Resource Summary Report

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JDRF Artificial Pancreas Project Consortium

RRID:SCR_004010
Type: Tool

Proper Citation

JDRF Artificial Pancreas Project Consortium (RRID:SCR_004010)

Resource Information

URL: http://jdrfconsortium.jaeb.org/

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Description: Consortium aiming to accelerate the development of systems for automated control of blood glucose in patients with diabetes. Consortium investigators seek to research and develop strategies, which can be commercialized, that will confer the long-term benefits of improved glycemic control by combining novel automated control algorithms and hormone therapies with continuous glucose monitors and pump devices. The field of closed-loop artificial pancreas research requires expert diabetologists partnering with expert mathematicians and engineers. Consortium investigators include endocrinologists and control theorists at research institutions in the US and in Europe. Many of the diabetes device manufacturers have also participated, providing pumps and sensors with enhanced capabilities that allow for closed-loop experiments to be performed. The goals of the consortium include: * Design, optimization, and clinical testing of multiple algorithmic approaches to closed-loop control * An in silico simulation platform, accepted by the FDA, for validating candidate closed-loop control algorithms in place of animal trials * Reusable templates for constructing the Investigational Device Exemption regulatory documents that must be approved by the FDA prior to any in-clinic, computer-assisted, closed-loop control research involving people * A modular software platform-the Artificial Pancreas System-with a protocol-independent user interface and hooks to incorporate an arbitrary control algorithm and control various continuous glucose monitors and pump devices * A secure consortium Web site with a central repository for experimental data and interfaces to submit candidate control algorithms for centralized validation and to upload or download clinical data sets * the first outpatient studies of an overnight controller * the first outpatient studies of a hypoglycemia minimization strategy * the development and testing of a modular treat-to-range closed-loop approach * multiple studies of dual hormone (insulin and glucagon) devices and a means to improve insulin kinetics Ongoing and recently completed in-clinic studies at the end of 2011 include investigations into hypoglycemia prediction and avoidance

as well as fully-automated closed-loop control investigations using MPC and PID/PD-based algorithms. The most recent developments include the first-ever feasibility trials of portable, outpatient-based closed-loop control systems.

Abbreviations: Artificial Pancreas Consortium

Synonyms: Artificial Pancreas Project Consortium, JDRF/NIDDK Artificial Pancreas Project Consortium

Resource Type: portal, organization portal, consortium, data or information resource

Keywords: device development, product development, device, blood glucose, hypoglycemia, glucose monitor, pump device, glycemic control, insulin, glucagon, closed-loop control, clinical

Funding: JDRF ;
NIDDK

Resource Name: JDRF Artificial Pancreas Project Consortium

Resource ID: SCR_004010

Alternate IDs: nlx_158431

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Ratings and Alerts

No rating or validation information has been found for JDRF Artificial Pancreas Project Consortium.

No alerts have been found for JDRF Artificial Pancreas Project Consortium.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We have not found any literature mentions for this resource.