

'Artificial pancreas' for diabetes is testing well

June 28 2010, By Mary Brophy Marcus

Scientists are getting closer to offering an "artificial pancreas" to children and adults with type 1 diabetes that will help better control the swings of blood glucose that come with the disease.

Researchers working on artificial [pancreas](#) technology announced at this weekend's 70th Scientific Sessions of the American [Diabetes Association](#) that the latest tests of the technology show it can be used in real-life scenarios with success, including after eating a large meal and drinking a glass of white wine.

"The rubber is finally starting to hit the road. We're seeing more and more studies telling us it can be done and it can be done safely," says Aaron Kowalski, research director of the [Artificial Pancreas Project](#) for the Juvenile Diabetes Research Foundation. Kowalski says they believe the technology could be available within the next few years.

Artificial pancreas technology has three components:

- A continuous glucose monitor, attached by a slender wire to the body, that measures [blood glucose](#) levels and the direction they are trending through the day, as opposed to pricking the finger and using test strips to get a single, snapshot blood sugar reading.
- An insulin pump, also attached to the body, that doses insulin continuously at a low level and can be adjusted.

- A sophisticated computer program that can help the two devices "talk" to each other and automate the process.

The first two technologies are already available. Researchers with the Juvenile Diabetes Research Foundation have been testing the multi-component system in a range of in-clinic situations.

Earlier this year, in a study in *The Lancet*, they showed that the artificial pancreas technology could better control blood glucose levels during sleep and reduce the chance of hypoglycemia, or dangerously low blood sugar, in children with type 1.

In this weekend's presentation, researchers reported that the benefits remained when the system was tested in 12 adults, ages 18 to 65, who ate a large meal and drank a glass of white wine before bedtime.

"It was quite a large meal -- a meal like you'd eat out at a restaurant with a glass of wine. It included over 100 grams of carbohydrates," says lead researcher Roman Hovorka, principal research associate at the University of Cambridge Metabolic Research Laboratories.

In the study, 70 percent of the time, participants were within their target blood glucose range, up from 47 percent when they didn't use the technology.

Even with this technology, you're still working backward, says endocrinologist Robert Rizza, executive dean of research at the Mayo Clinic. "It takes time for that insulin to be absorbed. Despite that fact, it's been working very well and helps avoid very high and very low blood sugars."

BEST CANDIDATES FOR ARTIFICIAL PANCREAS

New research by Joslin Diabetes Center scientists looked at which [type 1 diabetes](#) patients are most likely to benefit from using an artificial pancreas:

- Those who engage problem-solving skills to cope with frustration.
- Those who see continuous glucose monitors as a way to better understand glucose patterns.
- Those who have good support from spouses and significant others.

(c) 2010, USA Today.

Distributed by McClatchy-Tribune Information Services.

Citation: 'Artificial pancreas' for diabetes is testing well (2010, June 28) retrieved 24 April 2024 from <https://medicalxpress.com/news/2010-06-artificial-pancreas-diabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.