

Pancreas Transplantation

Diabetes is a national health problem affecting millions of people. Even though recent advances in glucose monitoring, patient education, nutrition counseling, laser therapy, etc. have contributed to diabetics living longer, healthier lives, diabetics continue to face the threat of serious long-term complications to diabetes such as kidney failure, blindness, heart disease, and peripheral nerve damage.

People who have diabetes of any type have one thing in common, their bodies are limited in their ability to move sugar to their cells, which is simply fuel for the body. If you have Type I Diabetes, this means that you are insulin dependent. This type of diabetes is caused by damage to the pancreas. The pancreas is an organ near your stomach that contains cells called beta cells. Beta cells produce a hormone called insulin that helps cells take in the glucose they need. If the beta cells are destroyed, then no insulin is produced, and without insulin, there is too much glucose in the blood. When glucose builds up in the blood instead of going to the cells to be used for fuel to be converted to energy, the high glucose levels cause damage to your eyes, kidneys, nerves, or heart. People with Type I Diabetes (once known as juvenile-onset diabetes or insulin dependent diabetes mellitus-1DDM) must take daily insulin injections. Type I diabetes accounts for 5 to 10 percent of diabetics.

Type II diabetes (once known as non insulin-dependent diabetes mellitus-2DDM) is a metabolic disorder resulting from the body's inability to make enough, or properly use, insulin. The pancreas usually produces some insulin, but for some reason the body cannot use the insulin effectively. The end result is the same as for Type I diabetes, an unhealthy buildup of glucose in the blood and an inability of the body to make efficient use of its main source of fuel. It is the most common form of the disease. Type II diabetes accounts for 90 to 95% of diabetics. This form of diabetes usually develops in adults over the age of 40 and is most common among adults over age 55.

Pancreas transplantation now offers new hope for people with Type I diabetes. Individuals who have both diabetes and end-stage renal disease may sometimes be best served by a simultaneous pancreas/kidney transplant (SPK). Another option is a pancreas after kidney transplant (PAK). If the patient does not have end-stage renal disease and does not need a kidney transplant, an option is pancreas transplant alone (PTA).

People with Type II diabetes are not candidates for pancreas transplant. Type II diabetics do not benefit from a pancreas transplant because in Type II diabetes, the problem is not that the pancreas does not produce insulin, but that the body does not utilize the insulin properly. (There are some transplant facilities that are performing pancreas transplants on Type II diabetics; however, in the Dallas area, pancreas transplants are not being recommended for Type II diabetics.)

History and Background of Pancreas Transplantation:

The first pancreas transplant that was performed in the United States was at the University of Maryland in 1966. Historically, one of the major impediments to successful pancreas transplantation was the inability to monitor the pancreas for rejection. In the past two decades, significant improvements in the surgical and medical management of pancreas transplants have occurred. Surgical technique improvements have resulted in improved methods for monitoring rejection as well as advancements in immunosuppression.

Transplant Centers for Pancreas Transplants in the Dallas Area:

- Methodist Medical Center (MMC)
- Baylor University Medical Center (BUMC)
- Baylor All Saints Hospital (Ft. Worth)
- Medical City Dallas Hospital (MCDH)

Dallas Nephrology Associates refers patients to all of these facilities, depending on the patient's preference and insurance coverage. We coordinate the medical evaluation for pancreas transplantation at MMC and BUMC and work with the facility coordinators to facilitate the medical evaluation at both MCDH and Baylor All Saints Hospital in Fort Worth.

General Indications/Eligibility Guidelines for Pancreas Transplant:

- Type I Diabetes
- 55 years of age or less for SPK/PAK transplants
- 50 years of age or less for PTA
- Ability to withstand surgery and immunosuppression as assessed by pre-transplant medical evaluation
- Emotional and sociopsychological suitability
- Adequate cardiopulmonary function
- Ability to follow strict post-transplant follow-up regimen
- PAK: Creatinine clearance of 40 cc/minute
- PTA: Creatinine clearance of 60 cc/minute

Contraindications for Pancreas Transplant:

- Over 55 years of age for SPK/PAK transplants
- Over 50 years of age for PTA
- Evidence of significant cardiovascular disease
- Weight greater than 150% of ideal body weight
- Malignant Disease (Patients with “cured” malignant disease must have at least two-year follow-up and longer depending on the malignancy.)
- Active alcohol or other chemical abuse. (Patients with a history of substance abuse must have a minimum of 6-months verifiable abstinence.)
- Advanced liver disease
- HIV positive status
- Refusal to allow the infusion of blood products as needed

GENERAL INFORMATION

What is the pancreas, and where is it located?

The pancreas is a 5 to 6 inch gland located behind the stomach. It extends horizontally between the duodenum and the spleen.

The pancreas has two main functions:

- It produces important substances called hormones. Insulin is one of the hormones produced in the pancreas and released by the pancreas into the bloodstream. Insulin is needed to convert sugar, starches and other foods into energy needed for daily life. By helping to convert sugar to energy, insulin lowers the level of sugar in the blood.
- It produces substances called enzymes, which aid in food digestion.

What happens if the pancreas does not produce insulin?

Diabetes is the result of the failure of the pancreas to produce adequate insulin. With diabetes, high levels of sugar build up in the blood, which can lead to complications, which involve nearly all tissues of the body. Short-term complications of diabetes include high blood sugar (hyperglycemia) and the build up of acids in the blood (ketoacidosis). Long-term complications of diabetes include heart disease, blood vessel disease, kidney disease, blindness, and nerve damage to the legs and feet.

What is the treatment for diabetes?

- Diabetes Type I is most often treated with insulin in the form of daily injections. This treatment helps to lower the level of sugar in the blood, but it does not work as well as a healthy pancreas. It is sometime difficult to achieve appropriate blood sugar levels and blood sugar levels must be regularly monitored so that insulin dosage can be adjusted as needed.
- Pancreas transplantation is another way of treating Type I diabetes. If successful, the pancreas is able to produce steady levels of insulin, thereby preventing high and low levels of sugar in the blood. The transplanted pancreas may help prevent some of the long-term complications associated with diabetes. Further research results will be required to determine this.

Who can receive a pancreas transplant?

- Individuals who have both Types I diabetes and end-stage renal disease may be best served by simultaneous pancreas/kidney transplantation (SPK).
- Patients who have already received a kidney transplant may benefit from a pancreas transplant following the successful kidney transplant. This is called a pancreas after kidney transplant (PAK).
- Individuals who have Type I diabetes and have normally functioning kidneys may be eligible for a pancreas transplant alone (PTA).

Candidates for pancreas transplantation must demonstrate that they are capable and willing to be involved in their own health care. A great deal of the success of the transplant depends on the recipient's ability to take medication as instructed and follow all of the post-transplant recommendations. It is a lifelong commitment.

What are the contraindications for a pancreas transplant?

Most common contraindications for a pancreas transplant:

- Age over 50 for PTA
- Age over 55 for SPK/PAK transplant
- Active infection
- Active malignancy
- Severe liver disease
- Obesity (more than 150% over ideal body weight)
- Non-compliance with medication and treatment recommendations
- Substance abuse or dependency
- Psychiatric disorders
- Significant cardiovascular disease
- Type II diabetes

What is involved in the medical evaluation for a simultaneous pancreas/kidney transplant (SPK)?

- Basic medical evaluation required for kidney transplantation
- Transplant Surgeon consultation

- Transplant Nephrologist consultation
- Cardiology consultation
- Cardiac catheterization
- Additional diagnostic tests may be requested on an individual basis following the evaluation by the Transplant Surgeon and Transplant Nephrologist.

What is involved in the medical evaluation for a pancreas after kidney transplant (PAK)?

- Repeat of the medical evaluation that was required for the kidney transplant
- Transplant Surgeon Consultation
- Transplant Nephrologist Consultation
- Social Worker/Psychologist Consultation
- Cardiology Consultation
- Cardiac catheterization
- Recent Glofil testing

What is involved in the medical evaluation for a pancreas transplant alone (PTA)?

- Basic medical evaluation that would be indicated for a kidney transplant
- Transplant Surgeon Consultation
- Transplant Nephrologist Consultation
- Social Worker/Psychologist Consultation
- Cardiology Consultation
- Adenosine Stress Test
- Echo Stress Test (If abnormal, a cardiac catheterization)
- Glofil testing

What is involved in a cardiac catheterization?

- This procedure will be scheduled by the Cardiologist who will provide instructions and explain what to expect.
- The procedure will be performed in the Cardiac Catheterization Laboratory of the Transplant Center.
- You will be sedated, but will remain awake, able to talk, etc.
- Local anesthetic will be given in the area where the catheter is to be inserted so that you may feel pressure, but no pain.

- Cardiac catheterization is an invasive procedure used to visualize the heart chambers, valves, vessels and coronary arteries.
- The procedure is usually performed on an out-patient basis, but you will be required to lay flat for approximately eight hours following the procedure.
- You will need to have someone drive you to and from the Transplant Center.

Are there complications to cardiac catheterization?

There are potential complications to all invasive type procedures. The Cardiologist will explain these to you prior to the procedure. The general complications include the possibility of blood vessel damage, bleeding, cardiac rhythm abnormalities, and adverse reactions to the contrast media (dye). The contrast media contains iodine, which can produce allergic reactions.

Will my original pancreas and kidney be removed?

The original pancreas is not removed prior to or during surgery. The original kidneys are not routinely removed, but this will be evaluated by the transplant surgeon.

Where are the transplanted organs placed?

During the transplant operation, an incision is made in the center of the lower abdomen. The pancreas is placed on the right side of the abdomen and attached to the bladder or bowel. The kidney will be placed on the left side of the abdomen through the same incision.

How much time does it take to perform the transplant?

- SPK usually takes four to six hours
- PAK
- PTA

How long will I be hospitalized after the transplant?

The average hospital stay for an uncomplicated transplant is about seven to fourteen days.

FINANCIAL INFORMATION

Who pays for a pancreas transplant?

Medicare:

Medicare is a federal health insurance program for people who are disabled, retired, or have permanent kidney failure and who have paid into the Social Security system within the last ten years. Dependents may be eligible if a spouse or parent has paid into Social Security.

If you become entitled to Medicare because of permanent kidney failure, your Medicare coverage generally starts at one of three times.

- The fourth month after first chronic hemodialysis treatment
- The first month of dialysis if you participate in a self dialysis training program and are expected to complete the training and self-dialyze thereafter
- The month you are admitted to an approved hospital for a kidney transplant

Medicare hospital insurance (Part A) covers most but not all of the services you receive as an in-patient. You will be responsible for a Medicare deductible for each 60-day “benefit period” when you are admitted to a hospital. This will be needed when you enter the hospital for transplant unless you have been in the hospital sometime within that 60-day benefit period. If you also have private insurance or Medicaid, the deductible will be billed to those sources.

Medicare medical insurance (Part B) pays 80% of most outpatient services and clinic visits. To obtain additional information regarding Medicare benefits, you may contact the Social Security office at (800) 772-1213 and request a copy of the booklet “Medicare Coverage of Kidney Dialysis and Kidney Transplant Services—A Supplement to your Medicare Handbook”. You can also review information about Medicare at www.Medicare.gov.

If you have end-stage renal disease, and need a pancreas transplant, Medicare now covers pancreas transplants (This became effective July 1, 1999.):

- When it is done at the same time you get a kidney transplant (SPK)
- When the pancreas transplant follows a kidney transplant (PTA)

(If you are a candidate for a pancreas transplant alone (PTA) because of Type I Diabetes and do not have end-stage renal disease, Medicare will **not** pay for a pancreas transplant.)

Private insurance:

Most insurance companies provide benefits for pancreas transplants. A pancreas transplant alone is more likely to be denied by your insurance company than a combined pancreas/kidney transplant or a pancreas transplant following a kidney transplant.

Policies vary on how they pay for transplant. Approval from your insurance company for the transplant is always necessary. It is important that you review your policy carefully for a clear understanding of your transplant benefits. The Pre-Transplant Department can give you additional information about this.

Coordination of Benefits with Employer Group Health Plans:

When you are eligible for Medicare because of kidney failure, there is a period of time when your employer group health plan will pay first on your healthcare bills and Medicare will pay as a secondary payer. This period of time is called a 30-month coordination period. At the end of the 30-month coordination period, Medicare will become your primary payer and will pay first for all Medicare covered services. Your employer group health plan coverage then becomes a secondary payer and may pay for services not covered by Medicare.

Medicaid:

Medicaid is a state health insurance program for people who are disabled or retired and have limited income and resources. If you are eligible for Medicaid, this program will pay for your transplant.

(If you are a candidate for a pancreas transplant alone (PTA) because of Type I Diabetes and do not have end-stage renal disease, Medicaid will **not** pay for a pancreas transplant.)

If I am from out of town, what additional expenses will I have after I leave the hospital?

It is recommended to transplant recipients who live outside the Dallas area that they remain in town for two to six weeks following surgery so that they can be closely followed at DTI. Expenses that you will need to plan for during that time include lodging, transportation, and food. Some private insurance companies will help with these expenses. Medicare and Medicaid will not. If you have relatives or friends in the Dallas area, you might consider staying with them for a few weeks to assist you with your expenses.

How long is Medicare in effect after my transplant?

Medicare coverage ends 36 months after the month of a transplant. Medicare will continue past the 36 months only as long as you are receiving Social Security Disability benefits or are 65 years of age or over.

How long is Texas Kidney Health Care in effect after my transplant?

Under the current Texas Department of Health policy, Texas Kidney Health Care is a lifetime benefit for people who are either on dialysis or have received a transplant. To qualify for this benefit, you must be a resident of Texas and have a household income of less than \$60,000 annually.

If I no longer have Medicare or other insurance, how will I pay for services when I come to the clinic?

Hopefully, the transplant will allow the recipient to return to a productive lifestyle and employer insurance will be available. If not, patients will be personally responsible for their statements from DTI. Arrangements may be made for a special payment schedule.

Is there a member of the transplant team who can help me find financial assistance if I need it?

A social worker is available to provide information regarding resources for financial assistance as well as other concerns that accompany the adjustment to having had a transplant.

Who do I call if I have questions about the bills that I receive from Dallas Nephrology Associates/DTI?

If you ever have questions about your billing statement you may contact the Billing Representative at DTI or call the Billing Department at (214) 358-2300. It is important that you notify us of changes in your insurance so we can avoid billing problems.