

Having a simultaneous pancreas-kidney (SPK) transplant

This leaflet explains more about having a SPK transplant, including the benefits, risks, alternatives, and what you can expect at the time of the transplant.

What is a SPK transplant?

A SPK transplant is a treatment for patients with kidney failure and insulin-dependent diabetes. The kidney and pancreas are removed from a person who has died (the deceased donor) and given to another person (the recipient).

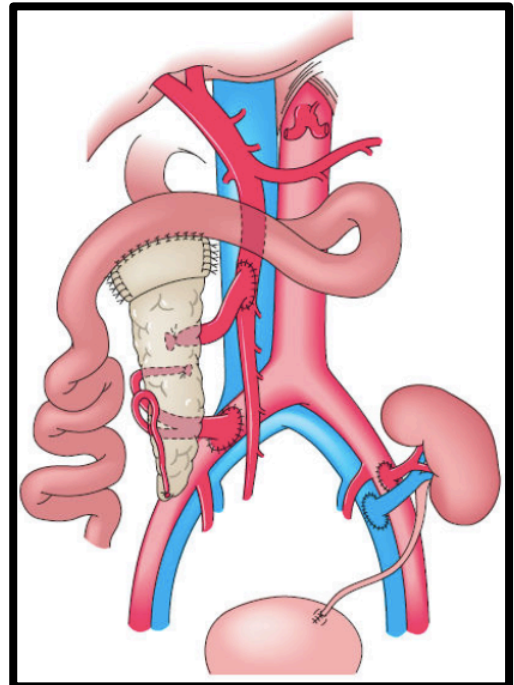
The transplanted pancreas produces the insulin that the recipient needs and it responds to the recipient's own blood sugar levels. The pancreas also produces enzymes (chemicals that break down tissues) that your body doesn't need. The transplanted pancreas is joined to your blood vessels and intestines, and these enzymes flow into your gut.

There are alternative treatments, but a SPK transplant is often the best treatment for kidney failure patients with insulin-dependent diabetes who are fit enough for the operation. A SPK transplant is not a cure, and has risks as well as benefits. SPK transplantation is major surgery and should be considered carefully.

Why should I have a SPK transplant?

For most patients, having a SPK transplant leads to a better quality of life and a longer life. This is because patients no longer have to rely on dialysis; they have more freedom to travel, work, and they can eat and drink more freely. Most people say they have more energy and feel more able to cope with everyday activities.

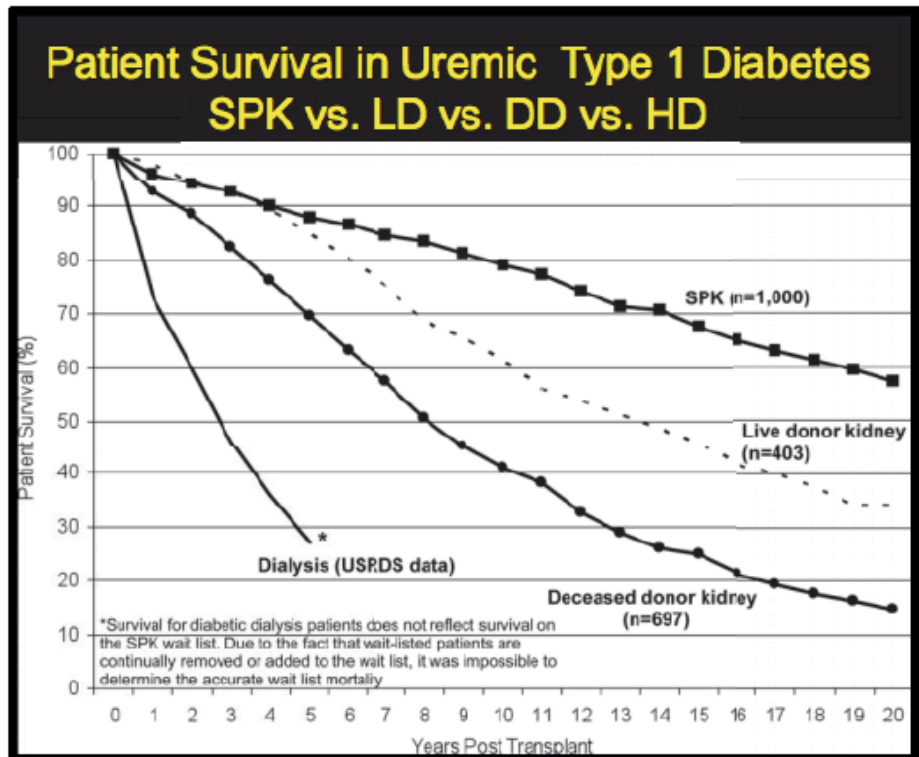
In addition, the pancreas transplant protects the kidney transplant. Patients who receive a SPK have better kidney transplant outcomes. So, your kidney works longer and you live longer!



It is very important to understand that patients that receive a SPK live longer than receiving a kidney transplant alone. As you can see in the graph to the right, the survival of patients following SPK is superior to all forms of kidney transplant (both live donor transplant and deceased donor kidney transplant)

Blood sugar control is usually very good, and the recipient does not need to inject insulin or check their blood sugars regularly.

Dangerously low blood sugars do not occur. Complications of diabetes such as eye disease (diabetic retinopathy), gut disease (diabetic gastroparesis), nerve disease (diabetic neuropathy), and heart and blood vessel diseases often stabilize after SPK transplantation. Sometimes these diseases get better.



What are the risks?

As with any medical procedure, there are risks associated with SPK transplantation and it is important to understand these.

We believe it is very important for you to understand the potential risks as well as the potential benefits of having a SPK transplant.

Primary non-function and pancreas failure

Sometimes the transplanted organs never work (primary non-function). This happens in 1 to 3 out of 100 pancreas transplants, and 1 to 2 out of 100 kidney transplants. The failed transplant will then need to be removed by a surgeon.

Sometimes the pancreas may work for a few days or weeks, but then stop working. This may be due to blood clots within the pancreas, or inflammation of the pancreas. Occasionally the pancreas may be working, but might have to be removed due to infection or leakage of enzymes.

Overall, between 5 and 10 out of 100 transplanted pancreases need to be removed within the first year after the transplant.

Delayed kidney function

About 75 out of 100 kidney transplants from deceased donors start to work within a few hours of surgery. If this doesn't happen, (delayed graft function or sleepy kidney), you will need dialysis until the new kidney starts working. This may be a few days or sometimes a few weeks. If you have a sleepy kidney, you may need a kidney biopsy (where a tiny piece of tissue is removed from your kidney with a needle and examined under a microscope) to make sure that there are no other problems with the kidney.

Delayed kidney function is much less common after SPK than after a kidney transplant alone because the kidney quality with a SPK transplant is excellent. The delayed graft function rate following an SPK is 5-10%, where as it is 25-30% after a kidney transplant alone.

Infection

After a SPK transplant you may get an infection in surgical wound, abdomen or urine. These infections can usually be treated with antibiotics, but sometimes another operation or drain placement is needed.

Bleeding

Between 5 and 10 out of 100 SPK might need a further operation to address bleeding or evacuate old blood. Bleeding that may require a second operation is more common after a SPK than a kidney transplant alone.

More surgery

A further operation may be needed for bleeding, infection, or to rule out any problems with the first operation. 10 out of 100 SPK patients need more surgery after the transplant. 5 to 10 out of 100 patients may develop a hernia in the transplant scar and may need an operation to repair this months or years after your transplant.

Rejection

Sometimes your body may recognize the new kidney and/or pancreas as foreign and start to attack it. This process is called rejection. Between 5 and 10 out of 100 patients who have had a SPK transplant will have an episode of rejection during the first year. Rejection is diagnosed by taking a sample of kidney or pancreas tissue to look at under the microscope (a biopsy). Most episodes of rejection can be treated by increased doses of immunosuppressant medication. Rejection rates are slightly higher after SPK than after a kidney transplant alone.

Risks of immunosuppressant medications

You will need to take medication to suppress the immune system during the whole time that the SPK transplant lasts (All transplant patients need to take immunosuppressant medications!). This medication has side effects including an increased risk of infection and, in

the longer term, cancer, particularly skin cancer. Other side effects include a higher risk of high blood pressure, and high cholesterol (a fatty substance found in the body that can cause narrowing of the blood vessels). While you are in hospital, the transplant pharmacist will talk to you about these possible side effects and how to monitor and manage them. For example, using high factor sun block cream to reduce the risk of skin cancers. At your transplant follow-up clinics we will check your blood pressure, cholesterol and blood sugar.

Other risks

Rarely, the blood vessels supplying the pancreas become swollen, or may erode into other organs. These problems cause pain, back pain, or bleeding into the intestines. This is extremely rare and happens in less than 1 in 100 patients, and will require major surgery. This can occur in a pancreas transplant that is working well, or even after the pancreas has stopped working or has been surgically removed.

If the transplanted pancreas needs to be removed, your own intestines will need to be repaired at the site where the transplanted pancreas was previously attached.

Survival

The transplanted pancreas, on average, works for 10-12 years after SPK.

Sadly, between four to six out of 100 patients will not survive the first year after SPK transplant surgery. This is due to complications from the surgery, complications from the immunosuppressant medications or other health issues. In comparison, 5 out of 100 patients will not survive the first year after kidney transplant alone.

But, again, SPK patients have better long-term survival than patients who receive a kidney transplant alone.

Are there any alternatives?

1. Live donor kidney transplant – a kidney transplant from a live donor is a very good option, as they tend to work straight away, and usually work for longer than a kidney from a deceased donor. This is a smaller operation (two to four hours) with less chance of bleeding, needing further surgery, and other major complications. However for many kidney patients finding a suitable live donor can be difficult. Without a pancreas transplant you will still have diabetes, and the immunosuppression medication that you need to take for the kidney transplant may make your blood sugar control worse. However, research has shown that kidneys work longer after SPK compared to live donor kidney transplant when the patient is alive beyond 10 years following transplant. Both options provide wonderful, long-term kidney function.

2. Deceased donor kidney transplant – a kidney transplant from a deceased donor, without a pancreas transplant. This is a smaller operation (two to four hours) with less chance of bleeding, needing further surgery, and other major complications. The average waiting time is

8 to 10 years in Georgia compared to 1-3 years for a SPK. You will get transplanted faster by being a candidate for a SPK.

3. Kidney transplant followed by a pancreas transplant – a pancreas transplant from a deceased donor can take place 3-6 months after a live donor or deceased donor kidney transplant. Because the transplanted pancreas and kidney come from different donors, the risks of rejection occurring in the pancreas are slightly higher. The average survival of a pancreas transplanted after a live donor kidney transplant is ~8 years. This is less than a pancreas transplanted as part of an SPK transplant (10 to 12 years).

What happens during a SPK transplant?

The operation is carried out under general anesthesia. A large incision (cut) is made in your abdomen. The artery and vein of the pancreas are sewn into your artery and vein in the right-hand side of your lower abdomen. The intestine that comes attached to the pancreas is sewn into your intestine. The pancreas usually starts producing insulin during the transplant procedure.

Through the same cut, the artery and vein of the donated kidney are sewn into your artery and vein in the left hand side of your lower abdomen. The tube carrying urine from the kidney (ureter) is sewn into your bladder. A small soft piece of plastic tubing (a stent) is placed inside the ureter to help it heal.

The operation usually takes between 5-7 hours. Your own kidneys and pancreas are left in place (if they are still there).

Will I feel any pain?

You will feel some pain after the operation, but this will be controlled with pain medication. You will control the amount of painkiller you receive by pushing a button on a patient-controlled analgesia (PCA) pump. The transplant team will treat your pain so you are comfortable to get out of bed, sit in a chair and walk on the first day after surgery.

What happens after a SPK transplant?

For the first 24-48 hours after the transplant, you will be cared for in the intensive care unit. You will have a catheter (flexible tube) to drain urine from your bladder, which is usually left in for 2 days. You will also have tubes (drains) coming out of your abdomen to evaluate the character of the fluid that may accumulate around your pancreas and kidney, and a tube in your neck to give fluids into your veins. You will also have a tube down your nose into your stomach to remove fluid to allow the new pancreas connection to your intestine to heal safely (usually stays in for 2-3 days). You will be allowed to have ice chips but your bowels need to start working again before your diet is slowly advanced. Patients' bowels are "sleepy" after any abdominal surgery so it usually takes several days for you to tolerate liquids and food without being nauseated.

You may have an ultrasound scan to check the blood flow to the kidney and pancreas. Your blood sugars, urine output, and blood tests will be carefully monitored to check the function of the transplanted pancreas and kidney.

Most people are in hospital for between 5-10 days after the transplant. If you need more surgery, or there is a problem with the SPK transplant, you may need to be in hospital for longer.

What do I need to do after I go home?

Before you go home, the pharmacist will go through all of your medications and tell you what they are for and how to take them. The nurse educator and the transplant team will make sure that you are fully prepared to have a successful transition to home after discharge.

How long will my SPK transplant last?

90 out of 100 pancreas transplants and 95 kidney transplants are still working one year after SPK transplantation. On average, pancreas transplants last for between 10 and 12 years and kidney transplants last for 10 to 15 years. For some patients the transplants last much longer and for others they may only last a short time.

Can I have another transplant if it fails?

Most people can have another SPK transplant if this happens. The success rate for second transplants is generally as good as for the first. However, you are likely to wait longer. You will also need to go through the same tests again to make sure you are healthy enough to have another transplant.