

DIAdvisor™

Personal Device for Glucose Prediction and Advice in Diabetes

The DIAdvisor™ project aims at the development of a Blood Glucose prediction device which uses easily available information to optimise the therapy of patients with diabetes.

Project Objectives

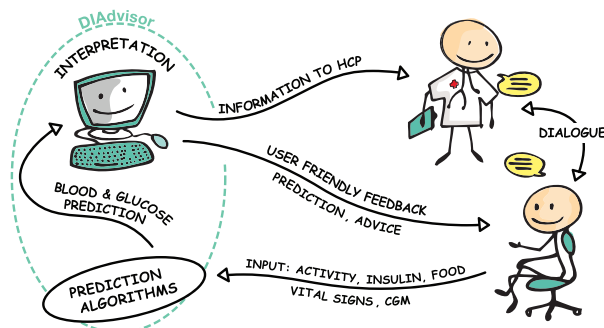
The key objective of diabetes treatment is to maintain the blood glucose at near to normal level. This is a demanding and difficult task for the individual patient and requires extensive involvement from Health Care Providers.

DIAdvisor™ objectives are to:

- Develop a Blood Glucose Prediction and Advisory system to assist patients
- Implement a device platform including vital sign and blood glucose sensors
- Improve the DIAdvisor™ system through two consecutive clinical trial iterations
- Provide a medical device technology that minimises the diabetes-related burden to patients and to healthcare systems by increased patient empowerment.

Project Description

The DIAdvisor™ is a large scale Integrating Project (IP). DIAdvisor™ will achieve its objectives by developing a unique system for patients with diabetes to help them manage their disease effectively, optimising safety and giving an improved quality of life.



The DIAdvisor™ concept includes non-invasive and minimal invasive sensors providing information regarding the patient, a mathematical model for prediction of near-term blood glucose levels and a handheld device platform for computation and interface to the patient. In the hands of the patient DIAdvisor™ will constitute a mobile near-term blood glucose predictor and treatment advisor useful for optimisation of the therapy.

Moreover the system will be able to be connected to the health care system enabling Health Care Providers to interact with patient and intervene if needed.

Although seemingly simple in concept, the problem of glucose prediction in an active individual has to date proved intractable. To overcome this, a well-balanced consortium of leading experts has been established, including academics, clinicians, user representatives and companies.

The technical findings of the project will be implemented in a device platform suitable for use in a clinical trial setting. In this way the technology will be validated in several clinical trials in EU.

Expected Results & Impacts

One main effect of DIAdvisor™ will be to reduce the negative effects of long-term hyperglycaemia without increased number of hypoglycaemias and therefore provide a reduction of the associated health costs.

Patient empowerment through DIAdvisor™ use will contribute in minimising the diabetes-related burden to the healthcare systems as well as promote a model of self-responsibility in taking care of one's health.

The expected outcome will represent a sound basis to improve diabetes control and quality of life in large populations of insulin-treated patients in terms of a reduction of debilitating diabetic complications and costly expenses from Health Care Systems.

Moreover, DIAdvisor™ will constitute a valuable opportunity for European companies to build up a special know-how leading to the development of products that could have a profound impact on the lives of millions.

Achievements during first 18 Months

The DIAdvisor™ project was initiated in 1 March 2008. The order of business was established, and an internal as well as an external website (www.diadvisor.eu) has been organised.

To evaluate the user aspects of the DIAdvisor™ concept a user survey has been performed among 24 patients and 21 Health Care Providers. The outcome supports that the DIAdvisor™ concept addresses real user needs. The study indicates that user preference is highest regarding short term prediction which is well in line with the DIAdvisor™ concept.

To design the prediction and advisor systems of **DIAdvisor™**, data from many individuals are required. For this, 12 sensor systems including blood glucose (BG), continuous blood glucose (CGM) and relevant vital sign measurements were developed. These systems were implemented in a data acquisition trial involving 90 patients at 3 clinical sites constituting 900 patients days.



The comprehensive data from this trial is being utilised for development of the **DIAdvisor™** prediction and advisory systems. In parallel a device platform is being developed for running these systems. Al together this first version of the **DIAdvisor™** system is planned to be tested in a clinical trial in 2010.



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Project co-ordinator:

Novo Nordisk A/S

Contact person:

Jens Ulrik Poulsen

Tel: +45 4443 9692

Email: jup@novonordisk.com

Website: www.diadvisor.eu

Partners:

- Novo Nordisk A/S (Denmark)
- Universitaet Linz (Austria)
- Lunds Universitet (Sweden)
- Universita Degli Studi di Padova (Italy)
- Centre Hospitalier Universitaire de Montpellier (France)
- Toumaz Technology Limited (United Kingdom)
- Intelesens Ltd (United Kingdom)
- Ondalys Sarl (France)
- Romsoft Srl (Romania)
- Institut Klinické A Experimentální Mediciny (Czech Republic)
- Oesterreichische Akademie Der Wissenschaften (Austria)
- Ramboll Danmark A/S (Denmark)
- Fédération Internationale Du Diabète Région Europe Aisbl (Belgium)

Timetable: from March 2008 to February 2012

Total cost: € 9,300,000

EC funding: € 7,100,000

Instrument: IP

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KEYWORDS

Blood Glucose Prediction, Diabetes control, Hypoglycaemia, hypoglycaemia, Non-invasive sensors, Patient empowerment