



## **Historic Progress for JDRF Encapsulation Research Program**

First people with type 1 diabetes receive experimental encapsulated cell replacement therapies in clinical studies

Two JDRF-funded partners have successfully implanted people with type 1 diabetes (T1D) with experimental encapsulated cell replacement therapies in clinical studies. These two programs are running in parallel and are evaluating two distinct encapsulation therapies. Encapsulated cell replacement therapy involves surrounding cells with the potential to secrete insulin with a protective barrier or device and implanting them in the body using a minor surgical procedure. The implanted encapsulated beta cells will sense a person's glucose levels and produce insulin as needed, while the barrier shields them from the body's immune system.

"JDRF is excited about the start of clinical evaluation of these encapsulated cell replacement therapies," said Derek Rapp, JDRF president and CEO. "Encapsulated cell replacement therapies have the potential to fundamentally transform the management of type 1 diabetes, and we are enthusiastic about the rapid progress of research in this field. We look forward to the results from these studies and moving one step closer to new therapies for type 1 diabetes."

The initial clinical trials of <u>ViaCyte's</u> experimental therapy called VC-01<sup>™</sup> recently began at the University of California at San Diego. This product concept encapsulates immature human pancreatic cells derived from a stem cell source in an immune-protective device called the Encaptra<sup>®</sup> system. It is the first ever use of stem cell-derived islets for people with T1D.

The other trial involves <u>Beta-O2's</u> experimental therapy called BetaAir and is being conducted at Uppsala University Hospital in Sweden. The immune protective BetaAir encapsulation device contains human islets from donated cadaver pancreases. A unique feature of the BetaAir system is the ability to provide the implanted cells with additional oxygen via a special port to help sustain them after implantation.

These initial human trials represent a major step forward in the development of encapsulated cell replacement therapies. They are additional examples of the accelerating pace of T1D research as more and more potential therapies move from animal studies to testing in people with T1D. Information from both studies will provide researchers with critical information about the therapies for use in designing subsequent studies to evaluate their effectiveness in T1D.

For more information or to support JDRF's encapsulation research program, please click here.



Experimental Products by ViaCyte's VC-01 and Beta-02's ßAir