

## **FAQ: Pancreatic islet cell transplants**

- **What is a pancreatic islet cell?**

Your pancreas is an organ behind your stomach which helps digest food. Up to 2% of your pancreas consists of specific cells known as islet cells. These islet cells produce a number of hormones including insulin, which is responsible for regulating your body's blood sugar.

- **How does it work – and what happens if it doesn't?**

Every time you eat, blood sugars enter your bloodstream. If your pancreas is working properly, the insulin it produces will carry these sugars to your cells, where they're broken down to produce energy.

However, if you have type one insulin dependent diabetes, your body is unable to do this. This is because your body's immune system attacks and destroys the pancreatic islet cells which produce the insulin.

- **Who could benefit from an islet transplant?**

If a person's blood sugar becomes too low, they can fall into a coma and die. Most type one diabetics prevent this happening by using blood monitors; varying their insulin intake; and learning to recognise when they need to take action.

However, there are some people with particularly hard to control type one diabetes, known as "brittle diabetes." These people experience frequent shifts in their blood sugar levels, and after many years of extreme highs and lows can lose the early symptoms that warn them their sugar levels are becoming dangerously low. Such patients can be helped with an islet transplant.

- **What does an islet transplant involve?**

When a patient dies they may be able to donate their organs, including the pancreas. After donation the pancreas is taken to an islet cell laboratory so the islet cells can be separated out. These cells are then suspended in a special fluid which allows them to be injected into one of the major blood vessels of the liver.

In a successful transplant, the islet cells will then start producing insulin. This usually leads to the person regaining the ability to recognise when their sugar levels are dropping too low. In most patients, it reduces the amount of insulin they need to control their sugar levels. Some patients are able to stop their insulin therapy altogether, at least temporarily.

- **Can all diabetics be treated with an islet transplant?**

An islet transplant is currently only recommended for diabetic patients who have lost the ability to recognise when their sugar level is dropping too low. For the donated islet cells to thrive in the diabetic patient, the donor needs to be matched with the patient using a number of different criteria. The patient will also need treatment to suppress their immune system.

- **Who can I speak to about islet transplantation?**

If you think an islet transplant is something that you should be considered for, the first person to speak to is the doctor who takes care of your diabetes. He or she will be able to refer you to specialists for consideration for islet transplantation.