

Pancreas transplants

What you need to know



Information for patients

Sheffield Kidney Institute (Renal Unit)



What is the pancreas and why is it transplanted?

The pancreas is part of the digestive system and is quite high up in your abdomen. It lies across your body where your ribs meet at the bottom of your breastbone, just behind your stomach.

The pancreas has two important jobs in the body:

- It makes digestive juices which enter the gut and help digest the food you eat.
- It also makes hormones, which it releases into the blood. One of these hormones is insulin. Insulin is made by small clusters of cells in the pancreas called islets. When these cells are damaged, they don't make insulin and a lack of insulin causes diabetes. Insulin is very important in the body because it helps to keep the level of sugar in the blood at a stable level.

By transplanting a new pancreas into a diabetic patient, the transplant team also transplant the islets. These islets provide a new source of insulin, which means patients no longer need to inject insulin.

When and where is a pancreas transplant performed?

A pancreas transplant is usually carried out at the same time as a kidney transplant. The surgery is performed by the transplant team at Manchester Royal Infirmary.

Why transplant a whole pancreas and not just the islet cells that make the insulin?

Although research has been carried out for many years into transplanting islet cells, the procedure is still being tested. Only about 2% of the pancreas is made up of islet cells and it is a difficult procedure to extract those cells to transplant them on their own.

A few patients have received islet transplants, with some success. Having a whole pancreas transplant usually gives better results and lasts for longer, although it does mean a bigger operation.

Is a pancreas transplant suitable for all diabetic patients?

No. A pancreas transplant is only suitable for type 1 diabetic patients – people who become diabetic when they are young and do not make any insulin.

Patients with type 2 diabetes do still make insulin, but develop a resistance to it. In most cases, a pancreas transplant would not help someone with type 2 diabetes. A pancreas transplant is normally restricted to a patient who also needs a kidney transplant.

Is it a simple procedure?

A pancreas is usually transplanted at the same time as a kidney. It is a more complicated procedure than a kidney transplant and takes much longer to perform.

The operation involves connecting the blood supply of the pancreas to the blood vessels that take blood to and from the leg, usually the right leg. The leg normally gets much more blood than it needs and does not suffer from the operation.

As well as connecting the blood vessels, another join has to be made into a piece of bowel to drain away the digestive juices that the new pancreas makes. This is carried out through a long cut made in your abdomen.

The blood supply to the new kidney is usually connected to the blood vessels going to and from the left leg.

Where does the pancreas come from?

The pancreas (and kidney) comes from someone who died and wanted to donate their organs to help someone after their death. The process of dying may damage the pancreas and kidney slightly, and you need to realise that no transplant organ is new.

The transplant team carefully inspect the pancreas before it is used and may cancel the transplant operation at the last minute if they are not happy with how it looks.

The transplant team cannot promise that the pancreas will work as they would hope after the operation. The transplant team would not knowingly give you anything that would not work or cause you harm.

Do I need to take any medicines after the transplant?

Yes. Following your transplant, you need to take drugs to stop your body rejecting the pancreas. Your immune system recognises that the pancreas is foreign to you, and reacts against it as if it was an infection and tries to destroy it. This process is called rejection when it refers to a transplant.

You need to take drugs that suppress your immune system to stop rejection happening. These drugs are called immunosuppressants. Because your body can reject the pancreas at any time after the transplant, the drugs must be taken every day.

For the first three months after your transplant, you will need immunosuppressant drugs at a higher dose. After this, your doctors will usually be able to reduce the dose a little, but they will never be stopped.

As you will be having a kidney transplant at the same time, you will be having these immunosuppressive drugs anyway. You should not need to take insulin again, or any other drugs for dialysis such as phosphate binders.

What are the side effects of taking immunosuppressants?

All drugs have side effects, and immunosuppressive drugs are no different.

Some side effects happen while the doses of the drugs are high but are much less of a problem later on as your dose is reduced.

Side effects vary between the drugs and include things that can be treated such as high cholesterol and raised blood pressure.

Taking immunosuppressants increases your chances of getting an infection, particularly viral infections (such as cold sores and shingles and a viral infection called CMV).

Being immunosuppressed also increases the chances of getting cancer, particularly skin cancer but this is usually easily seen and treated. The best ways to avoid skin cancer are:

- Staying out of the sun as much as possible
- Using a total sun block whenever you do go out in the sun

We have another leaflet that explains about skin cancer and how to help prevent it. Please ask for a copy if you would like to read it.

There is a one to two in a 100 (1 – 2 %) chance of getting a lymphoma (a cancer of the lymph glands), some of which can be treated but some may progress and result in death.

Although these risks of infection and cancer sound worrying, you are much more likely to be well and alive if you have a transplant than if you stay on dialysis.

Are there any risks?

Like all operations, there is the possibility that complications will develop.

In the case of pancreas transplants, these complications include:

- Rejection of the pancreas. Rejection happens in about 20 in 100 (20%) of pancreas transplants. The transplant team will be monitoring you for this problem and you will be given extra immunosuppressant treatment if rejection does happen. Rejection does not mean that you will lose the pancreas, but you will need to spend more time in hospital.
- Clotting of the blood supply to the pancreas usually happens in the first week after transplant in about 5 in 100 (5%) patients. Unfortunately, this means the pancreas is lost.
- Clotting of the blood supply is less likely to happen with kidney transplants, but it may still occur in about 2 in 100 (2%) patients. Again, this means the kidney will be lost.
- Bleeding. About 40 in 100 (40%), will need a second operation to fix a problem that occurs soon after the transplant. The commonest of these is bleeding.
- Pancreatitis is inflammation (swelling) of the pancreas and is common in the first few days after surgery.
- Some patients with diabetes are more likely to have problems with the blood supply to the nerves, and rarely patients have developed paralysis after the operation.

There are risks in having an organ from an organ donor, although they are rare.

- Around 1 in 1000 organ donors will have a cancer that was not known about and which gets passed on to the person having the transplant. If this happens, many cancers can be treated by

stopping the immunosuppressants drugs and removing the transplanted kidney and pancreas.

Some organ donors are known to have brain cancers which have a low chance of spread (around 2%) to a recipient. The transplant team will ask you if you would accept a transplant from such a donor.

The pancreas and kidneys removed from some donors have a small chance of passing on infections that we did not know about before the operation. The transplant team will do their best to reduce the risk of this happening, but cannot guarantee that this will not happen. You would need to have an extra course of antibiotics after the transplant.

The transplant team would not use organs from a donor if the transplant team thought there was a chance you would catch an infection that the transplant team could not fully treat.

More common risks with any type of surgery are:

- Chest infection
- Wound infection
- Bruising

In rare cases, more serious complications can develop. These are:

- Deep Vein Thrombosis (DVT) or blood clots in the legs that can develop after any type of operation. This blocks the flow of blood around your body.

The symptoms usually only affect one leg, and include:

- pain
- redness
- swelling

Without treatment, long term complications can include having a painful swollen leg, leg ulcers and skin discolouration.

- In rare cases, a piece of blood clot breaks off and travels to the lungs and causes chest pain and severe breathing problems. This is called a pulmonary embolism (PE) and causes permanent lung damage and death in a small number of people.

Some people may be at more risk of getting a DVT or PE. For example, being over the age of 60, being overweight or obese, or having had blood clots in the past. When you are admitted to the ward, your doctor will look at your risk of developing a DVT, and may suggest further treatment to help stop this happening.

We have other leaflets that explain about:

- Blood clots and what you can do to help stop
- Stopping smoking before your operation

Please ask if you would like to read these.

If you would like help and support to lose weight before the operation, please ask to be referred to a dietitian.

- Very rarely, other complications may also occur, which can result in a long stay in hospital, or prolonged or permanent disability. The surgeons will talk about these when you are referred.

Problems in the early days after a transplant are more common if you have both a kidney and pancreas than if you have a kidney alone.

You will be carefully assessed to make sure you are fit enough to tolerate the operation before your name is put on the waiting list. Part of this assessment will involve you having a number of tests and investigations.

The risk of dying in the first year after a pancreas transplant is around 2 in 100 (2%). It may be higher if you have heart problems or other conditions that make you a higher risk patient. You will be told if this is the case. If you are very fit then this risk may be much less.

What are the benefits of a pancreas transplant?

As well as not needing to give yourself insulin injections, you won't need to worry about frequent blood sugar tests or diabetic diets.

The biggest benefit is that once you have a pancreas transplant, and your blood sugars are well controlled most of the damage that diabetes causes is stopped.

In some cases, some of the nerve damage that diabetes has caused may get better, although it usually takes several years to see any improvement.

Patients who have a kidney and pancreas transplant together are likely to live longer than those who have a kidney transplant on its own. This is because your blood sugar levels will be better controlled and so you will have fewer diabetic complications in the future.

How successful is it?

A kidney transplant in a diabetic patient is very successful.

- Nearly 9 in 10 (90%) work one year after the operation
- The transplanted kidney lasts an average of eight to ten years

Results of a pancreas transplant are also good:

- Nearly 8 in 10 (80%) working after a year
- The pancreas also lasts an average of ten years

Because of its success rate, a combined pancreas and kidney transplant is the recommended treatment for patients with diabetes and kidney failure who are fit enough.

Occasionally the transplant isn't successful and the pancreas may need to be removed. This happens to 1 in 10 (10%) of patients in the first year.

We must obtain your consent for any procedure or treatment beforehand. Staff will explain all the risks, benefits and alternatives in more detail before they ask for your consent. If you are unsure about any part of the procedure or treatment that is being suggested, please do not hesitate to ask for more information.

How long will I be in hospital?

For a kidney transplant alone patients normally stay for 5 to 7 days. Following a combined kidney and pancreas transplant the normal stay is 2 to 3 weeks, but may be longer.

Will I need to be seen in clinic?

After a pancreas transplant the transplant team will need to review your progress regularly.

A typical follow-up schedule after going home from hospital is:

- two or three visits in the first three weeks
- one visit a week for the next six weeks
- monthly for six months after that
- and then every three months

At first you will be seen at the pancreas transplant centre, but later you may be followed up at your local hospital.

When might I be able to go back to work?

Most people will need to take at least three months off work after a pancreas transplant. This will depend on:

- How well your transplant is working
- How often you need to come to clinic for follow-up
- The type of work you do

What happens to my old pancreas?

The transplant team do not remove your own kidneys or pancreas – they are left in place. Your own pancreas carries on making digestive juices.

Do I need to continue on a diet?

You will not need to follow a diabetic or a renal diet. The transplant team would advise you to avoid putting on a lot of weight. This will help the transplanted organs to work longer and keep you healthy.

Is there anything else I should consider?

To help you make a decision about whether to have a pancreas transplant, you need to think about:

- The damage diabetes does to your kidneys, your eyes, your arteries and your nerves.
- A pancreas transplant has risks, but as we explained in this leaflet, you will be carefully looked after to help stop these from happening.
- Occasionally patients may die from complications after combined pancreas and kidney transplantation (but they may die after kidney transplant alone), but it is uncommon - 2 in 100 (2%).

A successful pancreas transplant would reduce the damage that diabetes causes. Your chances of being alive 10 years from now are better than if you have a kidney transplant alone.

What do I do next?

If you are interested in being assessed for a kidney and pancreas transplant, ask the kidney specialist you see in clinic to refer you to the transplant team at Manchester. They will send you an appointment for an assessment and a more detailed discussion. You will also need a number of tests on the heart and lungs which can be done in Sheffield.

Even if you are not sure, you may want to be referred to Manchester for more information.

Many patients will also want to be assessed locally in Sheffield for a kidney transplant, especially if they have a possible living donor. This process can take place at the same time so you do not have to make a decision before referral.

A living donor kidney transplant offers the best chance of receiving a kidney transplant before you need dialysis treatment.

What if I just want a kidney transplant without a pancreas?

If you prefer just to have a kidney transplant, the assessment and surgery would be carried out by the transplant team at the Northern General Hospital in Sheffield. If you are not sure, you should also ask to be referred to the transplant team in Sheffield.

You can also find out more about having a pancreas transplant on the NHS UK website. See:

<https://www.nhs.uk/conditions/pancreas-transplant/>

Contact details

Veronica Lennon (Transplant Manager) can be contacted for more information on:

- **0114 271 5138**



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