriz presented AI-PROGNOSIS's paper titled **"An agile co-creation approach for designing a comprehensive digital motor assessment test for Parkinson's Disease patients".** The presentation highlighted the development of a digital motor assessment tool, aiming to support early diagnosis and improve care for patients with Parkinson's disease.
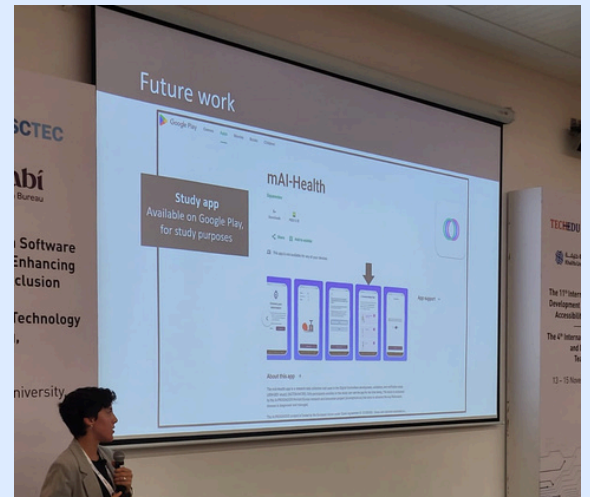
NeuroconexiON's Second Edition
12 November 2024

The second edition of **NeuroconexiON brought together young neurologists to discuss the potential of artificial intelligence (AI) and new technologies in advancing Parkinson's disease care.**

During the event, **Dr. Monica Kurtis presented the AI-PROGNOSIS project,** showcasing its innovative approach to early detection, progression monitoring, and treatment support for Parkinson's disease.