**FORGETDIABETES proposes radically new approach to diabetes treatment**

*FORGETDIABETES will develop an immuno-optimized, fully-implantable, fully-automated, artificial pancreas for intraperitoneal hormone delivery, enabling an optimal glycaemic control for type-1 diabetes patients.*

FORGETDIABETES was chosen in 2019 EIC Pathfinder call (FET Proactive: emerging paradigms and communities, FETPROACT-EIC-05-2019), in the subtopic category of implantable autonomous devices and materials. The ground-breaking outcome FORGETDIABETES proposes is a bionic invisible pancreas, which will free patients suffering from type-1 diabetes from therapeutic actions and from related psychological burden. The bionic pancreas will become a life-condition, allowing subjects to live just as everybody else.

Diabetes is a chronic disease and a metabolic disorder manifesting itself by a permanently high blood sugar level, which is associated with damage to the body and failure of various organs and tissues (it can e.g. cause eye, heart, kidney, and nerve injuries). It occurs either from insufficiency of pancreas, which cannot produce insulin, or from the situation when the body cannot make good use of the insulin the pancreas produces. There are three main types of diabetes: type 1, type 2 and gestational diabetes. Type-1 diabetes can develop at any age, but usually, it is diagnosed when the patients are still children or adolescents. Type-2 diabetes is more common in adults and to some extent, it is mentioned as one of the lifestyle diseases. The third type, gestational diabetes, is characterized by a high blood sugar level during pregnancy.

FORGETDIABETES focuses on type 1 diabetes. A typical patient with type-1 diabetes has such medical conditions, when the pancreas produces very little or no insulin, which means that the patient needs daily insulin injections to maintain blood sugar levels under control. While new technologies, in particular subcutaneous glucose sensors and insulin pumps, have improved the quality of life of these patients, the therapy remain extremely demanding in the sense of its strict regime, and it affects their everyday life. The FORGETDIABEES technology will entirely eliminate this burden.

As the research team pointed out in the proposal: “The current type-1 diabetes therapy requires the patient to compute and self-inject an appropriate amount of insulin, resulting in multiple daily procedures (including painful finger-pricking and frustrating computation) with a therapeutic effectiveness that strongly depends on the patient’s skill. It has been estimated that only about half of the patients meet the targets recommended by the scientific societies clinical guidelines despite the exorbitant number of therapeutic actions (100 000-500 000) in one patient’s life.”

In order to take off this burden, FORGETDIABETES will create the bionic invisible pancreas, which will completely free the patient of all interventions and consequent social or psychological burdens, and thus allowing the patient to forget her/his pathology and enjoy life as a healthy person. The project coordinator, Prof. Claudio Cobelli, specifies the rarity the project: “An interdisciplinary team with top experts in micro-nano mechatronics, modeling, control engineering, biomaterials, endocrinology, surgery and behavioural sciences has been assembled to develop what was regarded as impossible for decades: a long-lasting system relying on a physiological glucose sensing and hormone delivery, orchestrated by personalized adaptive algorithms with advanced self-diagnostic capabilities.”

The project starts in October 2020 and will run for 54 months, until March 2025. The team is composed by: University of Padova (Italy, coordinating institution), Sant’Anna School of Advanced Studies (Italy),

WaveComm (SME from Italy), Lifecare (SME from Norway), Centre Hospitalier Universitaire de Montpellier (France), Pfützner Science & Health Institute (Germany), and Forschungsinstitut der Diabetes-Akademie Bad Mergentheim (Germany).

▪ See the full list of the projects that were chosen in the 2019 Pathfinder calls.

**Background information**

FET-Open and FET Proactive are now part of the Enhanced European Innovation Council (EIC) Pilot (specifically the Pathfinder), the new home for deep-tech research and innovation in Horizon 2020, the EU funding programme for research and innovation.


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