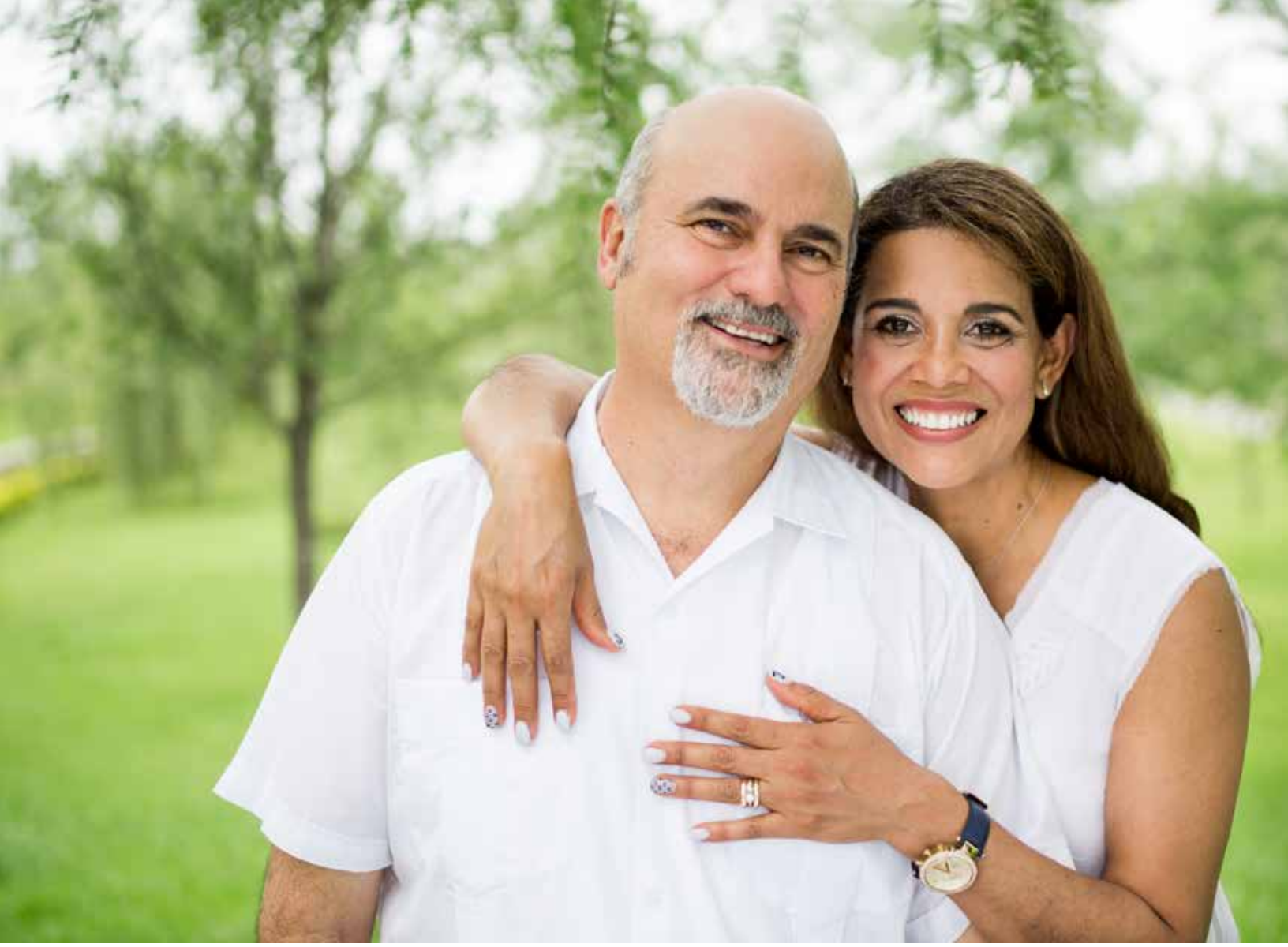
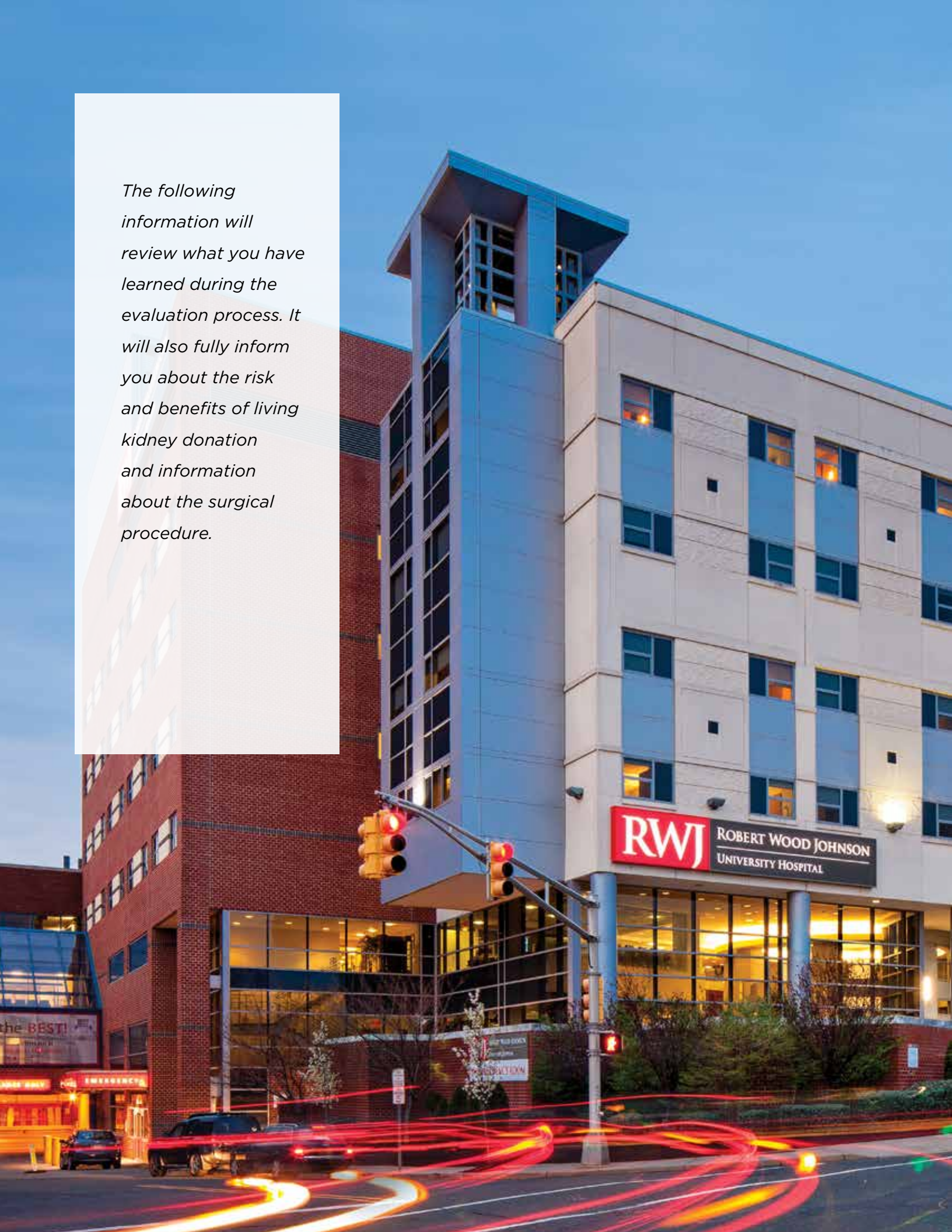


Living Kidney Donor Education Program

Medical and Surgical Procedure

Robert Wood Johnson University Hospital | RWJBarnabas HEALTH

The following information will review what you have learned during the evaluation process. It will also fully inform you about the risk and benefits of living kidney donation and information about the surgical procedure.



Blood Group and Tissue Compatibility Results

The process of compatibility testing (the mixing of the donor and recipient's blood) has been reviewed with you by this time. The physician has discussed any high risk circumstances of your tissue compatibility results if they exist.

Donor Medical Testing Results

The results of your available medical tests have been reviewed with you by this time. You have been informed if abnormal results need to be retested or if any further testing is required.

The Donation Surgical Procedure

1. General Overview

The process of removing a kidney for donation is called a donor nephrectomy. The surgical procedure is minimally invasive and is performed laparoscopically. Two or three small incisions are made in the abdomen which is then filled with air. The surgeon then inserts instruments into these incisions. These instruments have cameras and the necessary surgical instruments on the ends to do the surgery. A 3 to 4 inch incision is made in your lower abdomen to remove the kidney. This procedure will have been outlined, step-by-step by the transplant physician by this time.

Approximately one week prior to surgery, the donor, recipient, and family members will attend a Pre-surgical Meeting. At this meeting the surgical procedure for both the donor and recipient will be reviewed again by drawing pictures and utilizing models.

2. Potential Risks and Complications

Living donation is associated with medical and surgical risks that may be temporary or permanent. These risks include, but are not limited, to the following:

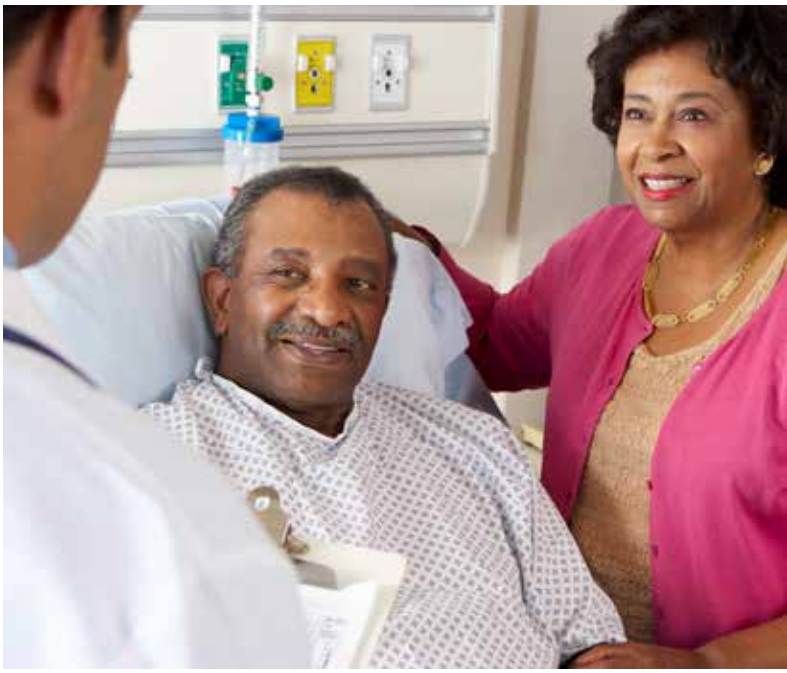
a. Potential risks associated with medical screening may include
   - Contrast materials used in abdominal imaging may cause mild to severe allergic reaction
   - Both risks and benefits may result from medical testing. The evaluation may lead to the early discovery of infections, malignancies, unfavorable genetic findings, or other serious medical conditions previously unknown to the donor and others
   - By law positive test results for certain infections must be reported to government health agencies
   - HLA testing could reveal the true identity of family relationships, and create issues that the donor or other family members may not wish exposed
   - Testing may bring unexpected results for the donor and medical team as well as the need for additional testing and treatments that may be the financial responsibility of the donor or donor's insurance

b. Kidney function post-donation:
   - Every kidney donor will experience a decrease in kidney function compared to pre-donation. The amount will depend upon the potential donor's age and history. On average, donors will have a 25-35% permanent loss of kidney function after donation.
   - Kidney donors live at least as long as members of the general population with the same demographic profile (such as age, sex, and race). Risk of kidney failure for living kidney donors may exceed that of healthy non-donors with medical characteristics similar to living kidney donors.

- If a donor develops chronic kidney disease, the progression to kidney failure in the donor may be quicker than in people with two kidneys. A donor may also be at higher risk for chronic kidney disease if they suffer damage to the remaining kidney.

c. Potential surgical complications may be temporary or permanent and can include, but are not limited:
   - Acute kidney failure and need for dialysis or kidney transplant in the immediate post-operative period (extremely rare).
   - Scars, hernia, nerve injury, pain, fatigue and other consequences of any surgical procedure. Conversion from laparoscopic to open kidney removal
   - Bleeding requiring re-operation
   - Abdominal or bowel symptoms such as bloating and nausea. A rare complication is the development of bowel obstruction
   - Infection anywhere but mainly to the lung in the form of pneumonia, wound infection and urinary tract infection
   - Numbness around the thigh, around the wound and/or inner part of the leg lasting for a significant time (recovery from this numbness is quite common but occasionally this numbness can be permanent)
   - Perforation of the intestine-rare
   - Injury to the spleen-rare
   - Lung puncture called pneumothorax - extremely rare
   - Formation of a blood clot in the legs and possibly lung (pulmonary embolism) - extremely rare
   - Acute testicular pain in males - extremely rare
   - Death - extremely rare

d. Potential rare long term complications (that would require further medical evaluation):
   - High blood pressure
   - Presence of protein in the urine



   - Kidney failure or Chronic Kidney Disease (CKD) progressing to End-Stage Renal Disease (ESRD). This would mean that dialysis or a kidney transplant is required. Should this occur, donors are given priority on the UNOS waitlist for transplant.
   - Unexpected complications related to the actual operation

e. Pregnancy post donation:
   - For female living donors, the risks of preeclampsia or gestational hypertension are increased in pregnancies after donation

Obesity and high blood pressure are known to impact your health and overall survival. Therefore, donors are always instructed on maintaining annual health care follow-up and a healthy lifestyle. In the event you have a history of obesity and/or high blood pressure, the long term risks will be discussed with you by the transplant physician.

3. Immediate Recovery and Post-Operative Course

a. Donors typically spend several hours in the Recovery Room also known as the PACU (Post Anesthesia Recovery Unit) and then are transferred to the transplant inpatient unit.

b. The donor's pain is managed immediately in the PACU and during the entire hospital stay. Conversion from IV or injectable pain medicine to an oral pain medication will occur by the 1st day after your surgery. Because pain is a very subjective symptom, some patients need small amounts of medication while other require larger dosages. You will be monitored closely by the physicians and the nursing staff but it is also important to inform your nurse if you are in pain. In addition, some patients experience abdominal bloating for two to five days and sometimes there is discomfort in the shoulder area. Patients typically described these discomforts as tolerable.

c. Donors are given intravenous fluids for hydration. It is not necessary to get out of bed in the first few hours after surgery to urinate since there is a catheter that drains the urine. The day after surgery the urine catheter will be removed which takes a minute to remove and is essentially painless.

d. The day after surgery you will be assisted out of bed into a chair and then later in the day assisted to walk with the help of staff or your family. You will slowly resume eating and drinking and it may take a day or so to pass gas or have a bowel movement.

e. It is important to take deep breaths in order to avoid lung infections after the operation. A spirometer will be given to you to assist in taking deep breaths. You will be instructed by a nurse or respiratory therapist on how to use it properly.

f. Donors can expect to be discharged home on the 1st or 2nd day after surgery provided there are no unforeseen complications.

g. Restrictions while recovering at home include, but are not limited to, no heavy lifting (over 25 pounds) during the first 3 weeks. Donors usually return to work in 2 to 3 weeks and resume regular activities within 3 to 4 weeks of surgery. Each situation is individual and your physician will inform you when it is appropriate to return to work.

4. No Experimental Procedures

No aspect of your evaluation or surgical procedure is considered experimental.

5. Surgery Postponement or Cancellation

There are several potential reasons that a scheduled transplant surgery may be postponed or cancelled. They may include:

a. Positive final crossmatch;

b. Donor or recipient becomes sick or unable to undergo surgery; and/or

c. Donor or recipient has abnormal test results during Pre-Admission testing

Medical Care Follow up

1. Immediate Follow Up

You will be given an appointment for blood work and an examination by the transplant surgeon within 7 to 10 days after your surgery. It is very important that you keep these appointments. At this appointment you will be asked to sign a release so that your evaluation test results can be sent to your primary care physician along with a letter explaining that you donated a kidney and the post donation follow up required.

2. Required Donor Follow Up

Under the requirements of the United Network for Organ Sharing (UNOS), the Renal and Pancreas Transplant Division of the Robert Wood Johnson University Hospital will follow your progress after donation at three pre-determined intervals: six-months, one-year, two-years.

A member of the Transplant Team will contact you prior to each pre-determined interval as a reminder to schedule an appointment with your physician or at our Transplant Center for a basic blood test, urine test, blood pressure reading, and weight.

The costs for this post-donation follow-up care will be submitted to your own insurance policy. If an abnormality is found, we will discuss it with you at that time, but it is your responsibility to follow up with your medical doctor to evaluate the situation further.

For donors who live out of state or prefer to visit their primary physician, the Transplant Team will forward you the necessary prescriptions for the required tests. If you do not have insurance coverage, please contact the Transplant Team and they will assist you in making alternate arrangements.

3. Annual Primary Physician Visits

Although the Transplant Team is required to collect information for two years after donation, we strongly recommend that you continue to schedule yearly visits with your primary care physician in order to promote a healthy lifestyle.

4. General

Leading a healthy lifestyle including regular exercise, a healthy diet, refraining from illicit drugs, excessive alcohol intake, and smoking are important for long-term healthy living.

5. Update your Contact Information

You will be responsible for contacting the Transplant Center to update your contact information in the event that you move or change your phone number following donation.

Outcome Information for Living Donation:

1. The outcomes for transplant recipients who receive a living donor kidney are excellent.
2. The Transplant Center determines candidacy for transplantation based on existing hospital specific guidelines or practices and clinical judgment.
3. Any transplant candidate may have an increased likelihood of poor outcome even though they may be eligible for transplant (including but not limited to transplant failure, complications, and death) that:
   - Exceed local or national averages
   - Are not disclosed to the living donor
4. The Transplant Center can disclose to the living donor certain information about candidates only with permission of the candidate, including:
   - The reasons for a transplant candidate's increased likelihood of poor outcomes
   - Personal health information collected during the transplant candidate's evaluation, which is confidential and protected under privacy law
5. The likelihood of the recipient's immune system recognizing the donor's kidney (rejection) is less frequent in living donor transplantation. The majority of rejection episodes are successfully treated with medication and kidney function returns to normal.
6. The transplanted kidney fails to work at all in the recipient 1 to 2 % of the time due to a blood clot in the kidney or other technical problem. The recipient may then require a second surgery in an attempt to correct the problem or remove the kidney if the problem is not correctable. If this occurs, the recipient will require another transplant. This can be accomplished by another living donor transplant if available or by placement on the waiting list for a deceased donor kidney. During the waiting time, the recipient can be maintained on dialysis.
7. The most recent specific Living Kidney Donor National Data and Robert Wood Johnson University Hospital Center Data will be provided to you and reviewed by your surgeon.

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Ibrahim HN, Foley R, Tan L, Rogers T, Bailey RF, Guo H et al. Long-term consequences of kidney donation. N Engl J Med 2009; 360: 459-469.

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