ai·prognosis

Newsletter #4

September 2024

AI-PROGNOSIS –

Towards Parkinson's risk assessment and prognosis through AI

Newsletter highlights

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

Project updates

AI-PROGNOSIS: Insights from Prof. K Ray Chaudhuri

Prof. K Ray Chaudhuri discusses the role of AI-PROGNOSIS in the early detection and assessment of Parkinson's disease. He highlights the importance of identifying individuals in the prodromal stage, noting that earlier diagnosis leads to better treatment options, including potential neuroprotective therapies and the benefits of physical activity.

Prof. Chaudhuri explains how **AI-PROGNOSIS uses artificial intelligence to analyse behaviour and movement patterns**, identifying individuals at risk of developing Parkinson's. This validated approach aids in predicting future Parkinson's symptoms from early signs, enhancing clinical trial efforts—especially in neuroprotection—and supporting the development of self-help and counselling pathways for patients.

Watch the full video **here.**

So in all of these ways the use of artificial intelligence and AI-PROGNOSIS will help.

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

AI-PROGNOSIS is approaching **the launch of the Digital biomarkers development, validation, and verification study (dBM-DEV study)**. Our UK partner, King's College London, received ethical approval in July 2024, completing the approval process in all participating countries: Fundación INCE in Spain, CHU de Toulouse in France, and Technische Universität Dresden in Germany.

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.

The dBM-DEV study aims to **identify novel digital biomarkers for detecting Rapid Eye Movement (REM) Sleep Behaviour Disorder (RBD)** using smartwatch recordings, focusing on features from passive smartwatch data that can reliably detect RBD episodes.

Read **more.**

Advancing with Testing and Feature Integration for the dBM-DEV study

With ethical approvals now secured across all participating countries, **AI-PROGNOSIS is progressing in testing the collection of key data from smartwatches, including accelerometer data, BBI, and heart rate.**

Our current **focus is on testing the collection of key data from smartwatches, including accelerometer data, BBI, and heart rate.** This testing is being carried out in collaboration with partners such as SquareDev, Aristotle University of Thessaloniki, CHU de Toulouse, Fundación INCE, King's College London, and Technische Universität Dresden, along with technical partners Netcompany-Intrasoft, Centre for Research & Technology Hellas, and KU Leuven.

As we move forward, additional features like cognitive and motor tests will be introduced, and the app's functionality will be further refined. Upon successful completion of this testing phase, the dBM-DEV study will officially launch.

Read **more.**
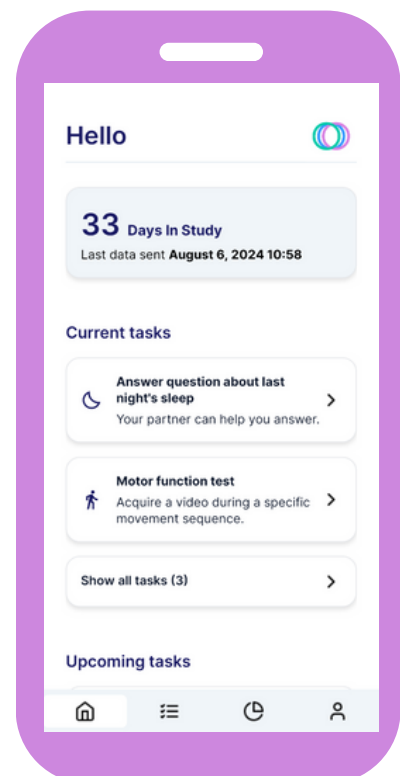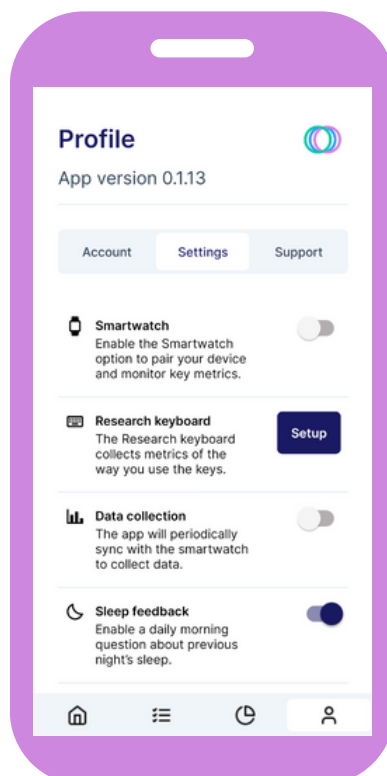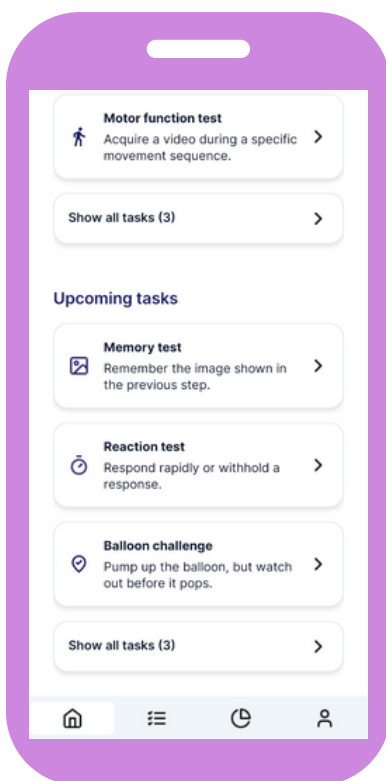
Scientific Publications

MoveONParkinson: developing a personalized motivational solution for Parkinson's disease management

Alves B, et al. (2024). Front. Public Health. 12:1420171.

New research on MoveONParkinson presents a **digital solution aimed at enhancing exercise participation and improving disease management** for people with Parkinson's Disease (PwPD). This solution includes a Web Platform and a Mobile App featuring a Conversational Agent, all grounded in Social Cognitive Theory principles to promote sustained exercise habits.
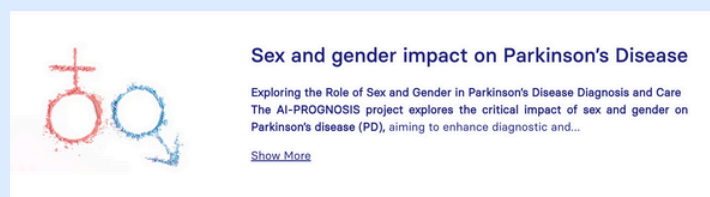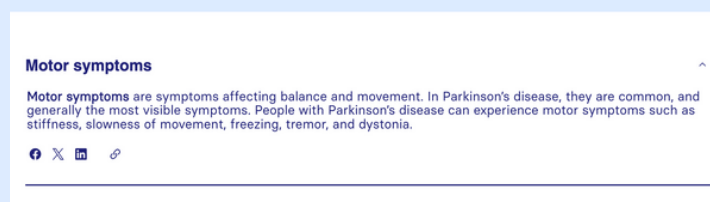
The study received support from the **Polytechnic Institute of Setúbal** (Portugal) and the **Horizon Europe** research and innovation project **AI-PROGNOSIS**.

Read the full **publication.**

Knowledge Base

Learning Hub

In September, **a new section of the AI-PROGNOSIS project website was launched – the Learning Hub!** Here, you can learn more and test your knowledge about Parkinson's disease in general and the AI-PROGNOSIS project in particular. The people and organisations behind the project are convinced that awareness and knowledge about Parkinson's disease are key factors in moving forward with better risk assessment and prognosis.

Motor symptoms

Motor symptoms are symptoms affecting balance and movement. In Parkinson's disease, they are common, and generally the most visible symptoms. People with Parkinson's disease can experience motor symptoms such as stiffness, slowness of movement, freezing, tremor, and dystonia.

Sex and gender impact on Parkinson's Disease

Exploring the Role of Sex and Gender in Parkinson's Disease Diagnosis and Care
The AI-PROGNOSIS project explores the critical impact of sex and gender on Parkinson's disease (PD), aiming to enhance diagnostic and...

Show More

Under this section of the website, you will **find different types of educational content**, such as videos, articles, infographics, quizzes, and similar. You will hear from many stakeholders in the project, offering you the opportunity to understand different perspectives on Parkinson's disease and how these different perspectives are addressed in AI-PROGNOSIS. Content will be added on a rolling basis, so make sure to keep an eye on our social media channels for updates.

In accordance with the AI-PROGNOSIS commitment to ethical and democratic stakeholder involvement and high scientific quality, all educational materials are assessed by multiple relevant stakeholder specialists.

Read all the **articles**.

Dictionary related to Parkinson's disease.

Parkinson's Disease Diagnosis and Care in France, Germany, Spain, and the UK

Discover how Parkinson's disease (PD) diagnosis and care are managed in **France, Germany, Spain, and the United Kingdom (UK), where AI-PROGNOSIS clinical partners are based**. Each country provides unique insights into patient demographics, treatment protocols, and healthcare accessibility, all shaping the experiences of those living with PD. From national health system funding to specialised care approaches, these **perspectives highlight the diverse strategies employed to support people living with PD across Europe.**

Parkinson's Disease Diagnosis and Care: Germany

Up to **400,000 PD patients**

More common in **males (50.8%)** than in females (49.2%)

PD prevalence is **below 1% in those aged ≤60 and over 3% in those aged ≥75**

PD patients are followed **by neurologists**, both community-based and hospital-based ones

Diagnosis typically **initiated by primary care physicians** referring patients to neurologists

Neurologist visits **every three months**, with **annual visits to specialised PD centers** for comprehensive care

Parkinson's Disease Diagnosis and Care: France

Around **200,000 PD patients**, with an average onset at **58 years.**

The **male-to-female ratio is 1.5:1**

Annually, **25,000 new diagnoses** are reported

PD patients are followed **by neurologists**, but **only 33.5%** had a consultation in a year, despite the recommended every six months.

Diagnosis can be challenging in rural areas, which impacts timely diagnosis and treatment.

Standard care includes **two visits per year**, with one at a tertiary hospital. Access to PD nurses and educational programs is mainly available in university hospitals.

Parkinson's Disease Diagnosis and Care: Spain

The incidence of PD is **186.8 per 100,000 person-years** among those aged 65-85

The **average age** of PD patients is **62.6 years**

PD is more common **in males (60.3%)** than **females (39.7%)**

Men are 2.55 times more likely to develop PD compared to woman

Early-stage patients are generally managed by general neurologists, with specialists handling more complex cases

Patients usually start with **family practitioners** for diagnosis, with waiting times for neurologist visits varying by region, impacting timely access to specialised care

Early-stage patients are seen by neurologist every **6 to 9 months**, while those with complications may require more frequent visits

Read **more.**

Clustering and Network

Following our approval for the Horizon Results Booster (HRB), we are now advancing with Module A services focused on dissemination. This initiative by the European Commission helps **maximise the impact of EU-funded research.**
Our cluster brings together five projects — **iPROLEPSIS**, **AI-PROGNOSIS**, **HIPPOCRATES**, **REBECCA**, and AutoPiX — and **we look forward to the next steps in this collaboration.**

HORIZON RESULTS BOOSTER   European Commission

Maximising the Impact of EU-Funded Research with Horizon Results Booster Services

Five projects involved in the cluster:

iPROLEPSIS   ◎ ai·prognosis

REBECCA   HIPPOCRATES   AutoPiX

DHU week

From **September 16th to 20th**, the Digital Health Uptake (DHU) project hosted a series of **free online master classes** aimed at enhancing the skills needed to implement and scale digital health solutions. These master classes were a key part of DHU's broader mission to **strengthen capacity building and encourage mutual learning** across regions, Member States, and countries associated with the **Digital Europe Programme**, under which DHU is funded.

The week was a great success with 926 registrations and 467 participants.

Missed the sessions? Watch the recordings **here**.

DHU Executive Digests

DHU Executive Digests offer concise, trusted insights on the most significant topics shaping the industry today. With 9 expertly crafted editions, each digest delivers clear, actionable guidance on pressing issues like legislation, policy, standards, and best practices.

Read our Digests **here.**