[**First patient gets cell-based treatment for diabetes**](http://stemcellfoundation.ca/en/2014/11/03/first-patient-gets-cell-based-treatment-for-diabetes/)

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In a recent[blog post](http://stemcellfoundation.ca/en/2014/10/02/a-step-closer-to-curing-diabetes/), we reported a prediction by the University of British Columbia’s **Dr. Tim Kieffer** that it is “only a matter of time” before stem cells provide the needed source of cells to replace insulin injections. He’s confident this will occur within 10 years.

One way it could happen is now being tested in a clinical trial at the University of California, San Diego Health System, where an American company called ViaCyte has successfully implanted its first patient with a device to treat type 1 diabetes.  Not only does ViaCyte have a Canadian connection, the exciting news from California underscores the importance of Canada implementing the Canadian Stem Cell Strategy & Action Plan.

The California Institute of Regenerative Medicine (CIRM), which has supported ViaCyte in its work, [blogged about the VC-01](http://blog.cirm.ca.gov/2014/10/29/moving-one-step-closer-to-a-therapy-for-type-1-diabetes/), describing it as “about the length and thickness of a credit card but only half as wide.” Implanted under the skin, the device’s progenitor cells secrete insulin whenever they detect that blood sugar is high, restoring glycemic harmony. While it can move out the insulin as needed, the device stops the immune system from moving in and destroying the insulin-producing cells.

These are, of course, early days: the primary object of the trial is to see if the device is safe, if patients can tolerate it with no adverse effects. And if they can, does it, in fact, treat their diabetes?

That said, CIRM’s leaders are understandably chuffed. The news “that this is now truly out of the lab and being tested in patients is an important step in a long road to showing that it works in patients.”  They urge cautious optimism: “The people at ViaCyte, who have been working hard on this project for many years, know that they still have a long way to go but for today at least, this step probably feels a little bit more like a skip for joy.”

What’s the Canadian connection? ViaCyte has one of the world’s top insulin experts as a scientific advisor:**Dr. James Shapiro**, Director of the Clinical Islet Transplant Program at the University of Alberta. In the 1990s, Dr. Shapiro co-developed the Edmonton Protocol, a procedure for implementing pancreatic islets for the treatment of type 1 diabetes.

Canada has been a leader in diabetes research since the early 1920s, when D**rs. Frederick Banting and Charles Best** discovered insulin. The more recent work done by Dr. Shapiro and the University of Alberta team, and stem cell experts like Dr. Kieffer and the University of Toronto’s **Dr. Derek van der Kooy**, who first isolated pancreatic stem cells, has kept Canada at the forefront.

But, as**Dr. Alan Bernstein** [told the Globe and Mail](http://www.theglobeandmail.com/life/health-and-fitness/health/coalition-calls-on-ottawa-to-commit-500-million-for-stem-cell-research/article21362462/)last week at the launch of the Canadian Stem Cell Strategy & Action Plan, “the rest of the world is not standing still.”

California has invested $3 billion in stem cell R&D. The CIRM/ViaCyte news is proof the investment is  yielding significant dividends.

“We risk slowing down our investment while the rest of the world is speeding up, so relatively we will fall further and further behind,” Dr. Bernstein, Chair of the Canadian Stem Cell Foundation,  told the Globe. “This sort of research and the clinical trials are both long-term [prospects]. They need sustained investment and they are expensive.”

The Strategy & Action Plan plots a course for Canada to lead the way in delivering up to 10 new treatments for diseases to the clinic within 10 years that could transform the health care landscape. Find out more about the Strategy [here](http://stemcellfoundation.ca/en/canadian-strategy/).