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Insulin independence for diabetes achieved

11 May 2017 | News

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Scientists from the Diabetes Research Institute (DRI) at the University Of Miami Miller School Of Medicine have produced the first clinical results demonstrating that pancreatic islet cells transplanted within a tissue-engineered platform can successfully engraft and achieve insulin independence in type 1 diabetes.

The insulin-producing cells have traditionally been implanted within the liver, but this transplant site poses some limitations for emerging applications, leading researchers to investigate other options. DRI scientists have focused on the omentum, an apron-like tissue covering abdominal organs, which is easily accessed with minimally invasive surgery and has the same blood supply and physiological drainage characteristics as the pancreas.

In type 1 diabetes, the insulin-producing cells of the pancreas have been mistakenly destroyed by the immune system, requiring patients to manage their blood sugar levels through a daily regimen of insulin therapy. Islet transplantation has allowed many patients to live without the need for insulin injections after receiving a transplant of donor cells. Some patients who have received islet transplants at the DRI have been insulin independent for more than a decade.