



# BEFORE, DURING AND AFTER KIDNEY TRANSPLANTATION



# TABLE OF CONTENTS

## BEFORE TRANSPLANT

Understanding Kidney Disease .....	page 2
Considering a Kidney Transplant.....	page 3
Types of Kidney Transplants.....	pages 4-6
Getting a Medical Evaluation.....	page 7

## DURING TRANSPLANT

Waiting Period .....	page 9
The Surgical Process.....	page 10
Your Diseased Kidneys .....	page 11
The Role of the New Kidney .....	page 11

## AFTER TRANSPLANT & TRANSPLANT MANAGEMENT

Recovery After a Kidney Transplant .....	page 13
Role of the Immune System.....	page 14
Rejection.....	page 15
Chronic Rejection.....	page 15
Signs and Symptoms of Rejection.....	page 16
Monitoring Transplant Success.....	page 17
Monitoring for Infection .....	page 18
Tips to Maintain a Healthy Kidney .....	page 19



# BEFORE TRANSPLANT

Understanding Kidney Disease

Considering a Kidney Transplant

Types of Kidney Transplants

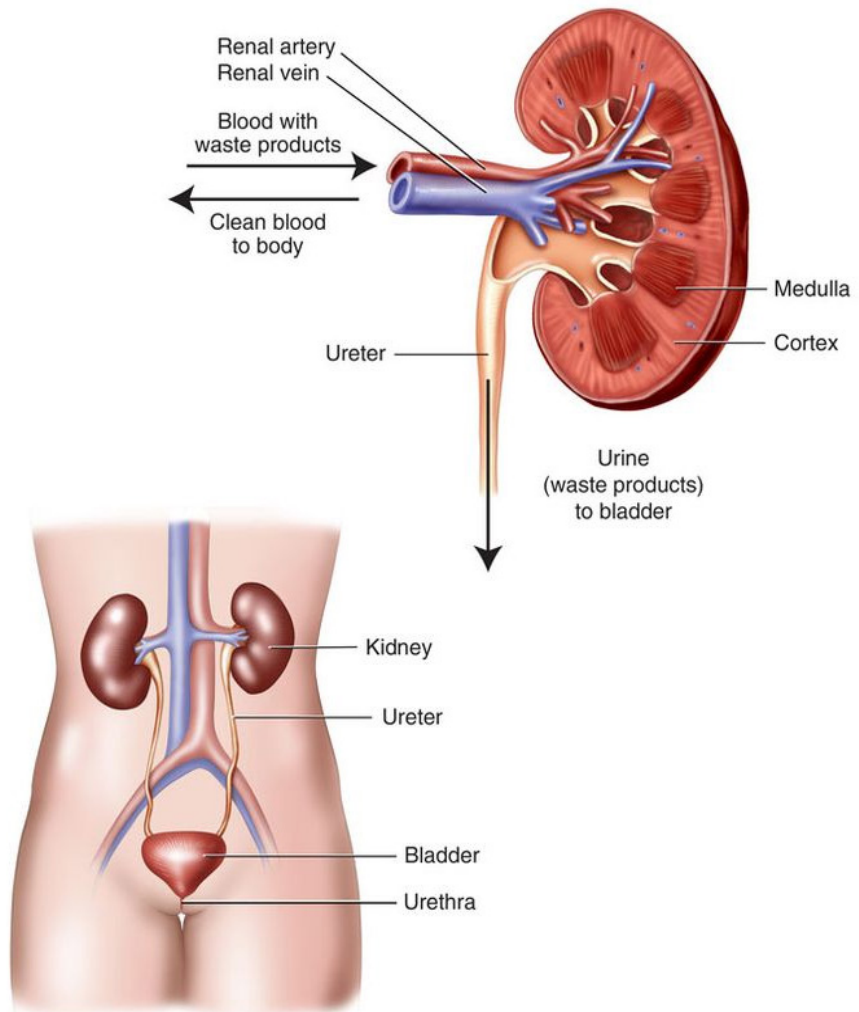
Getting a Medical Evaluation

# Understanding Kidney Disease

The main function of your kidneys is to clean your blood by removing excess fluid, minerals and waste.

Over time, your kidneys may be damaged, your body may retain fluid and waste that can lead to symptoms like tiring more easily and swollen feet and ankles.

When the damage to your kidneys progresses, it may lead to kidney failure.



There are treatments for kidney failure, which can do the work your kidneys would typically do:

- **Kidney transplant**-surgery to place a kidney from a donor into your body to take over the work of your kidneys
- **Peritoneal dialysis**-uses the lining of your abdomen to remove waste products from your blood
- **Hemodialysis**-uses a machine to remove waste products from your blood

## Considering a Kidney Transplant

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A kidney transplant may be an option if you have kidney failure and your kidneys cannot work.

Getting a new kidney from another person can have certain benefits:

- The new kidney can take over the work that cannot be done by your kidneys
- You may have a better quality of life and more energy
- You may be able to do some activities more easily, such as traveling and returning to work
- You may be allowed a less restricted diet

However a kidney transplant also comes with some risks:

- The kidney disease that led to getting a transplant may return in the new kidney
- The new kidney may fail
- Your body may reject, and not accept the new kidney. This can happen at any point in the transplant course

You will take medicines that prevent your body from rejecting the new kidney. Talk to your health care professional about these medicines.

# The Types of Kidney Transplants

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Your new kidney can be from one of these types of donors:

- Living donor (related or unrelated)
- Deceased donor

The criteria used to classify deceased donors include:

- High blood pressure
- Age, height, weight
- Ethnicity
- Diabetes
- Cause of death
- Serum Creatinine
- Hepatitis C virus status
- Donation after Circulatory Death (DCD) status

## Kidney Donor Profile Index (KDPI)

The KDPI is a scoring system of 0 to 100% that summarizes how long a kidney is likely to function after transplant. Every deceased donor kidney will have a KDPI score.

- If the score is low, the kidney is expected to work for a longer time; while if the score is high, the kidney is expected to work for a shorter time.
- When listed, you will be able to receive kidneys with KDPI scores between 0-85% automatically
- You have the choice to accept or not accept a KDPI kidney of 86% or higher. Some people choose to accept a KDPI kidney with a score of 86% or higher because the waiting time may be reduced
- Your doctor will go over this in more detail at your appointment and you will sign a consent form accepting or denying a KDPI kidney of 86% or higher.

## The Types of Kidney Transplants (continued)

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### PHS High Risk Kidney

- With the availability of Anti-hepatitis C therapy, you may consent to receive a kidney from a donor infected with the Hepatitis C virus, regardless of your Hepatitis C status
- The benefit of accepting a Hepatitis C positive donor may include:
  - Reduced waiting time
  - Excellent treatment options for Hepatitis C with cure rates of greater than 95% even after transplant
  - The five year survival rate is the same as if you received a donor from someone who was not infected with Hepatitis C
  - There is no difference in the survival of your new kidney or rejection in those who get their kidneys from someone with Hepatitis C or someone without
- Your doctor will go over this in more detail at your appointment and you will have the option to opt in or out of this process

### B Blood Type-New Kidney Allocation

- In December of 2014 the United Network for Organ Sharing (UNOS) and the Organ Procurement and Transplantation Network (OPTN) began using a new Kidney Allocation System.
- The Kidney Allocation System provides new options for kidney eligibility for your blood type (B). There are some donors with different blood types who may now be able to donate a kidney to you. This type of kidney donation is called A2/A2B donation.
- To see if you can qualify for this type of kidney donor, we will need to do additional blood tests.
- These blood tests will be done every 3 months after the initial blood test to make sure that your anti-A antibodies in your blood remains low before transplantation to reduce the risk of rejection.
- Your doctor will go over this in more detail at your appointment and you will have the option to opt in or out of this process

## The Types of Kidney Transplants (continued)

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### Kidney Paired Donation (KPD)/Kidney Swap

KPD and kidney swap are used when you have a living donor, but your blood types do not match. Some people may think that is the end of the road, but if you and your donor agree you could participate in a swap or a Kidney Paired Donation with another transplant center.

- The KPD matches donors and candidates with other pairs who do not match. Your transplant team enters your medical information into a national database, managed by the Organ Procurement and Transplantation Network (OPTN). Pairs are matched twice a week, then hospitals are contacted to perform the transplants.
- Benefits of participating in the KPD include:
  - The recipient not having to wait as long for a transplant
  - Helping other patients and families be transplanted
- Since this program involves a network of hospitals, your transplant can happen at your hospital and the donor kidneys can be shipped. This can all be discussed with your transplant team and family.
- Kidney Swap is the same concept, but you are being matched with unmatched pairs at UI Health.
- If you and your donor agree to participate in the Kidney Swap we will enter you into our UI Health database and see if there is another unmatched pair that would work
- The benefit of the KPD over the Swap program is a greater pool of patients. You can opt in for both to give yourself the most options.



## Getting a Medical Evaluation

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To get ready for a kidney transplant, you will need to have:

- A physical exam
- A social work evaluation
- A meeting with your transplant team to discuss life after your kidney transplant and coping skills
- Blood tests for blood type, antibodies, kidney function, etc
- Heart function
- Abdominal imaging
- Bariatric evaluation if obese
- Other tests may be done depending on health conditions

You will also meet your transplant team, which can include the following members:

- Kidney transplant nephrologist. This doctor will review your tests prior to listing approval, monitor your status with the team while you are on the waitlist and will be your physician after transplant.
- Transplant surgeon
- Transplant nurse
- Transplant financial coordinator
- Transplant social worker
- Transplant dietitian
- Transplant pharmacist



# DURING TRANSPLANT

Waiting Period

The Surgical Process

Your Diseased Kidneys

The Role of the New Kidney

## Waiting Period

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You are required to come in annually for update visits with the whole transplant team. The purpose of these visits is to make sure that you are still healthy enough for transplant. If you miss these visits, you may be deemed ineligible for transplant.

If your medical evaluation shows that you are a good candidate for a transplant, you will be placed on a waiting list for a kidney transplant.

How long you stay on the waiting list depends mainly on how well you match the donor of a new kidney.

You may wait several years (2 or more) before a new kidney is found to be a match for you. Waiting times may be shorter if a living donor is identified, and the surgery can be scheduled in advance.

When a new kidney is found, the transplant team will check your test results to make sure that your blood type and genetic markers are a match with the donor.

Then, a recent sample of your blood will be mixed with blood from the potential donor. Testing this mixture will help your health care professional learn if your body should be able to accept the new kidney.

For more information about the wait list go to [UNOS.org](http://UNOS.org)

## The Surgical Process

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Kidney transplant surgery lasts about 3-4 hours.

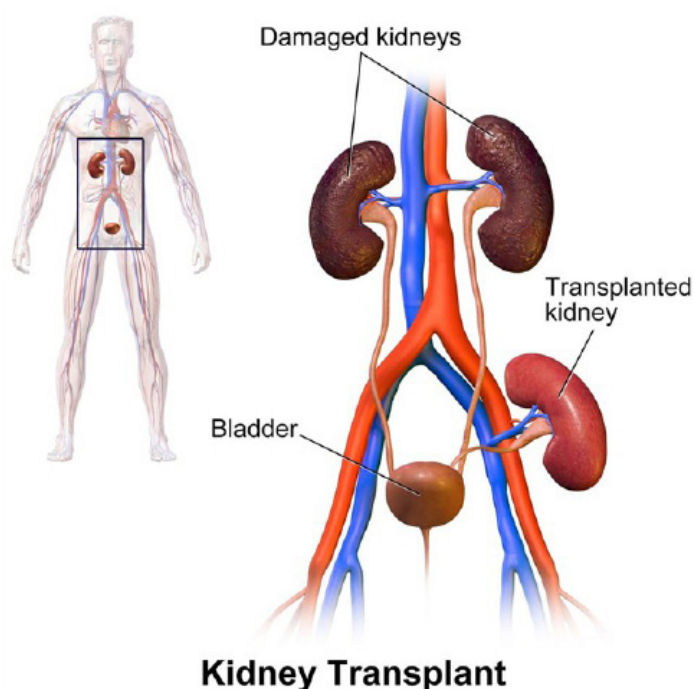
First, you get medication that enables you to sleep and have no pain during surgery.

Next, the surgeon makes a small opening in your body and puts your new kidney into your abdomen.

Then, the blood vessels and ureter (a tube that carries urine from the kidneys to the bladder) are attached:

- A small, soft tube called a stent may be put into the transplanted ureter so that urine can flow from your kidney to your bladder
- The stent in your ureter will be taken out when the connection between ureter and bladder heals, usually about one month after transplant.

After the blood vessels and ureter are attached in the body, the surgeon closes the surgical incision



## Your Diseased Kidneys

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During the surgery for a kidney transplant, your kidneys are not usually removed.

Your surgeon will decide whether to remove your kidneys and whether to remove them before, during or after your transplant surgery.

Your surgeon will discuss those options with you.

## The Role of the New Kidney

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After being placed in your body during surgery, your new kidney should be able to do the work that your own diseased kidneys were not able to do.

The main function of your new kidney will be to remove waste products from your blood.

As soon as blood starts to pass through the new kidney, waste products may start to be removed from your blood and urine may begin to flow.

It is possible that your new kidney may not start to work right after the surgery. If that happens:

- You may need dialysis for a time to help remove waste products from your blood
- Your new kidney may begin to work in a few to several weeks



# AFTER TRANSPLANT & TRANSPLANT MANAGEMENT

Recovery After a Kidney Transplant

Role of the Immune System

Rejection

Chronic Rejection

Signs and Symptoms of Rejection

Monitoring Transplant Success

Monitoring for Infection

Tips to Maintain a Healthy Kidney

## Recovery After a Kidney Transplant

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Recovery from your kidney transplant starts in the hospital. How long you stay in the hospital depends on factors including:

- How soon your new kidney starts to work
- How your body responds to your new kidney
- Your general health
- Other factors

Your transplant team will watch you closely by monitoring:

- Function of your new kidney
- Surgical site
- Blood pressure
- Blood sugar level



## Role of the Immune System

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Your immune system helps your body defend against bacteria, viruses or fungus that may cause an infection.

A serious condition called “rejection” may occur if your immune system tries to defend against your new kidney.

To reduce the activity of your immune system and prevent rejection of your new kidney, you will take medicines called “immunosuppressants” (im-you-no-sue-pres-ants) for the rest of your life.

Because the medicines that prevent rejection reduce the activity of your immune system, you will have a higher risk of getting an infection.

If you have signs and symptoms of infection, your health care professional will prescribe medicines that work against bacteria, viruses and fungus.

### To Help Prevent You From Getting an Infection

You may take some medications to prevent infections

Your health care professional will monitor you closely for any signs and symptoms of infection



# Rejection

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Transplant rejection occurs when the transplanted organ(s) is rejected by the recipients immune system, which results in damage to the transplanted organ.

Rejection may occur at any time if you stop taking your immunosuppressant medicines that prevent rejection (i.e. tacrolimus, Prograf, Astagraf, Envarsus, everclimus, Cellcept, Myfortic, prednisone, etc..)

If your health care professional thinks that you may have rejection, you may require a biopsy (a very tiny piece of your transplanted kidney will be removed and examined).

If rejection happens, you may get increased doses of your medication that prevent rejection, and in this case, will help treat the rejection. You may be admitted to the hospital for further rejection treatment.

**Take home message: It is important to take your medications as directed to help prevent rejection. If you are not tolerating your medications, please let us know right away so we can work with you to adjust your medication regimen. If you run out of your medication, please call us immediately.**

## Chronic Rejection

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Rejection is called “chronic” if it damages your kidney slowly over time.

Although the cause of chronic rejection is not known, it may be affected by missing or stopping your immunosuppressant medicines that prevent rejection.

It is possible that you may not have any symptoms of chronic rejection.

If your health care professional thinks that you have chronic rejection after monitoring your blood tests, you may require a biopsy (a very tiny piece of your new kidney will be removed and examined).

## Signs and Symptoms of Rejection

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Many people do not have any signs or symptoms of rejection

Some people may have certain warning signs and symptoms of rejection, including:

- Change in blood and urine tests that monitor kidney function
- A decrease in the amount of urine
- General feeling of discomfort or lack of well-being
- Sudden fluid weight gain; 2-4 pounds in 24 hours is significant
- Fever
- New or different pain over the transplant site

Call your health care professional if you have any of these warning signs and symptoms of rejection

## Monitoring Transplant Success

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Right after you get your new kidney, you will have frequent check-ups with your transplant team

As time goes on, the check-ups will become less frequent

To learn how well your new kidney is working, your health care professional will monitor tests of your blood and urine, including:

- **Blood count**-including white blood cells, red blood cells and platelets (which form clots)
- **Blood urea nitrogen (BUN)**-a waste product; its level in your blood rises if your kidneys are not working well
- **Creatinine**-another waste product; its level in your blood rises if your kidneys are not working well
- **Electrolytes**-common minerals such as sodium, potassium and magnesium that are in your blood
- **Drug levels of your anti-rejection medications**

## Monitoring for Infection

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Because you are taking medications that reduce the activity of your immune system, you have a higher risk for getting an infection (see “Role of Immune System”)

You may develop these symptoms if you have an infection:

- Fever
- Fatigue
- General feelings of illness
- An unusual pain in your body

The most common types of infections include:

- **Urinary tract infection**-which leads to symptoms including fever, chills, a burning feeling when you urinate, back pain, and urine that has a bad smell
- **Pneumonia**-an infection in your lungs that leads to symptoms including shortness of breath, coughing, fever and a feeling of being sick
- **Cytomegalovirus (CMV)**- a virus that may become active when you are taking medicines that reduce the activity of your immune system; can lead to symptoms including coughing, diarrhea, fatigue, and fever
- **BK virus**-a virus that may cause your new kidney to fail

Call the transplant clinic if you think you have any symptoms of infection

## Tips to Maintain a Healthy Kidney

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Follow the recommendations of your health care professional, including watching for any signs and symptoms of rejection or infection

After your kidney transplant, remember to also monitor any other health conditions:

- If you have high blood pressure, check your blood pressure regularly
- If you have diabetes, check your blood sugar level regularly

Take your medicines exactly as prescribed; do not skip or change doses unless your health care professional says that it's okay

Talk to your health care professional about all aspects of your daily health care regimen, including:

- **Over-the-counter (OTC) medications**-some OTC pain medicines, such as ibuprofen, can cause kidney damage
- **Herbals, supplements, and grapefruit juice**-some can interfere with your medicines
- Your **fluid intake**

Thank you for taking the time to carefully read the information in this guide. Please contact our office or nurse coordinator with any questions you might have about living kidney donation.

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# Transplant First Appointment Encounter Sheet

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Welcome to your first appointment. You will meet with many members of the transplant team today. To better help you remember those team members, please place this sheet on the counter during your visit and each team member will sign their name and provide contact information, if needed.

**Name**

**Phone**

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Transplant Nephrologist  
(kidney doctor)

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Transplant Nurse Coordinator

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Financial Coordinator

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Social Worker

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Pharmacist

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Dietitian

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