Artificial Pancreas

Imagine...

a future where tight glucose control is maintained automatically.

Imagine a young man like Bobby. Diagnosed at three, he wasn't much older when he learned how to test and inject insulin by himself. And while he may see himself as "tough," that doesn't make living with type 1 diabetes (T1D) any easier—for him or his parents, who've had more than a few sleepless nights.

Now imagine how all that changes with an artificial pancreas. Once Bobby has the device, the system will do all the heavy lifting involved in managing his T1D. It will give Bobby insulin as he needs it, prevent most high and low-blood-sugar events, and provide alerts if his glucose levels ever go too low or too high—even in the middle of the night. Bobby will still probably initially need to do some occasional finger sticks and provide information to the system before he eats or runs around. But that's it.

Bobby can sleep soundly, and so can Mom and Dad. Because for the first time, T1D will take a backseat...day and night.

JDRF isn't just imagining this. We're making it happen.

"For the first time, T1D will take a backseat in Bobby's life."

An artificial pancreas system, insulin taken just once a day, vaccines that prevent T1D, implanted beta cells free from autoimmune attack, and restoration of beta cells are all part of JDRF's plan to progressively remove T1D from people's lives until it is finally gone.

But as we work to deliver these advances, one fact is inescapable: increased funding is essential. Clinical trials and development are expensive. And for these possibilities to become life-changing realities, JDRF needs your help.

Because with your support, we can create a world without T1D.

Visit jdrf.ca to learn how you can turn type one into type none.

Artificial Pancreas

CURE
TREAT
PREVENT

Why

Currently, managing T1D is relentless. It requires people to constantly balance insulin delivery against the amount of food eaten, the amount of exercise, and even the stress of the workplace or school. Few people, regardless of age, can focus on this balancing act every moment of the day. But technology can.

What

Artificial pancreas (AP) systems will be the most revolutionary advance in diabetes care since the discovery of insulin. Like the body's pancreas, AP systems will react to rising blood-glucose levels by combining monitoring technology with insulin pumps to provide the right amount of insulin at the right time. Not only will AP systems result in much tighter control, lowering the risk of health complications later in life, they will also reduce the constant worry about blood-sugar levels and what must be done to manage them.

How

Back in 2006, JDRF launched the Artificial Pancreas Project. The goal of the project was simple but stunningly ambitious: use new technology and science to replicate, as closely as possible, the operation of a normal human pancreas.

When JDRF stepped in, little was happening in the field. But through a strategic approach of direct funding and collaborative ventures, dramatic advances using integrated smart technology to automate insulin management have already occurred—with more in development and being applied to real-world solutions.

Today, we're drawing closer to seeing AP systems come to market and closer to our end goal of type none. In late 2012, the FDA released final guidance for device makers to secure approval and commercialize the system. Outpatient trials of first-generation systems are already under way. You can see one person's experience living with an AP system at tiny.cc/aptrial.

But as game changing as the initial AP systems will be, they're only one milestone in our sights. And we need your support to further the advancements. It's going to take tens of millions of dollars for JDRF to continue working on initiatives to advance AP systems, such as developing even faster-acting insulin and delivery to boost the overall performance of the AP system; improving blood-glucose sensing technology to achieve greater accuracy, ease of use, and more accurate control; and creating systems that add hormones such as amylin, glucagon, or leptin to allow for full automation and the most precise control imaginable.

All of these initiatives are bringing us closer to making an artificial pancreas that fully automates insulin dosing and achieving our ultimate goal of turning **type one into type none.**

A technology product that will mimic the natural functions of the body's own pancreas; automatically reacting to blood-sugar levels and administering appropriate amounts of insulin.