

# More Stamina

## A gamified digital health solution for people with Multiple Sclerosis

OULU, FINLAND, February 1<sup>st</sup> 2021, A new initiative to **help people with Multiple Sclerosis (MS) self-manage their condition** by using a new **evidence-based digital health application**.

Due to the increasing digitalization of healthcare, digital tools are fast becoming the go to solution used by patients to target specific health conditions. However, there is not much evidence yet that this brings value to the care process.

**More Stamina** is a **research to business action** funded by **Business Finland** that focuses on the challenges faced by targeted solutions for chronic conditions, exploring their potential value for patients and healthcare providers alike. With a multidisciplinary team, the project aims to set up a feasible frame for commercializing of such solutions either as a service for patients, working hand in hand with pharmaceutical companies or using a mix of business models.

«We are exploring how digital health solutions can survive beyond “laboratory” conditions. Most digital health innovations are either grant-funded projects that end as soon as the funding is over or are developed by startups barely making ends meet. Our project wants to answer two key questions: “how do we integrate these solutions into the healthcare system?” and “how can these solutions become self-sustainable?», explains **Dr. Guido Giunti** from the **Faculty of Medicine at the University of Oulu**.

### ***Why tackle multiple sclerosis?***

Multiple sclerosis is one of the world’s most common neurologic disorders in young adults. It affects more than 12,000 Finns and almost 3 million people worldwide, and it does so when they are at their most productive. The course of MS is varied and unpredictable, often leaving patients with a growing number of disabilities.

People with MS suffer a wide range of symptoms like fatigue, altered sensation, cognitive and mental health problems and even physical mobility issues. Fatigue is the most common, frustrating, overwhelming, and often disabling symptom for people with MS.

Professor **Minna Isomursu** from the **Faculty of Information Technology and Electrical Engineering at the University of Oulu** says «Our team has been working on MS for a long time, following and building up on our findings. Our talented multidisciplinary team is comprised of people with technical, medical and business backgrounds, working both in industry and academia. This gives us the chance to consider the issue from multiple angles».

### ***How does More Stamina work?***

**More Stamina** is a self-management tool designed to help people with MS manage their energy. The app uses wearable sensors and context information to generate personalized recommendations so people with MS learn how to deal with their fatigue achieving a better quality of life. The anonymized data it collects will be used to explore hidden patterns and characteristics of living with MS, so that new ways of helping patients can be developed.

**Gamification elements** were added to enhance engagement and make difficult concepts like how much “energy” a person has much more user-friendly. A person’s overall energy for the day is represented as a simple progress bar showing how many Stamina Credits the person has left. As

each day starts, a clean customizable list of activities is presented so the user can be more intentional about what they want to accomplish.

«As persons with MS “spend” their Stamina Credits, they will solidify their understanding between the abstract concept of “energy” and their actual experience at the end of the day, helping them bridge that conceptual gap» comments **Dr. Giunti**.

The app keeps a record of the users’ activities in their profile, awarding medals for completing certain objectives like fulfilling all daily tasks 3 days in a row, responding effort assessments every time, or correctly assessing tasks. These will provide clear and unambiguous positive progress feedback to the users, encouraging them in the “right” direction.

Clinical tests for the More Stamina digital App with real patients are expected to begin soon in several countries, with the first ones slated for the first half of 2021. While **Oulu University Hospital** is the co-operative partner for the tests in Finland, there are also several international institutions working in this project, currently including: Hospital Italiano de Buenos Aires (Argentina), Universidad de Sevilla (Spain), Fundación DINAC (Spain), Hospital Nithas Visa (Spain), and Kliniken Valens (Switzerland).

The impact that this project has lies not only in its evaluation of a digital health solution but also as it provides insights regarding how healthcare infrastructures can be modified to optimize value creation. This work is of important scientific significance as it will create new algorithms and data about managing fatigue, while advancing scientific knowledge on value co-creation logic for adoption of mobile health solutions in healthcare systems under different contexts.

### ***Selected publications***

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