
Your Guide to **Kidney Transplantation**

Introduction

What is kidney transplantation?

Kidney transplantation is the treatment of choice for individuals with end-stage renal disease (ESRD). Compared to dialysis, ESRD patients tend to live longer with a better quality of life. The transplant may be performed from either a deceased or living donor, although it should be noted that patients who receive a living donor transplant tend to get transplanted faster and have better outcomes. Also, patients with living donors may be candidates for a pre-emptive transplant (transplantation before the need to start dialysis).

The operation is performed through an incision on either the right or left side of your lower abdomen. Patients who receive a living donor transplant typically stay in the hospital for 2–3 days. Those who receive a deceased donor transplant have greater variability in their stay, depending on how quickly the kidney works (usually 3–5 days).

The history of kidney transplantation

The first successful kidney transplant was performed in the mid-1950s between two identical twin brothers. In 1963, the first anti-rejection drug was introduced to help fight the body's natural impulse to reject the donor kidney. Over the past 20 years, the science behind kidney transplantation has progressed rapidly. Due to advances in research, the donated kidney may come from a living donor or from someone who has died. Approximately 43 percent of the 15,000 kidney transplants performed each year are from living donors. Due to improved transplantation procedures and the use of living donors, the success rate in the United States continues to improve. The average success rates at Yale New Haven Transplantation Center exceed the national averages in both patient and graft survival, making kidney transplant an excellent choice for many patients suffering from renal disease.

Why you may need a kidney transplant

The kidneys are two bean-shaped organs located on either side of the spine behind the upper abdominal organs. About one fourth of the blood volume pumped during each heartbeat goes to the kidneys. This adds up to about 160 quarts of blood every 24 hours. From this, about 1.5 quarts of urine are eliminated through the bladder. The kidneys filter the blood using tiny components called nephrons and glomeruli.

The kidneys perform several critical functions, including:

- Filtering waste products from blood that can become toxic if left to accumulate
- Removing excess fluid that can accumulate around the heart and lungs
- Returning nutrients to the bloodstream
- Producing a substance that helps regulate blood pressure
- Producing a substance necessary for red blood cell creation, thus preventing anemia

The failing kidney

Some of the most common causes of kidney failure include:

- Hypertension (high blood pressure)
- Diabetes mellitus

- Kidney stones
- Inherited kidney disease
- Inflammatory disease of the nephrons and glomeruli
- Side effects of drug therapy for other diseases

When your kidneys fail to remove waste products from the blood, a condition known as uremia develops. Because you normally have more kidney functioning ability than you need, most people do not develop symptoms of kidney failure until more than 80 percent of kidney function is lost. Once this occurs, patients will usually need either dialysis or kidney transplantation. Compared to dialysis, patients with transplants tend to live longer and report a much better quality of life.

What are the advantages of a transplant?

- Kidney transplantation has been shown to add years to a recipient's life.
- The recipient may lead a normal life including work and school activities.
- Dialysis is no longer needed once the new kidney is functional.
- Diet is less restrictive than that of a person on dialysis.
- Energy level is improved.

What are the risks and potential complications of transplant surgery?

The health risks associated with kidney transplant include those associated directly with the surgery itself, rejection of the donor organ, and side effects of taking medications needed to prevent your body from rejecting the donated kidney.

For most patients, kidney transplantation is the treatment of choice. However, because of the risks and commitment following transplant, it may not be for everyone. Talk through your decision with your friends, family and other trusted advisors.

Some possible transplant-related medical and lifestyle complications to consider:

- Post-operative bleeding that may require blood transfusion and/or a return to the operating room for re-operation (2% chance)
- The newly transplanted kidney has a delay in its function which can sometimes require dialysis until resolved (40% chance)
- The new kidney does not function. A second transplant may then be required (less than 1% chance)
- Rejection of the new organ requiring multiple medications (8% chance)
- Complications related to the ureter, including but not limited to urinary leak and urinary constriction (4% chance)
- Complications related to the placement and removal of the urethral stent (5% chance)
- Increased risk of infection and certain cancers due to the anti-rejection medications which depress your immune system (1% chance)
- An infection or cancer that can be transmitted with the donated kidney (less than 0.01% chance)
- Pneumonia (2% chance)
- Blood clots (less than 1% chance)

- Heart attack and stroke (1% chance)
- Death (less than 1% chance)
- Psychosocial risks like depression, anxiety, problems with body image, etc.
- Financial problems (2–8% chance)

Anti-rejection medication side effects

After a kidney transplant, you will take medications to help prevent your body from rejecting the donor kidney. These medications can cause a variety of side effects, including:

- Acne
- Diabetes
- Excessive hair growth or hair loss
- High blood pressure
- High cholesterol
- Increased risk of cancer, particularly skin cancer and lymphoma
- Infection
- Puffiness (edema)
- Weight gain

Who is a candidate for kidney transplant?

For certain people with kidney failure, a kidney transplant may be riskier than dialysis. Conditions that may prevent you from being eligible for a kidney transplant include:

- Advanced age
- Severe heart disease
- Active or recently treated cancer
- Untreated or undertreated mental illness
- Dementia
- Alcohol or drug abuse
- Lack of a support network, including transportation
- Lack of adequate medical insurance
- Unstable living situation
- Any other factor that could affect your ability to safely undergo the procedure and take the medications needed to prevent organ rejection

Alternatives to transplant

Medical therapy, dialysis or no treatment are alternatives to transplantation. If you choose medical therapy, your doctor will treat your symptoms of renal failure. Medical therapy will not replace the function of your kidneys. If your kidneys do not work correctly, waste products in your blood may build up. This could ultimately lead to death.

If you choose dialysis, this therapy can include hemodialysis (a machine removes blood from your body and cleans it) or peritoneal dialysis (placing a special solution into your abdominal cavity that cleans the blood in the intestines). Dialysis will prolong your life but there are risks and complications with this treatment. Please speak with one of your transplant team members about your options for care. They can help you determine your best treatment option.

Your transplant team

Contact information

Yale New Haven Transplantation Center

Routine transplant-related calls are accepted between 8:30 am – 5 pm EST.

Calls after 5 pm should only be transplant-related *emergency* calls.

- Main number: 203-785-2565

Calls received during office hours will be reviewed by a nurse coordinator and returned within 24 hours. All non-emergency business calls, such as medicine refills or appointment changes, will need to be placed during regular office hours.

Transplant office business hours:

- Monday – Friday: 8:30 am – 5 pm
- Weekends and holidays: Closed

Transplant team members

A team of doctors trained in kidney disease (nephrologists), abdominal transplant surgery, infectious disease management and other specialties will focus on your needs and your family's. Surgeons, doctors, transplant nurses, pharmacists, social workers, dietitians and others work together to manage every aspect of your kidney transplant, from planning through post-surgical care.

- **Transplant surgeon:** Assesses your appropriateness for transplant based on information obtained during your evaluation. The surgeon also discusses with you the significance of undertaking kidney transplant, details about the transplant procedure and the risks and possible complications associated with surgery.
- **Transplant nephrologist:** Meets with you to discuss many of the disease processes that have contributed to your kidney failure. The nephrologist reviews your medical history to determine medical tests that should be performed in addition to the standard tests required during the evaluation.
- **Transplant nurse coordinator:** Provides education about the transplant evaluation process, the transplant list and patient responsibilities before and after transplant. The coordinator is your advocate throughout the process and works to make sure your needs are met. Meeting with the coordinator is a chance for you to ask questions and become fully informed about the kidney transplant process.
- **Social worker:** Meets with you to discuss the nonmedical parts of your life, such as your support system; your ability to cope with the stress of transplantation; your ability to follow your medical team's recommendations, both before and after transplantation; your living and financial situations; and any drug and alcohol use. The goal of this meeting is to help you prepare for a successful transplant.
- **Financial coordinator:** Discusses the costs of the transplant and medications required after the surgery. The financial coordinator will help you understand your insurance coverage and what costs may not be covered by insurance.
- **Dietitian:** Provides education in a group setting on healthy eating for kidney disease. The dietitian completes nutritional screening for all transplant candidates and may complete an individualized nutrition assessment as needed.