

## **Researchers to implant pig cells in diabetics**

July 23 2009, By RAY LILLEY, Associated Press Writer

(AP) -- A New Zealand biotech company began a trial Thursday that will implant cells from newborn pigs into eight human volunteers as an experimental treatment for their diabetes.

The <u>cells</u> produce pig insulin, which is very similar to human insulin and has the same effect of lowering blood sugar, and Living Cell Technologies hopes the cells may be able to delay the effects of <u>Type 1</u> <u>diabetes</u> - including <u>blindness</u>, premature coronary illness and limb amputation caused by poor blood circulation.

Though Prof. Bob Elliott, medical director of the company, acknowledges that, even in the best case scenario, the treatment would not eliminate all of the symptoms.

Some scientists have warned, however, that implanting pig cells carries the risk of introducing a new virus to humans. Others have noted that it is too soon to begin testing on humans because no animal trials were conducted.

Elliott said Thursday that the risk of a pig endogenous retrovirus - the porcine virus thought to be most contagious for humans - infecting humans is largely "theoretical."

"There is no evidence of a risk" of retrovirus infection, he said. "Nobody has developed a retrovirus."

The <u>piglets</u> being used, recovered from 150 years of isolation on islands



south of New Zealand, carried no known agent that could infect humans and are held in a fully closed, sterile environment, he added.

Elliott has run two previous trials, the first with six patients in New Zealand in 1995-1996. The other, in Russia with 10 patients, began in July 2007.

The cells implanted into one of the volunteers in the New Zealand study continued producing insulin 12 years after being implanted - "proof of principle that this (methodology) can work," he said in an interview with The Associated Press in October. The others either rejected the pigs cells or the implanted cells stopped producing insulin after a year.

On Thursday, endocrinologist John Baker at Middlemore Hospital in the northern city of Auckland began monitoring the first volunteer who will receive pig cells. They will be implanted after two months, Elliott said Thursday. The company will then wait several months before implanting cells in a second volunteer, he said.

"This is a very arduous trial," he told the AP on Thursday.

The cells will be coated in a seaweed-derived membrane to discourage the volunteers' immune systems from rejecting them. Because of the coating, the participants will not use immunosuppressant drugs, he said.

The eight trial patients suffer from a very unstable, severe or "brittle" form of diabetes and were chosen from a pool of 1,000 volunteers, he said.

In Type 1 diabetes, the body mistakenly attacks and destroys cells in the pancreas that produce insulin, the hormone crucial to converting blood sugar to energy. It's different from the far more common Type 2 diabetes that is usually linked to obesity, where the body produces



## insulin but gradually loses the ability to use it properly.

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