MELISSA

Launch of EU Research Project MELISSA: Better Quality of Life for People Living with Diabetes Through Innovative Artificial Intelligence Applications

Through its ambitious research, the interdisciplinary consortium of 12 international partners will provide a digital solution for the management of insulin-treated diabetes that allows for personalised treatment and care.

9th June 2022 – Diabetes is one of the fastest growing non-communicable diseases worldwide and among the leading causes of disability and death. Improvements in treatment and care were made over recent decades, yet it requires a breakthrough to address any future challenges. The new research project MELISSA (Mobile Artificial Intelligence Solution for Diabetes Adapted Care), a collaboration of 12 partners from seven countries will leave its mark in introducing Artificial Intelligence (AI)-based solutions. Funded through the European Union's Horizon Europe Framework Programme for Research and Innovation, the project will receive EUR 5.9 million over the next four years. In addition, the Swiss government will contribute EUR 1.8 million in funding for the Swiss Associate Partners. MELISSA is coordinated by Maastricht University who will work closely on managing the project with Debiotech, the University of Bern and Eurice.

Diabetes is on the rise worldwide. In Europe alone 60 million people are living with this complex disease. Nearly 36 million people are at risk of developing diabetes if no further actions are taken. This implies that by 2030 more than 10% of the European population could be affected. The impact of such a development is immense: not only are more people at risk of complications and death, but also health care systems will be stretched to their limits due to rising costs associated with complications and the very diverse treatment of patients. Despite major advances in drug discovery and the development of innovative diabetes care over the last 20 years, not every patient can access or afford it.

A growing number of people with diabetes require insulin therapy. This highly complex form of treatment greatly impacts the everyday life of people affected by diabetes and requires substantial effort and commitment on their part. The introduction of AI-based solutions for personalised treatment and care promises to become a gamechanger. Not only could an estimated 400,000 European lives be saved every year, it could also have a significant economic impact in saving €200 billion and 1,8 billion staff hours in Europe alone.

MELISSA has been established to innovate diabetes treatment and care to this effect. "Through the development of a clinically validated, efficient and cost-effective AI-based digital diabetes management solution, the MELISSA team will be able to support people with insulin-

treated diabetes and their healthcare providers in maintaining normal blood glucose levels, thus avoiding both hyper- and hypoglycaemia. Every insulin-treated person living with diabetes will be able to receive tailored treatment according to their individual needs." explains Dr Bastiaan de Galan, Professor of Internal Medicine and Diabetology at Maastricht University and coordinator of the MELISSA consortium.

The new diabetes management solution will be achieved through the clinical development of a digital platform that integrates existing (pre)clinically validated AI-driven solutions under strict ethical guidelines. It will allow people with diabetes to achieve self-management and glucose control with minimised risk of short and long-term diabetes-related complications. With people with diabetes and their healthcare providers at the heart of the MELISSA research, their needs and requirements will be paramount for the development of the platform. Once established, it will be validated during a clinical study, involving insulin-treated people with diabetes from Denmark, Germany, Greece, and the Netherlands. A cost-benefit analysis will complement the effort to investigate the market attractiveness and the economic potential of the developed solution. Health and digital literacy as well as patient empowerment are promoted through information and communication packages about insulin-treated diabetes, diabetes management and glucose control.

"Based on our findings, MELISSA ultimately aims to provide safe and evidence-based clinical decision support systems for affordable treatment for everyone with diabetes requiring insulin treatment. Health care providers will be able to better predict patients' responses to the individually tailored treatment. They can also rely on improved clinical guidelines thanks to the novel, clinically validated and (cost-) effective AI solutions. As such, MELISSA will be the first AI-powered solution to go through regulatory approval for clinical investigation in several European countries." adds Professor Stavroula Mougiakakou from the AI in Health and Nutrition Laboratory, ARTORG Center for Biomedical Engineering Research at the University of Bern.

Stephan Proennecke, Project Manager & Director of Industrialization at Debiotech S.A. highlights: "For any person affected, the MELISSA approach will be unique in that it offers support in the management of their therapy that will adapt itself to their individual practices and compensate any systemic errors – an innovative feature never seen before and a real turning point in diabetes management."

The consortium comprises academic, clinical and industrial partner institutions complemented by a diabetes patient organisation from Denmark, Germany, Greece, Spain, Switzerland, The Netherlands and the US. The project officially kicks off its activities with a first meeting taking place in Fribourg, Switzerland from the 9th to 10th June 2022.

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Press Release

MELISSA

Project Key Facts

Full Name: MELISSA – Mobile Artificial Intelligence Solution for Diabetes Adapted Care
Start Date: 1st June 2022
Duration: 48 months
Budget: 5,986,709 € (EU) + 1,8 Mio. € (Swiss government)
Coordinator: Universiteit Maastricht, The Netherlands
Website: www.melissa-project.eu

Project Partners (Beneficiaries and Associated Partners)

Denmark
- Nordsjællands University Hospital Hillerød, Region Hovedstaden

Germany
- Eurice - European Research and Project Office GmbH
- Otto-Von-Guericke-Universität Magdeburg
- Profil Institut für Stoffwechselforschung GmbH
- Technische Universität München

Greece
- Ethniko Kai Kapodistriako Panepistimio Athinon
- 'P. & A. Kyriakou' Children's Hospital

Spain
- Universidad De Navarra

Switzerland
- Debiotech S.A.
- Universität Bern

The Netherlands
- Universiteit Maastricht

USA
- JDRF International

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