



AFTER YOUR KIDNEY TRANSPLANT

A Post-Operative Guide for Patients



VA Pittsburgh Healthcare System
University Drive
Pittsburgh, PA 15240

Phone: 412-360-6000 or 412-360-6155
Fax: 412-360-6942

Introduction

This booklet will give you important information about your transplant.

It does not replace the relationship you have with the transplant team and your local physician. You should get medical advice for any new symptoms or changes in your condition.

Read this booklet with your family before discharge.

The transplant coordinator will review this booklet with you and your family.

THIS BOOK BELONGS TO:

The coordinator assigned to you is: _____

Kidney Transplant Clinic is held every _____ on the _____ floor, at the University Drive VA Pittsburgh Health Care System.

You should arrive at 8:00 AM to have your blood tests drawn on the 1st floor **before** taking your morning medicine Clinic starts at 10:00AM.

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General Information

Kidney transplantation

Kidney transplant is a treatment for end stage renal disease. It can give you freedom from dialysis, fewer dietary restrictions, and an improved quality of life. You will work closely with the transplant team and actively participate in your care. You play an important part in your recovery. You can help detect complications early. Transplantation requires lifelong follow-up with your physician and the transplant team. You must take your medicine as prescribed.

New anti-rejection medicines have contributed to the success of kidney transplantation.

The role of the transplant coordinator

While you are in the hospital, the nurses on the floor will take care of you. Once you are out of the hospital, your transplant coordinator will manage your care. The transplant coordinator will help you make arrangements for getting outpatient laboratory tests, procedures, and clinic visits. They can help you with getting refills for medicines prescribed by your transplant doctors.

After transplant your referring doctor will be updated on your medical condition. The transplant coordinator will consult with doctors, nurses, social services, physical therapists, pharmacists, other members of the health care team. They will work with community resources to assist in solving any problems.

The transplant coordinator provides you with ongoing education about your health care. You can be an active part of maintaining your health and improving your quality of life.

Your transplant coordinator is:

The role of the transplant pharmacist

Your Transplant Pharmacist is a licensed pharmacist who is specialized in the field of transplantation. The transplant pharmacist will work with you, your support person, transplant surgeon, nephrologist, coordinator and social worker to make a plan for you to take your new medicines. You may still be taking some of the medicine you were on before your transplant. The transplant pharmacist is available before, during and after your transplant. They will answer questions regarding medicine, side effects and drug interactions.

The transplant pharmacist will work with the transplant coordinator to help you and your support person become educated on how to take your medicine after the transplant. They will assist you in identifying your new medication and understanding why the medicines are needed. The transplant pharmacist will be available during your clinic appointments to discuss any issues or changes with the medications.

The role of the transplant social worker

The Transplant Social Worker will assist you to achieve the goal of a successful transplant. This includes helping you and your family to understand the non-medical problems, challenges, and changes that transplant brings. The Transplant Social Worker provides support, education, and counseling throughout the transplant process. The Social Worker completes a thorough psychosocial evaluation of your emotional, social, housing and financial resources that may adequately support or not support a successful transplant. This evaluation will identify your ability to manage the responsibility and independence of a transplant and the capability of your social support network. The social worker can also assist with issues related to returning to work and follow-up care.

While you are in the hospital, a transplant social worker will be available to you and your support person. They can help you adjust to life with your new kidney. They will work with the transplant team to develop a discharge plan and to assist in arranging any home care needs. The social worker will also help with a place to stay for your support person and for you when you are ready to be discharged from the hospital.

After the transplant, the social worker remains available to and your support person as an outpatient. The social worker can help with any concerns you or your support person may have. They can look for changes in your support structure or psychosocial status. The Transplant Social Worker is an important resource for you and your family before, during and after the transplant.

Emergencies

If you experience a medical emergency you should contact your local emergency medical system first. Examples of medical emergencies include: chest pain, shortness of breath, or excessive bleeding. Emergency treatment can and should be started before notifying your transplant coordinator.

Once you have been cared for, please give our name and number to the staff. We are available 24 hours a day for emergencies. Your medical condition may be related to your transplant. It may be necessary to be transferred to the VA Pittsburgh Healthcare System.

Your transplant coordinator should be notified of any change in your medical condition or any time that you are in the hospital.



Follow-up Questions Regarding Medical Care

What should I do if I have an emergency and need to be admitted to the hospital and my nearest VA is 60 miles or more from my house?

- In a life and death emergency, go to your nearest emergency hospital. Remember, the VA will not reimburse your cost for care that you receive at the private sector facility. Usually, in these situations the veteran carries some other type of insurance that covers these costs. (Example...Medicare, Medicaid, private health policies). Find out what you will need before you have an emergency!
- You may be able to go to your local VA emergency room. In each case, it is your responsibility to contact this transplant center. We may be contacted during office hours (412) 360-6155-after office hours call the VA operator (412) 360-6000. Ask to have the kidney transplant coordinator paged. The operator will page one of us-we are on-call 7 days a week.

What do I do if my referring doctor feels that I should be admitted to my local hospital?

- Be sure to tell the doctor where you are being admitted to notify the Pittsburgh VA Transplant Center regarding your admission.
- A decision will be made whether to treat you at your referring VA or local hospital or to send you to Pittsburgh. Usually, medical treatment is given at your home VA.

What happens if I get sick when out of my home state?

- Whenever you travel, always know the location of the VA's in that area before you leave home.
- Notify us here in Pittsburgh when you see a doctor.
- Always carry a supply of your medicine with you when you travel. If you need to go to the hospital; some VA facilities are unaware of Prograf (Tacrolimus, FK506).

NOTE: When traveling by air, we suggest that you carry all you medicine on board the plane with you. Please remember to bring your medicine bottles when traveling. The airlines will permit you to carry medicine on board including syringes as long as you have the prescription bottles or packaging.

How often do I need to return to the Pittsburgh VA?

- Please call for yearly appointments if needed at 412-360-6155. Our clerks will assist you.
- We suggest 24 hour urine for creatinine clearance and protein should be done yearly.
- When you come back you will not need to be admitted to the hospital unless medically necessary. Our social worker will arrange for you to stay at The Family houses or one of the nearby hotels. The Pittsburgh VA will be responsible for the cost of your lodging and cab fare. The travel costs are provided by the referring VA. You will be responsible for food, meals, luggage fees and other expenses for you and your support person. A support person may come with you during the return visit.
- You will get lab tests at 8 am on the 1st floor before your clinic appointment. Get your lab tests before taking your medication.

Wound Care

You may have skin staples after your surgery. They usually remain in place for three weeks. Your staples will be removed in the clinic. This procedure is brief and may cause mild discomfort. If you have steri-strips they will fall off after you begin showering. They should not need to be removed.

Check your incision daily for the following:

- redness
- tenderness
- swelling
- drainage
- bleeding

These are common signs of infection. They need to be reported to your transplant coordinator immediately. It will be necessary for a doctor to evaluate your wound. You may need an antibiotic or treatment.

Showering and Bathing

Usually, showering is permitted after discharge from the hospital even if you have staples in place. Do not sit in a bathtub if you have wounds or incisions that are not healed. If you are not sure about this, please check with your transplant coordinator.

Weight

You should weigh yourself each week at the same time of day. Write your weight in your transplant book. Weight gain happens for two reasons. Fluid can gather (edema) in your body or you are eating more (body weight). Any signs of edema should be reported immediately to your transplant coordinator.

Please refer to the nutritional section of this booklet for proper dietary guidelines.

Vital Signs

Temperature

Before leaving the hospital, you will be given a new digital thermometer. Checking your temperature is the only good way of knowing if you have a fever. Check your temperature any time that you feel warm or ill, have shaking chills, or have any other signs of infection.

Blood Pressure

Before leaving the hospital you will receive a new blood pressure machine. You should check your blood pressure at every day or as directed. Write the results on the chart in this booklet.

Medications

The function of your transplanted organ relies on a careful balance of medicines. You are responsible for taking your medicine every day. At first, your medication schedule may seem overwhelming. The Transplant Pharmacist can teach you about your medicines in the hospital and the clinic. Please do not hesitate to contact your transplant coordinator or the transplant pharmacist if you have any questions regarding your medicine.

The transplant team, along with your local doctor, will monitor your condition and change your medications as needed. Your anti-rejection medicines should only be changed by our transplant surgeons. Your local doctor may change your other medications. Please remember to contact your transplant coordinator if a medicine change is made by your local doctor. Contact your transplant coordinator before taking any over-the-counter medicine or herbal products. A new medicine may affect the way your new kidney absorbs and uses your transplant medications. They can also affect your ability to fight infection.

If you miss a dose of your anti-rejection medication contact your transplant coordinator who will assist you in determining if any adjustments are needed in your medication schedule.

Missed Immunosuppression Medication Doses

If you realize you have missed a dose of your immunosuppression medicine and it has only been a few hours since your scheduled dose, you should take your dose immediately. You may then proceed with your normal medication schedule. If you realize you missed your dose close to the time that your next dose is due, do not double. Simply take the scheduled dose and resume your regular medication schedule. If you have any questions regarding missed medications, please contact your transplant coordinator.



Remember, missing your immunosuppression medicine will place you at risk for rejection and loss of your transplanted organ.

Medications to Avoid

Many over-the-counter (OTC) and prescription medications can be taken safely, but here are some that can be harmful to your transplant. Please contact your transplant coordinator prior to taking any new medications.

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

You should avoid Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). They are often prescribed for arthritis, joint pain, muscle aches, headaches, and premenstrual discomfort. Even in small doses, these drugs can be harmful to the function of your transplant. These medications may harm you. They could cause stomach ulcers and bleeding, increased blood pressure, and compromised kidney function.

Some common NSAID medication names you may be familiar with include:

- Motrin, Advil or Ibuprofen
- Indocin – or Indomethacin
- Clinoril - Sulindac
- Aleve, Naprosyn, Midol
Naproxen or NaprSalsalate
- Feldene - Piroxicam

Aspirin

Unless specifically ordered by your physician, avoid taking regular dose ASPIRIN (325 milligrams) or higher dosages. Aspirin may cause stomach irritation. If you are prescribed aspirin, be sure to take it with food.



Keep a current list of medicines that you are taking in your wallet or purse at all times.

Transplant Medications

It is very important that you take your medications exactly as prescribed and follow dosing instructions closely.

- Do not increase or decrease the dose of your medications unless instructed to do so by the transplant team, since this can result in side effects or other problems.
- Do not stop taking any of your medications unless instructed to do so by the transplant team.
- Tell your doctor and pharmacist about any over-the-counter and prescription medications that you are taking.
- They need to be added to your medicine list. It is important that your medicine list always be updated and current.
- Include vaccinations received on your medication list.
- Only one pharmacy should be used to get all of your medications. This helps avoid medication duplication and mistakes in the future.

Storing Medicine

- Store all your medicine at room temperature.
- Keep them away from heat, light or moisture (unless instructed otherwise).
- Do not store your medicine in the bathroom.
- Keep all of your medicine out of the reach of children.

Prednisone

Generic Name: Prednisone
Brand Name: Deltasone®, Sterapred®, and others
Dosage Form(s): Tablet 1, 2.5, 5, 10, 20 and 50 mg, Oral solution 5mg/5ml

Use: This medication is used to treat many diseases. It is known for its strong anti-inflammatory effects. It is used after transplant as an immunosuppressive agent to prevent or treat rejection.

Side Effects

Common: Difficulty sleeping or insomnia, mood changes, nervousness, increased appetite, swelling, unusual weight gain, dizziness, nausea, indigestion or acid reflux, increases in blood sugars, increases in blood pressure, increases in blood cholesterol, taste disturbances or sore throat, weakened bones, weaken muscles, acne-like rash, or changes in vision.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medicine you are taking. They will check for interactions. Medications that may interact with prednisone include, drugs that may deplete potassium, anticholinesterase inhibitors (neostigmine, pyridostigmine), oral anticoagulants (warfarin), antidiabetic agents, isoniazid, bupropion, cholestyramine, cyclosporine, digoxin, estrogens, fluoroquinolone antibiotics (ciprofloxacin, levofloxacin), ketoconazole, NSAIDs, phenytoin, quetiapine, and thalidomine. Other drugs may interact with prednisone. Talk with your transplant coordinator or doctor if you have any questions.

Missed Dose: If you miss a dose, take it as soon you remember. Do not “double up” the dose to catch up.

The dose of prednisone needs to be slowly reduced. If this medication is suddenly stopped, you may have extreme fatigue, weakness, stomach upset or dizziness. Avoid alcohol if possible.

How to take this medication:

- Take before, during, or immediately after meals or with food or milk. When you take this medication once a day, it should be taken in the morning before 9 a.m. this will help avoid difficulty sleeping.
- Your prescription for Prednisone will usually be written in 5mg Tablets to make dosage change easier.

Prednisone Dosing Chart

Current Dose	Number of Prednisone 5 Milligram Tablets to Take
5 mg	1 tablet
7.5 mg	1 and one-half tablet
10 mg	2 tablets
12.5 mg	2 and one-half tablets
15 mg	3 tablets
17.5 mg	3 and one-half tablets
20 mg	4 tablets

Prograf® (Tacrolimus)

Generic Name:	Tacrolimus
Brand Name:	Prograf®
Synonyms:	FK-506
Dosage Form(s):	Capsule (0.5 mg, 1 mg, and 5 mg), IV solution

Use: This medication is used to prevent the body from rejecting a transplanted organ, by suppressing the body's immune system.

Side Effects

Common: The most common side effects are increased risk of infection, tremor or shaking hands, tingling feeling of hands or feet, increased blood pressure, abnormal kidney function, diarrhea or excessive bowel movements, constipation or lack of bowel movements, headache, abdominal pain/nausea, insomnia or trouble sleeping, low magnesium levels, elevated cholesterol levels, increased potassium levels, alopecia or hair loss, increased gout attacks, and increased risk of cancers, commonly skin cancer.

If any of these side effects continue or become bothersome, inform your doctor.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "doubleup" the dose to catch up.

How to take this medication:

- 1) Take tacrolimus at the same 12-hour intervals every day to achieve consistent blood concentrations.
- 2) Take tacrolimus consistently either with or without food because the presence and composition of food decreases the absorption of tacrolimus.
- 3) Do not eat grapefruit or drink grapefruit juice in combination with tacrolimus.
- 4) Take this medication exactly as prescribed. Your dose may be adjusted based upon your response or tolerance.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medications you are taking, so they can check for interactions. Please contact your transplant coordinator if you are started on any medications to treat fungal infections, tuberculosis infection, HIV infection or a blood pressure medication called diltiazem.

PROGRAF® Dosing Chart

Current Dose	Number of 1 mg capsules (white capsules)	Number of 5 mg capsules (greyish-red capsules)
1 mg	1	0
2 mg	2	0
3 mg	3	0
4 mg	4	0
5 mg	5	OR 1
6 mg	1	PLUS 1
7 mg	2	PLUS 1
8 mg	3	PLUS 1
9 mg	4	PLUS 1
10 mg	0	2
11 mg	1	PLUS 2
12 mg	2	PLUS 2
13 mg	3	PLUS 2
14 mg	4	PLUS 2
15 mg	0	3

Medications that Interact with PROGRAF® (Tacrolimus)

There are a number of medications that may interact with Tacrolimus (Prograf®/FK-506). Some medications that interact with Tacrolimus should not be taken, while other medications can be taken, with careful monitoring. The following is a list of medications that require adjustment or monitoring if taken in combination with Tacrolimus. This is not a complete list, so it is absolutely essential to contact your transplant coordinator or transplant pharmacist about any new prescription or non-prescription (over-the-counter) medication that is prescribed.

Erythromycin	Fluconazole	Cholestyramine	NSAIDS
Clarithromycin	Itraconazole	Cimetidine	Ribafutin
Azithromycin	Posaconazole	Carbamazepine	Rifampin
Verapamil	Voriconazole	Phenobarbital	herbals
Diltiazem	Protease Inhibitors	Phenytoin	Amiodarone

Use in Pregnancy: Tacrolimus is listed as a pregnancy category C. Tacrolimus should only be used during pregnancy only if the potential benefit to the mother justifies the potential risk to the fetus. Please discuss family planning with the transplant team prior to conception.

Generic Medication: As of December 2013, Prograf® is available as a generic version called tacrolimus. These generic versions are supplied by approximately 7 different drug manufacturers. Currently, the national VA is supplying patients the brand version of Prograf®. However, at some time there may be a national conversion to one generic formulation which will be supplied by one manufacturer. At that time, you will be asked to have follow-up Prograf® levels to ensure that your dose maintains drug concentrations as determined to be what is therapeutic for you. In the meantime, please check each Prograf® refill to ensure that the capsules look exactly the same. If they do not look the same, please contact your transplant coordinator so assess the change in capsule formulation. Additionally, a newer, extended release version of tacrolimus called Astagraf XL ® has recently been FDA approved. This medication should not be substituted for Prograf® as the dosing frequencies, or the number of times a day you have to take the medication, is different.

Cyclosporine, Modified

Generic Name:	Cyclosporine, modified
Brand Names:	Neoral ®, Gengraf ®
Synonyms:	CSA, CyA
Dosage Form(s):	Capsules (25 mg and 100 mg)

Use: This medication is used to prevent the body from rejecting a transplanted organ. It suppresses the body's immune system.

Side Effects

Common: Renal dysfunction, tremor, increased hair growth on face, chest, and back, increased blood pressure, and enlargement of the gums that can become swollen and/or inflamed

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions. Do not take nonsteroidal anti-inflammatory medications when on cyclosporine. The following is a listing of some drugs that are known to interact with cyclosporine. This listing is not comprehensive and does not include all drugs that interact with cyclosporine.

Medications that Interact with CYCLOSPORINE

amiodarone	azithromycin	bosentan	carbamazepine
clarithromycin	colchicine	danazol	Diltiazem
erythromycin	fluconazole	imatinib	itraconazole
nafcillin	NSAIDs	oral contraceptives	orlistat
phenobarbital	Phenobarbital	phenytoin	posaconazole
Protease Inhibitors	rifampin	Simvastatin	St. John's Wort
verapamil	voriconazole		

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "double up" the dose to catch up.

Note: Sandimmune is a different version of cyclosporine. It is called cyclosporine non-modified. It has a lower absorption rate, meaning less drug gets from your stomach into your blood and therefore leads to lower drug levels at similar dosages. Please check your cyclosporine formulation each time it is mailed to you and contact your transplant coordinator if your capsules physically look different as different dosage forms could lead to changes in drug levels.

How to take this medication:

- Cyclosporine should always be taken in two doses (twice daily). Cyclosporine should be taken consistently at the same times every day. Cyclosporine should also be taken consistently with or without food every day. Grapefruit and grapefruit juice should completely be avoided when taking cyclosporine.

Use in Pregnancy: Cyclosporine modified is listed as a pregnancy category C. There are no adequate and well-controlled studies in pregnant women. Please discuss with the transplant team prior to conception.

Mycophenolate

Generic Name	Mycophenolate Mofetil	Mycophenolic Acid
Brand Name	CellCept®	Myfortic®
Synonyms	MMF	MPA
Dosage Forms	250mg capsule 500mg tablet 200mg/ml Powder for Suspension	180 and 360mg tablets

Use: This medication is used to prevent the body from rejecting a transplanted organ, by suppressing the body's immune system.

Side Effects

Common: Common side effects include low white blood counts, diarrhea, vomiting, indigestion, stomach pain, swelling of the lower legs, ankles and feet, and high blood pressure.

Important Safety Information: Taking mycophenolate while pregnant can result in a miscarriage during the first 3 months of pregnancy. It can result in severe birth defects of the unborn baby. Patients taking mycophenolate are at an increased risk of cancer, especially skin cancer, due to immunosuppression. Patients taking mycophenolate also have an increased susceptibility to infections.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Medications that Interact with MYCOPHENOLATE

antacids	Augmentin	cholestyramine	Ciprofloxacin
oral contraceptives	rifampin	sevelamer	

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "double up" the dose to catch up.

Notes: If the table or capsule should come apart, avoid inhaling the powder or direct contact with the skin if you are a woman of child bearing age who is not actively taking the medication. If contact occurs, wash thoroughly with soap and water; rinse eyes with plain water.

How to take this medication:

- This medication can be taken with or without food. Swallow whole. Do not break, crush, chew or open before swallowing. If you take antacids containing magnesium or aluminum hydroxide, it is recommended that the antacid not be taken together and to space them out by at least 2 hours.

Use in Pregnancy: Use of mycophenolate during pregnancy should be completely avoided due to risk of miscarriage in the first three months or risk for serious birth defects to the unborn baby. All women who could possibly become pregnant who are planning to use mycophenolate must have a negative pregnancy test prior to starting therapy and should receive routine pregnancy testing while receiving mycophenolate therapy. Women that could possibly become pregnant must use acceptable birth control during entire mycophenolate therapy and for 6 weeks after stopping mycophenolate.

Acceptable Contraception Methods for Women who plan to use Mycophenolate

<p>OPTION 1 Methods to Use Alone</p>	<ul style="list-style-type: none"> • Intrauterine devices (IUDs) • Tubal sterilization • Patient's partner had a vasectomy
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OR

OPTION 2	HORMONE METHODS (choose 1)	BARRIER METHODS (choose 1)
Choose One Hormone Method <u>AND</u> One Barrier Method	Estrogen and Progesterone 1) Oral Contraceptive pill 2) Transdermal patch 3) Vaginal ring Progesterone-only <ul style="list-style-type: none"> • Injection • Implant 	1) Diaphragm with spermicide 2) Cervical cap with spermicide 3) Contraceptive sponge 4) Male condom 5) Female condom

OR

OPTION 3	BARRIER METHODS (choose 1)	BARRIER METHODS (choose 1)
Choose One Barrier Method from each column (must choose two methods)	1) Diaphragm with spermicide 2) Cervical cap with spermicide 3) Contraceptive sponge	1) Male condom 2) Female condom

Generic Name: Sirolimus

Brand Name: Rapamune®

Dosage Form(s): Liquid 1mg/ml, 0.5mg, 1 mg, and 2mg tablets

Use: This medication alters the body's immune system, and is used to prevent rejection after a transplant. It can also be used to treat rheumatoid arthritis and other conditions.

Side Effects

Common: Nausea, vomiting, diarrhea, upset stomach, anemia or low red blood counts, low platelet counts or increased risk of bleeding, low white blood cells which fight off infection, delayed wound healing, increased blood cholesterol and triglycerides, rash, joint pain, sores of the mouth, swelling of legs, increased blood pressure, hair growth and protein spilling in the urine.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within twelve hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "double up" the dose to catch up.

Notes:

- Take consistently with or without food.
- Do not take with grapefruit juice.
- Tablets should not be crushed or broken.
- Take the liquid form with 1-2 oz of orange juice or water in a glass or cup, avoiding Styrofoam.
- Rinse the container with another four ounces of water or orange juice and swallow that amount as well.
- Oral solution needs to be protected from light.
- Oral solution must be refrigerated.

Date	Dose	Frequency

Everolimus

Generic Name	Everolimus	Everolimus
Brand Name	Zortress®	Afinitor® - Cancer treatment
Dosage Forms	0.25mg, 0.5mg, 0.75mg tablets	2.5 mg, 5 mg, 7.5 mg, and 10 mg tablets 2 mg, 3 mg, and 5 mg tablets for suspension

Use: This medication alters the body's immune system, and is used to prevent rejection after a transplant. It can also be used to treat certain types of cancer and other conditions.

Side Effects

Common: Mouth sores, infections, feeling weak or tired, cough, shortness of breath, diarrhea, constipation, rash, dry skin, itching, upset stomach, vomiting, fever, loss of appetite, weight loss, swelling of arms, hands, feet, ankles, face or other parts of the body, abnormal taste, dry mouth, headache, nose bleeds, pain in arms and legs, mouth and throat, back or joints, high blood sugar, high blood pressure, elevated cholesterol or triglyceride levels, difficulty sleeping increased risk of lymphoma or skin cancer, low red blood cell counts, hair loss, muscle spasms, and feeling dizzy.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions. Everolimus is known to interact with many medications. Listed below are several of the many medications that can interact with everolimus.

Medications That Interact With Everolimus

Aprepitant	Atazanavir	Carbamazepine	Diltiazem
Erythromycin	Erythromycin	Fluconazole	Ketoconazole
Midazolam	Nefazodone	Octreotide	Phenobarbital
Phenytoin,	Rifabutin	Rifampin	Rifampin
Rifapentine	Ritonavir	Saquinavir	St. John's Wort
Verapamil			

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "double up" the dose to catch up.

How to take this medication:

- The recommended dose of Zortress® tablets is to be taken twice daily at the same time every day.
- The dose should be taken either consistently with food or consistently without food.
- Zortress® tablets should be swallowed whole with a glass of water. Do not break or crush tablets.
- The dose of this medication may be changed during treatment to help manage side effects. Your doctor will monitor levels of this medication in your blood. It is important to know that your doctor may change the dose of AFINITOR based on the levels in your blood.

Use in Pregnancy:

Zortress may cause harm to the unborn baby. A highly effective method of birth control should be used while you are taking Zortress and for 8 weeks after ending treatment.

Belatacept

Generic Name	Belatacept
Brand Name	NULOJIX®
Dosage Forms	This medication is available by injection (into the vein) only.

Use: This medication alters the body's immune system, and is used to prevent rejection after a kidney transplant.

Common side effects: anemia, diarrhea, urinary tract infection (UTI), swelling in the limbs and feet, constipation, high blood pressure, fever, injury to transplanted organ, cough, nausea, vomiting, headache, fluctuations in potassium in your blood, increased risk of cancer, and low white blood cells.

Drug interactions: There is not much information on interactions at this time. There have not been enough studies to see which drug interactions are important with this medication. Tell your doctor or pharmacist about any prescription or over the counter medication you are taking. They need to keep your medication list current.

How you will receive this medication:

Your doctor will determine the dosing of belatacept based on your weight. You will receive several doses of this medication as an intravenous infusion in your arm. Each infusion will take approximately 30 minutes to deliver all the medication to your bloodstream. You will receive belatacept at the following points before and after your transplantation if you are receiving this medication during your initial transplant. Some patients may receive this medication after transplant if their transplanted kidney shows poor tolerance of tacrolimus or cyclosporine:

- 1) On the day of transplantation (day 1) before the new kidney is transplanted
- 2) On day 5 (approximately 96 hours after your first dose of belatacept)
- 3) At the end of weeks 2, 4, 8, 12 after your transplantation
- 4) At the end of week 16 after your transplantation and every 4 weeks (plus or minus 3 days) thereafter.

Belatacept should be given to you with other immunosuppressant (anti-rejection) medications. These medications include basiliximab (at the beginning of your transplant), mycophenolate mofetil, and corticosteroids such as prednisone.

Use in Pregnancy:

There have not been any studies to determine whether belatacept is harmful to the unborn baby if this medication is used during pregnancy. It is currently listed as a pregnancy category C medication. Therefore, the risks of using belatacept must be compared to the benefits of using the medication and a decision should be made based on this comparison.

Generic Name: Alemtuzumab

Brand Name: Campath®

Dosage Form(s): 30mg/ml Intravenous Infusion

Use: This medication alters the body's immune system, and is used to prevent rejection after a transplant. It quickly lowers the circulating T cells which are the main cells of the immune system that initially reject the transplanted kidney. It can also be used to treat chronic lymphocytic leukemia and is also being investigated as a treatment for multiple sclerosis. Use in kidney transplantation is considered off-label meaning that the Food and Drug Administration has not granted approval for use for this specific indication here in the US. If you are considered a candidate for this therapy, it will be requested that you sign additional consent forms to receive this medication prior to your transplant. Most patients will only receive one dose of this medication prior to implanting the kidney into the body.

Side Effects

Common: Fever, chills, nausea, vomiting, itching, rash, changes in blood pressure, headache, shortness of breath, increased heart rate, diarrhea, pain at the infusion site in the vein, increased risk of infection, muscle pain,

Rare: Significant chest pain or tightness, throat closure or tightness, weight loss, stomach pain, heart arrhythmias, low white blood cells to fight off infection, low red blood cells and low platelets.

Drug interactions: Avoid live vaccines. If you or a doctor feels that you need to receive a live vaccine, please contact the transplant program to assess safety prior to vaccination.

Notes: Patients will receive medications such as acetaminophen, diphenhydramine, methylprednisolone and ranitidine to decrease the chances of having a reaction to the medication while it is being infused into the body. This medication will be given over 2 hours during your transplant surgery.

Generic Name: Thymo, Anti-thymocyte Immune globulin (rabbit)

Brand Name: Thymoglobulin®

Dosage Form(s): 25mg/ml Intravenous Infusion

Use: This medication alters the body's immune system, and is used to prevent or treat rejection after a transplant. It quickly lowers the circulating T cells which are the main cells of the immune system that initially reject the transplanted kidney. It can also be used to treat certain types of anemia or low red blood cells.

Side Effects

Common: Fever, chills, nausea, vomiting, flu-like symptoms, itching, rash, changes in blood pressure, dizziness, headache, shortness of breath, increased heart rate, back pain, pain at the infusion site in the vein, low white blood cells to fight off infection, increased risk of infection, low platelets to prevent bleeding, muscle or joint pain, diarrhea, elevated blood potassium or heart arrhythmias.

Rare: Significant chest pain or tightness, throat closure or tightness, weight loss, stomach pain, heart arrhythmias, blurred vision, low red blood cells and low platelets.

Drug interactions: Avoid live vaccines. If you or a doctor feels that you need to receive a live vaccine, please contact the transplant program to assess safety prior to vaccination.

Notes: Patients will receive medications such as acetaminophen, diphenhydramine, and methylprednisolone to decrease the chances of having a reaction to the medication while it is being infused into the body. This medication will be given over 6 hours during your transplant surgery then for 3 to 7 days after your surgery depending on how your body responds to the medication. During the infusion, you will remain on monitors to assess your breathing, heart rate, blood pressure and oxygen saturations to ensure that you are tolerating the infusion well.

Please inform your transplant team if you have a known allergy to either horses or rabbits. One formulation of this medication, Atgam, which is rarely used, is produced from horse serum and can cause a very life threatening reaction. Some patients that have significant exposure to rabbits may have a similar reaction to the more frequently used version called thymoglobulin.

Generic Name: Basiliximab

Brand Name: Simulect®

Dosage Form: IV solution (20 mg vial)

Use: This medication is used to prevent the body from rejecting a transplanted kidney by suppressing the body’s immune system. Anyone that has an allergy to mice or murine products or to mannitol should not receive this medication.

Side Effects: Side effects to basiliximab are rare. Most of the side effects listed below can be caused by the other immunosuppressive medications you are receiving. The following side effects have been reported in patients who have received basiliximab®. Some patients can experience an allergic reaction to the medication. Please inform your nurse if you experience shortness of breath, chest pain, chest tightness, wheezes in the chest, dizziness, increased heart rate, fevers, shivering, rash or itching. This typically occurs within 24 hours after receiving in the infusion.

Rare: Constipation, nausea, diarrhea, vomiting, abdominal pain, swelling in hands and feet, tremor, headache, fatigue, bleeding, , generalized weakness, urinary hesitancy, leg cramps, prickly sensation, rash, night sweats, muscle pain, blurred vision.

You may or may not experience these side effects. If any of these side effects continue or become bothersome, inform your doctor, nurse coordinator, or pharmacist.

Drug Interactions: None

How to take this medication:

- The first dose of this medication was given to you during your transplant surgery. This medication is given again 4 days after transplant. Because this medication is given intravenous (through the vein), it will be given in the hospital. It will take 30 minutes to give.

Date	Dose	Frequency

Generic Name: Ranitidine

Brand Name: Zantac®

Dosage Form(s): Tablet 75mg or 150 mg, Capsule 150mg or 300mg, Solution 150mg/10ml

Use: This medication decreases the amount of acid released by the stomach. It is used to prevent and treat ulcers and gastroesophageal reflux disease (GERD).

Side Effects

Common: Dizziness, headache, constipation, diarrhea, fatigue and sweating.

Rare: Skin rash, hives, itchiness, pale stool, confusion, easy bruising, vision changes, low blood counts (white blood cells, platelets, and red blood cells), and joint or muscle pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions. Ranitidine may interact with some HIV medications. Most other medications do not create any interaction issues.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: It may take several days before this medication relieves stomach pain. To help relieve the pain, antacids may be used with this medication unless otherwise directed. However, wait ½ – 1 hour between taking the antacid and ranitidine.

How to take this medication:

- This medication can be taken with or without food.
- If you are taking one dose every day, it is best to take ranitidine in the evening if you experience reflux symptoms at bedtime or early in the morning.

Date	Dose	Frequency

Generic Name: Omeprazole

Brand Name: Prilosec®, Prilosec OTC®

Dosage Form(s): Sustained Release Capsules 10 mg, 20 mg, and 40mg

Use: This medication works by reducing the amount of acid produced by the stomach. It is used to prevent and treat ulcers or gastroesophageal reflux.

Side Effects

Common: Headache, diarrhea or constipation, stomachache, nausea, gas, loss of appetite, or low magnesium levels

Rare: Skin rash, back or joint pain, nervousness, sleep disturbances, cough, chest pain, loss of hair, ringing in ears, swelling of stomach, edema, fatigue, dizziness and increased risk of infections such as pneumonia and bowel infections, increased risk of weak bones.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within six hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: It may take a few days before the medication begins to relieve stomach pain. To help relieve the pain, antacids may be taken with omeprazole.

How to take this medication:

- This medication works best if taken 30 minutes before a meal, preferably in the morning. Swallow whole, do not chew, crush or open the capsule. The long action may be destroyed and chance of side effects increased.

Date	Dose	Frequency

Generic Name: Nystatin

Brand Name: Mycostatin®, Nilstat®, and others

Dosage Form(s): Oral Suspension, Oral and Vaginal Tablets, and oral troche or lozenge

Also available as a power, cream, and ointment.

Use: Nystatin is an antifungal. It is used to prevent and treat fungal infections of the mouth.

Side Effects

Rare: Nausea, vomiting, abdominal or stomach discomfort, gas or diarrhea.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions. As this medication is minimally absorbed, there are no concerns with drug interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within two hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Dentures may be left in mouth when swishing and swallowing Nystatin.

How to take this medication:

- Shake the bottle well.
- Place one-half of the dose in each side of your mouth.
- Swish around the entire oral cavity.
- Retain the liquid in your mouth as long as possible before swallowing.
- Do not eat or drink anything for 15 minutes after taking Nystatin.
- It is best to take this medication after meals.

Date	Dose	Frequency

Generic Name: Sulfamethoxazole and Trimethoprim

Brand Name: Bactrim®, Septra®, and others
Synonyms: SMZ / TMP
Dosage Form(s): SS = Single Strength = 400 / 80 mg tablet
DS= Double Strength= 800 / 160mg tablet
Injection, Oral Suspension and tablets

Use: Bactrim is a combination antibiotic used to treat infections. It is also used for the prevention and treatment of *Pneumocystis carinii* pneumonia (PCP) or *Pneumocystis jirovecii* pneumonia (PJP). It is also a useful antibiotic for the treatment of urinary tract infections.

Side Effects

Common: Stomach upset, nausea, vomiting, headache or loss of appetite. If any of these side effects continue or become bothersome, inform your doctor.

Rare: Notify your doctor or coordinator if you develop breathing difficulties, skin rash, itching, hives, chills, fever, sore throat, aching of joints or muscles, easy bleeding or bruising, yellowing of the eyes and skin, peeling skin, tiredness or change in urine output

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If you take this medication once a day and if it's within 12 hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not "double up" the dose to catch up.

Notes: This medication may cause increased sensitivity to the sun. Use sunscreen (without PABA) or protective clothing (hat and sunglasses) if you must be outside for a long period.

How to take this medication:

- This medication can be taken with or without food. Take this medication with a glass of water. Drink several additional glasses of water daily unless otherwise directed.

Date	Dose	Frequency

Generic Name: Pentamidine Isethionate Nebulization Solution

Brand Name: NebuPent™ and others

Dosage Form(s): Injection and Inhalation

Use: This medication is used to prevent *Pneumocystis carinii* pneumonia (PCP) or *Pneumocystis jiroveci* pneumonia (PJP), a very serious type of pneumonia.

Side Effects

Common: Metallic taste, loss of appetite, cough, diarrhea, headache, dizziness, stomach upset, dryness, or congestion.

Rare: Nausea, vomiting, rash, shortness of breath, difficulty breathing or swallowing, pain in abdomen or chest pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, schedule your dose as soon as remembered. If it is almost time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Sucking on a hard candy after each treatment can help reduce the bitter metallic taste that may occur during use of this medicine. If you have difficulty breathing or use many medicated inhalers to help with your breathing, your doctors may choose to pick a different version of medication for prevention of PCP or PJP.

How to take this medication:

- This medication is inhaled through a special breathing unit (nebulizer) which makes sure the drug reaches deep into the lungs. Treatment usually takes 30-45 minutes and is given once a month. Your coordinator will assist you in making arrangements for having this medication administered at a doctor’s office or if possible, at home.

Date	Dose	Frequency

Generic Name: Acyclovir

Brand Name: Zovirax®
Dosage Form(s): Injection, Oral Suspension, Ointment,
Tablet (400 mg and 800 mg) and
Capsule (200 mg)

Use: Acyclovir is an antiviral medication. This medication is used to prevent and treat herpes infections of the skin, mouth, mucus membranes, herpes zoster (shingles), chicken pox and genital herpes.

Acyclovir does not cure herpes, but relieves the pain and makes the infection clear faster.

Side Effects

Common: Loss of appetite, nausea, vomiting, diarrhea, and headache.

Rare: Numbness or tingling of the hands or feet, leg pain, sore throat, skin rash, low blood counts, changes in renal or kidney function, dizziness or weakness.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

How to take this medication:

- This medication can be taken with or without food.
- Acyclovir is best taken with a full glass of water.

Date	Dose	Frequency

Generic Name: Valganciclovir

Brand Name: Valcyte®

Dosage Form(s): 450mg Tablet or 50mg/ml Powder for Solution

Use: This is an antiviral medication used to prevent or treat infections caused by Cytomegalovirus (CMV). CMV is not a common virus, but after kidney transplant it could cause a very severe and prolonged case of diarrhea.

Side Effects

Common: Headache, diarrhea, nausea, vomiting, loss of appetite, dizziness, confusion, nervousness, tremor, weakness, and swelling of feet or ankles.

Rare: Skin rash, sore throat, fever, chills, cough, unusual bleeding or bruising, confusion, low blood counts, or severe abdominal pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is over 6 hours and you take your medication twice a day or 12 hours and you take your medication once a day of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: This medication may reduce the number of blood cells or platelets, which are needed for clotting. Avoid situations where bruising or injury may occur to prevent from bleeding. Also, if you are a woman that could become pregnant, please inform your transplant team if you become pregnant.

How to take this medication:

- Valganciclovir tablets should be swallowed whole and taken with food. Do not open or crush the tablets. Drink plenty of fluids while taking this medication, at least 6-8 glasses of liquids a day.

Date	Dose	Frequency

Generic Name: Dapsone

Brand Name: Avlosulfon®

Dosage Form(s): Tablets: 25 mg and 100 mg

Use: This medication is used to prevent *Pneumocystis carinii* pneumonia (PCP) or *Pneumocystis jiroveci* pneumonia (PJP), a very serious type of pneumonia. It can also be used to treat leprosy, malaria, arthritis, leprosy and other skin conditions.

Side Effects

Common: Stomach pain, loss of appetite, nausea, vomiting, low red blood cell counts and headache.

Rare: Tingling of hands and feet, dizziness, muscle weakness, blurred vision, ringing in the ears, fever, sore throat, rash, weakness, fatigue, jaundice or yellowing of the skin..

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within twelve hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: May cause photosensitivity. Wear sunscreen and protective clothing when outdoors.

How to take this medication:

- This medication can be taken with or without food.

Date	Dose	Frequency

Generic Name: Ferrous Sulfate

- Brand Name: Feosol®, Slow FE®, and others
- Synonyms: Iron
- Dosage Form(s): Capsules, Liquid, Tablet 300 mg, 325 mg (and others)

Use: Iron is a mineral that the body needs to produce red blood cells. When the body does not get enough iron, it can not produce enough red blood cells to keep you healthy and to deliver oxygen throughout the body. This is called iron deficiency anemia. Ferrous sulfate is used to treat or prevent low iron blood levels in iron deficiency anemia.

Lack of iron can cause tiredness, shortness of breath, decreased physical performance and increase your chance of getting an infection.

Side Effects

Common: Nausea, vomiting, constipation, stomach discomfort and heartburn; in addition, stools may turn black or green.

Rare: Diarrhea, stomach pain, chest pain, or dark urine.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions. Do not take near levothyroxine, mycophenolate containing products, and certain antibiotics such as quinolones and tetracyclines.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within two hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Iron can cause stools to look darker or turn black in color. This is due to unabsorbed iron and is not harmful.

Eggs, milk, dairy products, coffee, tea, spinach, fiber and antacids can decrease iron absorption. Separate the iron tablets by one to two hours.

Foods rich in iron include lean red meat, beans, nuts, spinach, asparagus, oatmeal, and dried peaches. Vitamin C can increase the absorption of iron, which can be found in citrus fruits and fresh vegetables.

How to take this medication:

- It is best to take this medication on an empty stomach, with water or fruit juice. Iron can be taken with food if it upsets your stomach.

Date	Dose	Frequency

Generic Name: Sodium Bicarbonate

Brand Name: Neut[®] and others
Synonyms: NaHCO₃, Baking Soda
Dosage Form(s): IV Solution, Powder, Tablet 325mg or 650 mg
650 mg = 5 grains or 5 gr.

Use: Sodium bicarbonate treats or prevents too much acid in the blood or urine. It can also reduce stomach acids; therefore, can be used as an antacid to treat heartburn or indigestion.

Side Effects

Common: Bloating, gas, stomach cramps, headache, nausea, or irritability.

Rare: Muscle rigidity, weakness, vomiting, loss of appetite, slow reflexes, confusion, nervousness, swelling of feet or ankles, changes in blood chemistries increased thirst, or urge to urinate.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within two hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Watch your salt intake, since this medication has high sodium content.

How to take this medication:

- This medication can be taken with or without food.

Date	Dose	Frequency

Generic Name: Fludrocortisone

Brand Name: Florinef ®
Dosage Form(s): Tablets 0.1 mg

Use: Florinef is a corticosteroid medication involved with sodium and potassium regulation. Your body naturally produces similar corticosteroids, which are necessary to maintain the balance of minerals and water for good health.

Florinef acts on the kidneys to retain sodium and eliminate potassium, by excreting it in the urine.

Side Effects

Common: Dizziness, swelling of hands or feet, headaches, weakness, increased blood pressure, change in appetite, nausea, vomiting, and muscle cramp or pain.

Rare: Skin rash, hives, cough, shortness of breath, itch, redness, unusual bruising, and joint pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within twelve hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Limit salt intake when taking Florinef, to minimize water retention.

How to take this medication:

- This medication can be taken with or without food.

Date	Dose	Frequency

Generic Name: Nifedipine

Brand Name: Procardia (XL)[®], Adalat (CC)[®]

Dosage Form(s): Sustained / extended release tablets: 30, 60, and 90 mg

Use: Nifedipine is used to treat hypertension (high blood pressure). Nifedipine is a calcium channel blocker. Nifedipine blocks the movement of calcium into the heart muscle and blood vessels. This results in relaxing the heart muscle and dilating the blood vessels, which lowers blood pressure.

Side Effects

Common: Dizziness, lightheadedness especially during the first few days. Get up slowly to minimize dizziness. Bloating, heartburn, nausea, blurred vision, muscle cramps, weakness, headache, flushing, sweating, and sleep disturbances. These effects should disappear as your body adjusts to the medication.

Rare: Breathing difficulties, swelling of hands or feet, chest pain or irregular heartbeat, tender bleeding or swollen gums, thickening of gums, shortness of breath, and constipation.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 6 hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: The empty tablet shell may appear in the stool. Do not be concerned; the medication has already been absorbed into your body.

How to take this medication:

- This medication should be taken on an empty stomach. If significant stomach upset or pain occurs, it may be taken with food.
- Swallow whole, do not chew, break or crush the dose.
- Avoid drinking grapefruit juice or eating grapefruits while taking this medication.

Date	Dose	Frequency

Generic Name: Metoprolol or Metoprolol XL

Brand Name: Lopressor®, Toprol XL long-acting version®

Dosage Form(s): Tablets: 25, 50, and 100mg

Long-acting tablets: 25, 50, 100 and 200mg

Use: Metoprolol is used to treat hypertension (high blood pressure) or for control of certain abnormal heart beats. Metoprolol is a beta blocker, which can lower both your heart rate as well as your blood pressure.

Side Effects

Common: Dizziness, lightheadedness, low heart rate especially during the first few days. Get up slowly to minimize dizziness. Nausea, vomiting, diarrhea and constipation are also common side effects. These effects should disappear as your body adjusts to the medication.

Rare: Breathing difficulties or shortness of breath, swelling of hands or feet, weight gain, chest pain or irregular heartbeat, decreased sex drive, erectile dysfunction and depression.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 6 hours of the time for your missed dose of regular release tablets and you are taking them twice a day, take your dose as soon as you remember it and resume your usual dosing schedule. If you are using the XL tablets and are taking them once a day, take the medication as soon as you remember it. Do not “double up” the dose to catch up.

Notes: Let doctors know that you are taking betablockers before any heart procedures or heart testing such as stress tests.

How to take this medication:

- The regular release tablets should be taken with food. The XL or long-acting tablets can be taken with or without meals.
- Both versions may be cut in half. Do not further crush or chew XL version.

Date	Dose	Frequency

Generic Name: Clonidine

Brand Name: Catapres®
Dosage Form: Oral tablet: 0.1, 0.2, 0.3mg tabs
Topical patch: 0.1mg/24h, 0.2mg/24hr, or 0.3mg/24hr

Use: This medication can quickly lower your blood pressure. It can lower both your blood pressure and your heart rate.

Side Effects

Common: Dizziness, lightheadedness, low heart rate, fatigue or tiredness, sedation or grogginess, dry mouth. These effects should disappear as your body adjusts to the medication. You may experience a significant drop in your blood pressure once starting this medication.

Rare: Rash, itching, chest pain, nausea, decreased sex drive.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 6 hours of the time for your missed dose and you are taking it twice a day, take your dose as soon as you remember it and resume your usual dosing schedule.

Notes: Do not stop this medication without first speaking to a physician. It can cause rebound hypertension which is a significant increase in your blood pressure. Upon stopping this medication, most patients are tapered off of the medication by taking smaller or less frequent dosages a day.

How to take this medication:

- Clonidine can be taken with or without food.
- Apply topical patch once a week to upper arm or torso. Apply to a clean, dry, hairless site once a week on the same day each week. Rotate patch application sites. If the patch becomes loose, there is an additional adhesive in the patch box to apply overtop of the patch.

Date	Dose	Frequency

Generic Name: Furosemide

Brand Name: Lasix®

Dosage Form(s): IV Solution, Oral Solution, Tablets; 20, 40 and 80 mg.

Use: Furosemide is a diuretic, which decreases the amount of water retained in the body by increasing urination. Because of this, they are commonly called “water pills”. Diuretics can be used to treat edema (fluid retention and swelling from excess body water) and hypertension (high blood pressure).

Side Effects

Common: Dizziness and lightheadedness (especially during the first few days as your body adjusts to the medication), nausea, sensitivity to sunlight, rash, loss of appetite or stomach upset, headache, increased thirst and dry mouth, increased urination, muscle cramps, and weakness.

Rare: Diarrhea, vomiting, indigestion, restlessness, blurred vision, rapid or irregular heartbeat, itching, unusual bleeding or bruising, joint pain or increased gout attacks, or ringing in the ears.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. Do not “double up” the dose to catch up.

Notes: Furosemide may lower the potassium level in your blood. If this happens, you may be prescribed potassium or encouraged to eat or drink more potassium-containing foods (example: bananas and orange juice). It can also make you more sensitive to sunlight. Use sunscreen and protective clothing when outdoors. Alcohol can intensify the side effects, especially dizziness.

How to take this medication:

- This medication can be taken with or without food. When you first start taking this medication, it may cause an increase in urine or frequency of urination. To prevent this from affecting your sleep, take the dose(s) early in the day. Avoid taking furosemide after 6 p.m.

Date	Dose	Frequency

Generic Name: Insulin

Brand Name: Lantus®, Humulin N® or Novolin N®, Novolog®, Humulin R® or Novolin R®, Levamir®

Dosage Form(s): 100 units / 1 ml

each person's dose is individualize for their blood sugars

Use: Insulin is a hormone used to treat diabetes mellitus (high blood sugar). Different types of insulin work at different times after injection. Their effects last for different amounts of time.

Side Effects

The symptoms of low blood sugar (hypoglycemia) include; a sudden cold sweat, dizziness, fatigue, shakiness, headache, rapid heartbeat, nausea, vision changes, mood changes, or confusion.

Symptoms of high blood sugar (hyperglycemia) include drowsiness, confusion, flushed face, rapid breathing, thirst, loss of appetite or increased urination. These are signs that your insulin dose needs adjustment.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions and missed dose: Check with your coordinator and/or pharmacist.

Notes: A bottle of insulin can be kept at room temperature for up to 28 days for most insulins. Check with your pharmacist for specific storage instructions for each type of insulin. To store insulin for a longer time, keep insulin a cold place, preferable in a refrigerator. Do not freeze insulin. Protect insulin from heat or direct sunlight.

Always check the appearance of your bottle of insulin. If you see any solid particles or if the insulin looks different than usual, discard the bottle and begin using a new bottle of insulin. Some types of insulin are cloudy.

An insulin reaction resulting from too low a blood sugar may occur if you take too much insulin, skip a meal or exercise too much. If this occurs, immediately drink or eat a sugar-containing product (orange juice, table sugar). If loss of consciousness occurs, call emergency medical care (911) immediately.

Monitor your blood sugar as prescribed and keep track of the results.

How to take this medication:

- Insulin must be injected. First gently rotate the vial to mix. Draw up the proper amount into the syringe. Check the dose carefully. If there is an air bubble, push the insulin back into the bottle, and draw up your dose again. Inject each dose of insulin in a different area to prevent skin rash, irritation, or redness.

Date	Dose	Frequency

Generic Name: Metformin

Brand Name: Glucophage® or Glumetza® XR (extended-release tablets)
Dosage Form(s): Tablet: 500, 850, 1000mg tablets
Extended-Release Tablet: 500, 750, 1000mg tablets

Use: Metformin is considered an oral hypoglycemic. It acts to increase insulin sensitivity or your cells ability to use insulin. It will decrease the absorption of glucose in your intestines and lower your blood sugar from foods. It will decrease your livers ability to produce glucose.

Side Effects

Common: Diarrhea is the most common side effect. Diarrhea will decrease the longer you take the medication. The occurrence is reported to be less with the XR formulation. Also, Nausea, vomiting, gas, indigestion, are common side effects.

Rare: Breathing difficulties or shortness of breath, weight loss, signs of low blood sugars, lower b12 levels, fatigue and muscle pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 6 hours of the time for your missed dose of regular release tablets and you are taking them twice a day, take your dose as soon as you remember it and resume your usual dosing schedule. If you are using the XL tablets and are taking them once a day, take the medication as soon as you remember it. Do not “double up” the dose to catch up.

Notes: The empty XR tablet shell may appear in the stool. Do not be concerned; the medication has already been absorbed into your body. Let your doctors know that you are taking metformin if you experience an increase in your creatinine or if you are receiving contrast for a study as your renal function could be compromised for a short period of time.

How to take this medication:

- The regular release tablets should be taken with food. The XR or extended-release tablets should not be crushed or chewed. The XR formulation should be taken with the evening meal.

Date	Dose	Frequency

Generic Name: Glipizide

Brand Name: Glucotrol® or Glucotrol XL® (extended-lasting tablets)

Dosage Form(s): Tablet: 5 and 10mg tablets

Extended-Release Tablet: 2.5, 5 and 10mg tablets

Use: Glipizide is considered an oral hypoglycemic agent that causes your pancreas to release more insulin in response to elevated blood sugars.

Side Effects

Common: Signs of low blood sugar – seek immediate medical treatment.

Rare: Nausea, diarrhea, indigestion, constipation, rash, and muscle pain.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 6 hours of the time of your missed dose of regular release tablets and you are taking them twice a day, take your dose as soon as you remember it and resume your usual dosing schedule. If you are using the XL tablets and are taking them once a day, take the medication as soon as you remember it. Do not “double up” the dose to catch up.

Notes: The empty XR tablet shell may appear in the stool. Do not be concerned; the medication has already been absorbed into your body.

How to take this medication:

- The regular release tablets should be taken 30 minutes before a meal. The XL tablet should be taken before breakfast. Do not crush or chew the XL tablets.

Date	Dose	Frequency

Generic Name: Aspirin

Brand Name: Anacin®, A.S.A.®, Ascription®, Bayer®, Bufferine®, Ecotrin®, Easprin®, Empirin®, and others

Dosage Form(s): Tablets: 325 mg, 81 mg and others

Use: A low dose of aspirin is used as a “blood thinner” to prevent blood clots. In higher doses, aspirin is used to relieve pain, reduce fever, and decrease inflammation. Aspirin is also effective in reducing the risk of stroke and heart attack.

Side Effects

Common: Upset stomach, heartburn, loss of appetite, or nausea.

Rare: Vomiting, diarrhea, confusion, drowsiness, severe stomach pain, unusual bruising, bloody or black stools, bleeding from the stomach, kidney failure dizziness, hearing loss, or ringing in ears. Stop taking aspirin if hives, rash, swelling, difficulty swallowing or breathing develops. This is a sign that you are allergic to aspirin.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within twelve hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Avoid drinking alcohol when taking aspirin. Alcohol can also thin the blood.

When aspirin is exposed to moisture or becomes old, it can develop a strong vinegar-like odor, and should not be used.

How to take this medication:

- Take this medication with food, milk or a large glass of water to reduce stomach irritation. Do not take dosages higher than 325mg daily. This may increase your risk of kidney failure.

Date	Dose	Frequency

Generic Name: Simvastatin

Brand Name: Zocor®

Dosage Form(s): Tablet: 5, 10, 20, 40, and 80mg tablets

Use: Atorvastatin lowers bad blood cholesterol which is the LDL, lowers total cholesterol and triglycerides, and to a small extent increases good cholesterol or HDL. Simvastatin is considered a “statin” drug.

Side Effects

Common: Muscle or joint pain, flu-like symptoms, increases in liver function tests, and headache.

Rare: Constipation, stomach pain, nausea, darkening of urine, fatigue and rash.

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking. They will can check for interactions. Many antifungal medications and antiviral medications interact with statin drugs. Please tell your doctors if you are started on these types of medication even for a short period of time.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within 12 hours of the time for your missed dose, take your dose as soon as you remember it and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Avoid grapefruits or juices containing grapefruit while taking this medication. People that are pregnant or are planning to become pregnant should not take this medication. Please contact your doctor if you have muscle or joint pain or a change in the color of your urine.

How to take this medication:

- May be taken with or without food.

Date	Dose	Frequency

Generic Name: Docusate

Brand Name: Colace® and others
Dosage Form(s): Oral Solution, Tablet and Capsule 100 mg (and others)

Use: This medication is used to treat and prevent constipation (dry or hard stools). It works by incorporating water and fat into your stool.

Relief is usually obtained in 1-2 days after the first dose, but it can take up to 3-4 days. Notify your coordinator if you have no bowel movement for 5 days or if you develop diarrhea.

Side Effects

Common: Stomach ache, abdominal pain or cramping, nausea, vomiting.

Rare: Skin rash, rectal bleeding, dehydration, or loss of essential nutrients (muscle cramps, muscle weakness or dizziness).

If any of these side effects continue or become bothersome, inform your doctor.

Drug interactions: Tell your doctor or pharmacist about any prescription or over the counter medication you are taking, so they can check for interactions.

Missed Dose: If you miss a dose, take it as soon as remembered. If it is within two hours of the time for your next dose, skip the missed dose and resume your usual dosing schedule. Do not “double up” the dose to catch up.

Notes: Using this medication for a long time may cause the loss of normal bowel function or laxative dependence.

To prevent constipation, drink plenty of fluids, include fiber in your diet, and exercise regularly.

How to take this medication:

- This medication can be taken with or without food.
- Drinking 4 to 8 glasses of fluid daily will increase the effectiveness of Docusate

Date	Dose	Frequency

Delayed Graft Function

There are times when a transplanted kidney may not work initially; this is known as Delayed Graft function (DGF). Dialysis may be necessary while the transplanted kidney is not working. It is difficult to predict how long you may require dialysis. Signs that your kidney is beginning to function include an increase in your urine output and a decrease in your creatinine. If you are discharged from the hospital and you have DGF, it is very important to have lab work done frequently so that the transplant surgeon can monitor your progress. Rejection can occur in a DGF kidney; therefore, kidney biopsies will be necessary, as determined by the transplant physician.

Rejection

Your immune system recognized your transplant as foreign and tried to attack it through a process known as rejection. The first episode of rejection can occur as early as 7 to 10 days after surgery. The chances of rejection diminish with time, but may occur at ANY TIME following transplantation. If rejection is diagnosed and treated early, it can usually be reversed. Therefore, it is important you report any adverse or abnormal symptoms to the transplant office immediately at 412-360-6155.

Important facts about rejection:

- Rejection does not necessarily lead to loss of your transplant
- You may feel perfectly well without any signs or symptoms and still experience rejection
- Rejection may be acute, occurring suddenly
- Rejection may be chronic, occurring slowly over time
- If not treated, rejection will worsen
- Rejection can occur at any time
- Early detection of rejection improves response to treatment

Recommendations for early detection:

- Have laboratory testing as recommended by your transplant team
- Make sure that your transplant coordinator receives your results promptly
- Take your medications as prescribed
- Report sign of rejection immediately

Signs and symptoms of kidney transplant rejection may include:

- Fever
- Decreased urine output
- Pain or tenderness over the site of the transplant
- Fatigue
- Fluid retention resulting in weight gain
- Increased blood pressure
- Increased creatinine level

Post-Transplant Diabetes Mellitus (PTDM)

Occasionally, a patient may develop diabetes after transplantation because of the immunosuppression. This type of diabetes is usually but not always temporary. When we review your lab results, we will monitor your fasting blood sugar (glucose) for abnormalities. If we notice your fasting glucose is higher than normal, we may request more frequent laboratory studies to monitor your blood sugar. If the glucose remains elevated, you may require hospitalization for insulin therapy. Usually, after your immunosuppressive medication doses are adjusted, we will be able to reduce and eventually discontinue your insulin. Some patients may require oral medication until their glucose returns to normal. While your glucoses are elevated, you will have to follow a diet to limit foods high in sugar and calories. Dietary counseling will be provided. Home glucose monitoring may be necessary.

Fever

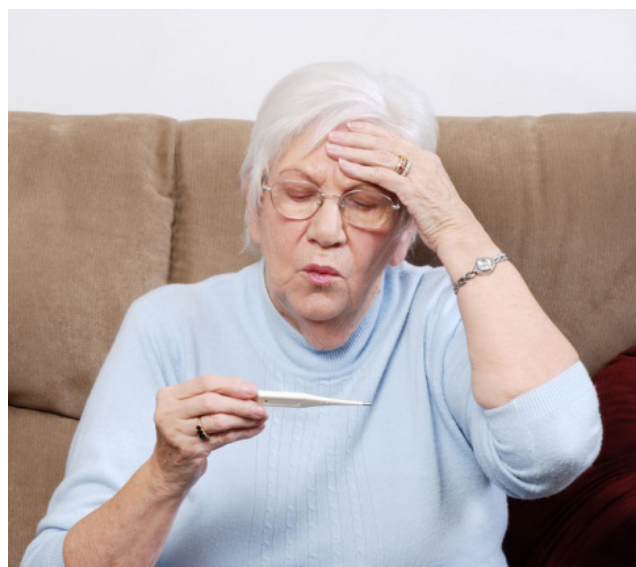
After your transplant, you will be taking medications to suppress your immune system. As a consequence, you will be more susceptible to infections. A fever may be an early sign of an infection and must be investigated thoroughly and promptly. We recommend that you check your temperature any time you feel ill, hot or have shaking chills.

IF YOU HAVE A LOW GRADE TEMPERATURE OF 100° F (37.8° C) FOR MORE THAN 24 HOURS, OR IF YOU DEVELOP A SUDDEN HIGH FEVER OF 101° (38.3° C) OR HIGHER, YOU MUST NOTIFY YOUR LOCAL PHYSICIAN AND/OR THE TRANSPLANT OFFICE (412-688-6155) IMMEDIATELY.

Your transplant coordinator will advise you regarding your fever. Your symptoms and physical condition will help decide if further testing or treatment is necessary. A careful evaluation is essential to determine the cause of the fever and provide appropriate treatment. You may be advised to see your doctor or to go to the hospital emergency department.

DO NOT TAKE TYLENOL OR ANY OTHER MEDICATION FOR A FEVER. THEY WILL LOWER THE TEMPERATURE WITHOUT TREATING THE INFECTION.

To prevent dehydration caused by a fever, remember to drink extra fluids, preferably, water, juice, or ginger ale. Avoid beverages with caffeine, as these may contribute to dehydration.



Vomiting and Diarrhea

Vomiting and diarrhea can lead to dehydration and decreased absorption of your medications, which may put you at risk for rejection. Prolonged vomiting and diarrhea is a cause for concern and needs to be evaluated. Some medications, including Cellcept®, can cause diarrhea. However, do not adjust any medication without discussing it with your doctor or transplant coordinator.

If vomiting occurs, we recommend that you do not immediately eat or drink. You may want to rest your stomach for approximately one hour. If you vomit within one hour of taking your medications, we suggest that you wait approximately one to two hours before repeating the dose.

Diarrhea (liquid stools) requires diet modification. We suggest that you avoid high fiber foods, milk products, and caffeine. Drink enough fluids to prevent dehydration. We recommend water, juice, or ginger ale.

If vomiting and/or diarrhea continue for more than twelve to twenty-four hours we recommend that you contact your doctor or transplant coordinator. Hospitalization for intravenous fluids, medications, and testing may be necessary.

Exposure to Childhood Diseases

Chicken pox, caused by the varicella virus, can be a very serious disease in an immunosuppressed patient. If you are exposed to chickenpox, call your transplant coordinator immediately. Even if you have had chicken pox in the past, you may contract the virus again if your level of immunity is low. People with chicken pox can be contagious as early as five days before the rash develops.

If you have never had chicken pox or you have a low level of immunity, our doctors may recommend medication to provide temporary protection. This medication is only effective if given within the first ninety-six hours of exposure.

Once you have had chicken pox, the virus remains inactive in your body forever. It can flare up at a later time in the form of red blisters, called shingles (herpes zoster). You need to contact your transplant coordinator any time you suspect you may have shingles. If you do have shingles, a medication called acyclovir (Zovirax) or Valcyte may be ordered. If you are already taking acyclovir or valganciclovir, you may need to receive it intravenously or have the oral dose increased.

If you are exposed to someone with shingles, you will need to contact your transplant coordinator. If you have no immunity to the varicella virus, our doctors will make recommendations for preventive medication.

DO NOT TAKE THE SHINGLES VACCINATION IT IS A LIVE VIRUS.

Epstein-Barr Virus

Epstein-Barr virus (EBV) is an infection that can present as mononucleosis, or of greater concern as a lymphoproliferative disease. Post-transplant lymphoproliferative disorder (PTLD) is a cancer-like condition that occurs in a small percentage of transplant recipients. Symptoms of EBV infection may include swollen lymph nodes, fever, or fatigue. Any of these symptoms should be reported to your transplant coordinator or transplant surgeon as soon as possible.

Early diagnosis and treatment are critical. The diagnosis may be determined by a biopsy of a swollen lymph gland, if present. Additional testing may be required. Therapy usually includes reduction or discontinuation of immunosuppression and the use of anti-viral medications. For many patients this usually results in regression of the disease. Once the disease is in remission, the immunosuppressive medications may be resumed.

Cytomegalovirus

Cytomegalovirus (CMV) is the most commonly seen viral infection in transplant recipients. CMV infection is characterized by flu-like symptoms. These symptoms may include fever, fatigue, nausea, vomiting, diarrhea, decreased appetite, abdominal pain or burning, generalized achiness, and/or a decrease in the white blood cell count. Please report any of these symptoms to your transplant coordinator. When CMV is suspected, blood tests can be done to determine if the infection is present. Additional testing may be necessary to confirm the diagnosis. CMV can affect the kidney, liver, eyes, lungs, and gastrointestinal tract.

Treatment for CMV is with intravenous ganciclovir (Cytovene®). The length of treatment depends upon the severity of the infection and your response to the medication. The first dose of ganciclovir is usually initiated in the hospital. It may not be necessary for you to stay in the hospital for the entire treatment. Many patients and families are taught to administer the medication at home. Following the completion of intravenous therapy, you may be prescribed oral ganciclovir or Acyclovir (Zovirax). Symptoms of CMV can present at any time and may occur more than once.

Pneumocystis Carini Pneumonia

Pneumocystis carinii pneumonia is a serious illness that can be life threatening in the immunosuppressed patient. Symptoms may include fever, dry cough, and shortness of breath, chest discomfort, and fatigue. Because of the rapidly progressive nature of the disease, it is important that you notify your transplant coordinator immediately should you experience these symptoms.

If Pneumocystic pneumonia is suspected, you will need to be admitted to the hospital, and treatment with intravenous trimethoprim sulfamethoxazole (Bactrin® or Septra®) or pentamidine will be initiated. Diagnostic procedures include chest x-ray and bronchoalveolar lavage (BAL).

Pneumocystic pneumonia rarely occurs today because of the routine use of prophylactic trimethoprim sulfamethoxazole (Bactrim® or Septra®) or pentamidine inhalation therapy. We recommend that you remain on this prophylactic regime indefinitely. If your local doctors suggest discontinuing any of these prescribed drugs, please inform your transplant coordinator immediately.

Candida Infections

Candida albicans is a fungal infection that may be seen in immunosuppressed patients. Typical sites of a candida infection are the mouth and esophagus, where it typically appears as white, patchy areas that may be painful or cause difficulty in swallowing. A candida infection of the mouth is commonly called thrush. Candida infections can also occur in the urine, respiratory tract, a wound, or more seriously, in the bloodstream.

If you experience symptoms of thrush, please contact your transplant coordinator immediately. Early diagnosis and treatment of candida infection are important to prevent the disease from oral preparations to intravenous therapy. Hospitalization may be necessary, depending on the extent of the disease.

Nystatin (Mycostatin®) is routinely prescribed to prevent oral and esophageal candidiasis. Initially, it will be necessary for you to take four doses per day. Mycostatin is usually discontinued 3-4 months after transplantation. Occasionally, it is necessary to resume this medication if a candida infection develops. It may also be prescribed if you are given additional immunosuppressive medications for the treatment of rejection.

Contact with Pets

Animals can harbor organisms that may be harmful to the transplant recipient. However, we do not ask that you give away your house pets. We do recommend:

- Washing your hands with an antibacterial soap after touching pets or other animals.
- Have someone else care for sick pets
- Someone else should clean up after the pet. This includes changing the kitty litter and cleaning the bottom of the bird cage and chicken coops. Bird droppings often carry fungi that are dangerous for immunosuppressed patients.
- Avoid contact with animal urine, feces, and vomitus.
- Do not let your pets outside. Cats in particular may acquire infectious diseases that can be transmitted to humans.



Preventing Infection

Your immunosuppressive medications, which are necessary to prevent rejection, reduce your ability to fight infections. This does not require you to avoid contact with people. By making some changes in your activity and life style, you can significantly reduce your risks of acquiring infections. You must consider the risks, remembering that it will be easier for you to acquire an infection and harder to fight it off.

Various recommendations are given below. However, new risks for infection may present themselves at any time.

Some actions you can take to decrease your risk of infection include:

- Maintain your general health with proper nutrition, rest, exercise, and stress reduction.
- Avoid people with infections, especially those with active infections such as chicken pox, mumps, measles, mononucleosis, tuberculosis, colds, or flu.
- Medications to prevent infection should be taken as prescribed, e.g., Bactrim, Acyclovir.
- Call your transplant coordinator with any signs of infection.
- Take the recommended antibiotics before and after dental work (if appropriate) or other invasive procedures.
- Follow the recommended food safety guidelines.
- Practice good hand washing, especially before eating, after touching objects that carry micro-organisms (money, doorknobs, public telephones), and after using the bathroom. Remember to scrub with soap for at least 15 seconds, rubbing between fingers.
- Avoid composts piles, construction sites, and damp hay. Avoid plants, fruits, and vegetables that are decaying.
- Wear gloves and mask when you are involved in activities such as gardening, to prevent exposing small cuts in your hands to potentially dangerous microorganisms.
- Wear shoes when walking outside to prevent exposing cuts in feet to microorganisms in soil.
- Cover your body, including arms and legs, when hiking.
- Avoid touching your eyes, nose, and mouth if your hands are not clean.
- Do not receive any live vaccinations. Avoid anyone who has received an oral polio vaccine for eight weeks. You may call your transplant coordinator to check if a vaccine is safe.
- Receive a tetanus shot as needed (animal bites, dirty cuts).
- Receive a flu shot yearly. These are not live vaccines. Do not receive the nasal spray flu vaccine which is a live virus.
- The pneumonia shot should also be received but check with your physician the date you last received this shot. Currently there are 2 different pneumonia injections.
- Do not share razors, toothbrushes, or eating and drinking utensils.
- Avoid drinking well water. Use bottled water or boil water for 10 minutes if there is a question of contamination.
- Practice safe sex.

Laboratory Testing

Laboratory testing is used to monitor the function of your transplant. Often a change in your lab results is the first indication that a problem may exist. For this reason, we strongly recommend that you always have your laboratory testing done as ordered by your transplant physician. If you feel well and do not have your blood work drawn, causing a delay in follow-up, this can lead to complications that may be difficult, if not impossible to resolve. Obtaining lab work routinely is essential in the early detection and treatment of possible problems.

The frequency of laboratory testing will depend upon your progress. Initially, you will be obtaining labs either weekly or twice a week. Once your transplant function is stable, you will require laboratory testing less often. Your individualized schedule will be determined by the transplant physician. Please be aware that we will always require lab work at least monthly. In addition, anytime a change is made in your immunosuppression, you will be required to check labs weekly until further notice.

After the labs are reviewed by your transplant physician, you may be contacted regarding medication changes, a request to repeat your laboratory studies, a review of your medication regimen, or other additional instructions. We will not call if your lab results are stable. Please feel free to call your transplant coordinator should you have any questions.

General Instructions for Laboratory Testing

- Fasting prior to blood work is usually required for all patients, but it is especially important for diabetics.
- ALWAYS TAKE YOUR MEDICATION AFTER THE LABS HAVE BEEN DRAWN.
- If you mistakenly take your Prograf® or cyclosporine before your labs are drawn, please notify your transplant coordinator.
- Anytime a change in your immunosuppression is ordered by your transplant physician, you will be required to have your blood work checked every week for three consecutive weeks.

Laboratory Values

Albumin – (normal range 3.5 – 5.0 mg/dl) a blood protein manufactured by the liver.

Amylase – (normal range <1—IU/L) enzyme secreted by the pancreas.

Bilirubin – (normal range 0.3 – 1.5 mg/dl) a breakdown product of hemoglobin. An increased level may reflect breakdown of the red blood cells or liver disease.

Blood Urea Nitrogen (BUN) – (normal range 6- - 20 mg/dl) a breakdown product of protein. An increased BUN may be due to kidney disease or from medications.

Calcium – (normal range 8.6 to 10.5 mg/dl) a mineral which comes from bones. An adequate calcium level is necessary for good bone strength, strong heartbeat, and normal function of muscles and nerves).

Cholesterol - (normal range 150- 200 mg/dl) a fatty substance used as a building block. Elevated levels can be associated with an increased risk of heart disease.

Creatinine – (normal range .5 – 1.4 mg/dl) a muscle breakdown product which is excreted by the kidneys and is a useful measure of kidney function. An elevated creatinine may indicate rejection or toxicity in kidney transplant recipients.

GGPT – (normal range <44 IU/L) an enzyme found in the liver and gallbladder.

Glucose – (normal range 75 – 110 mg/dl) the level of sugar in the blood. Prograf® and steroids may temporarily increase glucose levels.

Hemoglobin – (normal range, female 11.7 – 15.7 g/dl – normal range, male 13.3 – 17.7 g/dl) component of the blood which carries oxygen to body tissues. A decreased level may be related to blood loss or renal failure.

Hematocrit – (normal range, female 35- 47%, male 40-52%) percentage of blood that is composed of red blood cells. A decreased level may be related to blood loss or renal failure.

Lipase – (normal range <200 IU/L) an enzyme secreted by the pancreas.

Platelet – a type of blood component necessary for blood clotting.

Potassium – (normal range, 3.6 – 5.0 mEq/L) an electrolyte found in body cells. Diuretics or “water pills” may decrease the level. Prograf® may increase the level.

(AST) SGOT – (normal range <34 IU/L) a non-specific liver enzyme.

(ALT) SGPT – (normal range <37 IU/L) a liver enzyme that is more specific.

Triglyceride – (normal range 0 – 250 mg/dl) fat components formed by the body in the blood. If elevated, you should follow a low fat, low cholesterol diet.

Uric Acid – (normal range <8.5 mg/dl) a breakdown product of purines. High levels are associated with gout.

White Blood Cells (WBC's) – (4.5 – 11.0) cells in the bloodstream that fight infection. An elevated level can be caused by an infection. A decreased level may be caused by some medications or viruses.

Post Op Activities

Sexual Activity

You may resume sexual activity when you feel well enough. If you have any concerns, please discuss them with your physician. To prevent urinary tract infections, women should empty their bladder before and after sexual intercourse. Women should always wipe from front to back after urination and bowel movements.

Safe Sex

As an immunosuppressed transplant recipient, you should protect yourself from sexually transmitted diseases. When used properly, latex condoms can greatly decrease the transmission of microorganisms spread during sexual contact. This is particularly important if you are intimate with a new partner.

Birth Control

The choice to have children is an important decision that is influenced by a number of factors that should be discussed with your spouse, transplant physician, local doctor, and obstetrician/gynecologist. Female patients generally resume their menstrual cycle after transplantation. High dose prednisone may stop the menstrual flow, but ovulation (the time when you are fertile) will continue. Therefore, you could become pregnant even though you are not yet having normal periods.

Pregnancy

The transplant surgeons do not recommend trying to become pregnant during the first one to two years after transplantation. It is important that you seek prenatal care both before and after you become pregnant.

Contact your transplant coordinator if you are planning to or become pregnant. Your obstetrician may also call us as needed. It is important that you seek prenatal care both before and after you become pregnant.

A number of female transplant recipients have delivered healthy babies. There is a greater chance of premature births, low birth weights, and cesarean sections. There is also a risk of impaired transplant function and/or complete failure of the transplant. The effects of immunosuppression to the fetus are not yet known. It is strongly recommended that you do not breast feed. This will avoid passing on the medications to the baby through the breast milk.

Activity and Exercise

These are guidelines you should follow regarding activity after your transplant. You are encouraged to discuss any specific concerns with your transplant surgeon.

Lifting

For your protection you should not lift or carry anything that weighs more than 5-10 pounds for 3 months after your surgery. For example, an average bag of groceries, a small child, a pet, or a laundry basket may weigh 10 pounds. Temporary modifications in your lifestyle will be necessary. You can avoid lifting a small child by sitting down and have someone hand the child to you. You should also avoid activities that cause excessive strain, such as vacuuming, mowing the lawn, or moving furniture. Performing these activities may cause a hernia to occur. This may require additional surgery. After this three month period, you may resume normal activities as tolerated.

Exercise

You should maintain a regular exercise program that is suited to your individual needs. Active physical exercise is necessary to maintain your normal weight. Walking is an excellent form of exercise and can be started immediately after your transplant. If information is necessary about a particular exercise, consult your transplant surgeon.

Activities with High Risk of Injury

Activities with a high risk of injury, such as skiing, playing football, or motorcycling, should be avoided for the first year after transplantation. During this time, your immunosuppression doses will be the highest. If you are injured or require surgery, you will be at an increased risk for infection or other complications. We suggest you discuss your interest in participating in a potentially high-risk activity with your transplant surgeon.

School or Work

Following your transplant, you should be able to return to your normal lifestyle, i.e., the level of activity you had before you developed renal failure. Most people are able to return to school or work. You should discuss your plans with your transplant physician. Upon your request, we can provide a release to return to work or to school.

Driving

After your transplant surgery, you may return to driving when you feel comfortable and as long as you are not taking pain medication.

Your reflexes, judgment, and vision may be affected by the medications you are taking. Do not drive if you feel any of these are impaired. It is recommended to have a licensed driver with you the first time you drive.

Swimming

Swimming may be permitted after you have fully recovered from your transplant surgery and your wounds are healed. Please keep in mind that if you have intravenous lines, drains, or catheters in place, you may not be permitted to resume swimming until they are removed. Please consult your transplant physician before engaging in any water sports.

Swimming in chlorinated pools or salt water is the safest. We recommend that you avoid public hot tubs. Beware of waters posted for “no swimming.” These may contain infectious microorganisms, toxic chemicals, dangerous vegetation, or sewer overflow. You can check with your local health department, which often tests water for safety. If in doubt, do not enter the water.

Your Doctor At Home

Your local doctor has been kept updated will regarding your progress since your transplant. Your transplant coordinator has been in contact with your referring VA healthcare team regarding hospitalization at the VA Pittsburgh Healthcare System. The information included will a list of current medications and lab work needed including frequency. We also inform them of any extra appoints needed for such things as removal of staples, JP drain or ureteral stent. We recommend that you contact your doctor as soon as possible after returning home so he/she can be familiar with your present condition and reevaluate you when changes occur. It is very important that you maintain follow-up with your doctor.

The transplant physician will manage your immunosuppressive medications as long as your transplant is functioning. This is done by monitoring your laboratory results and clinical condition along with your doctor. You or your doctor should feel free to contact us if you are having side effects from your immunosuppressive medications.

Your doctor may manage your other medications, but we ask that you contact your transplant coordinator when:

- A new medication is started, either prescribed or over-the-counter
- Any medication is discontinued

Your doctor can best determine how often you need to be examined. After your initial recovery from your transplant, this should be at least yearly, but may be more than often as indicated by your medical condition.

Ophthalmologist

Routine eye examinations will be very important after your transplant. Deltasone® (Prednisone) may cause a change in your eyesight or blurry vision. For this reason, routine exams should not be done until 3 months after your transplant. Your medications will change frequently during this time, and it will be difficult to obtain a proper exam. You should inform your eye doctor of all of your medications especially Deltasone® (Prednisone). Visual changes may be related to the dosage of Deltasone® (Prednisone) prescribed. Refer to your ophthalmologist for guidance when deciding the appropriate time to change your corrective eyewear.

Cataracts and glaucoma are eye problems that may develop as a result of Deltasone® (Prednisone). Since routine screening for these problems may not be part of all routine eye examinations, you may have to specifically request that these examinations be performed.

Your ophthalmologist can best determine how often you need to be examined. This should be at least yearly, but may be more often as indicated by your ophthalmologist.

Dentist

Routine dental care should be maintained. If you have your teeth cleaned, filled, or require dental surgery, such as a tooth extraction, or a root canal, you will need to tell your dentist that you need antibiotics to prevent infection. Your dentist can follow the protocol recommended by the American Heart Association (AHA). If antibiotics are recommended we suggest the following:

- Amoxicillin 2 gm 1 hour before dental procedure
- The drug of choice is Amoxicillin. If you are allergic to Amoxicillin or Penicillin, the following has been recommended:
- Clindamycin 600 mg 1 hour before dental procedure
- You may have your dentist or doctor order the medication for you. It is important to remember that some of the medications commonly prescribed for dental procedures interfere with your immunosuppression and should NEVER BE USED. These may include:
 - Erythromycin
 - Ibuprofen
 - Aspirin
 - Percodan®

Gynecologist

Female patients should see their gynecologist yearly for an examination including a pap smear. A baseline mammogram should be done for patients over 35 or as recommended by your gynecologist. We also advise that all women perform monthly breast self-examination.

Vaccines

There are two types of vaccines-live (weakened) and dead. Live vaccines can be dangerous for immunosuppressed patients. When you receive a live vaccine, a live, weakened virus is introduced into your system. Since your immune system is suppressed, it may not be able to protect you from the virus. You should never receive a live virus vaccine after your transplant. You must also avoid close contact with a person receiving a live virus vaccine. Examples of close contact are changing diapers and kissing. The virus is found in the saliva and stool for up to eight weeks. Examples of live vaccines are: oral polio, measles, mumps, rubella, nasal flu vaccine and Varivax (Shingle vaccine).

Dead vaccines are safe for transplant patients to receive. Examples of dead vaccines are the flu vaccine, diphtheria, tetanus, and pertussis (DTP), hepatitis B, and pneumovax.

Influenza Vaccine

The flu can be very serious, particularly in immunosuppressed patients. We recommend a flu shot (dead virus vaccine) yearly. If you are allergic to eggs, you should not receive the flu shot.

Hepatitis B Vaccine

Patients who are hepatitis B antibody negative may choose to receive the hepatitis B vaccine. The vaccine protects you from getting hepatitis B.

Pneumovax Vaccine

You may receive the pneumovax vaccine, which can prevent many types of pneumococcal pneumonias.

Polio Vaccine

There are two kinds of polio vaccines. Oral polio vaccine is the one most often given to children. It is given by mouth as drops and contains the live virus. The oral polio vaccine should not be given to transplant patients. Transplant patients may receive the inactivated (dead virus) polio vaccine, which is administered by injection. If you have close contact with someone who requires the polio vaccine, it is recommended that the person to be vaccinated also receive the inactivated, (dead virus) polio vaccine by injection.

You must avoid close contact with a child who has received the oral polio vaccine for a total of eight weeks after the vaccination.

Chicken Pox Vaccine

Varivax is a vaccine to prevent chicken pox (varicella zoster). It contains the live virus and should not be given to transplant patients. Avoid close contact with someone who has received the Varivax vaccine. There is some evidence that children who develop a rash after receiving the vaccine may be capable of transmitting the chicken pox virus.

Updating Personal Information

Please contact your transplant coordinator with any changes in your name, address, telephone number, laboratory, or local physicians. This information is essential in order to maintain ongoing communication regarding your care.

Travel

If you are planning to be away from home for an extended period of time, we recommend that you leave a number where your coordinator can reach you. If this is not feasible, you may designate another individual with whom your coordinator can leave a message if necessary.

When traveling, be sure to take an adequate supply of medications. This should include enough medication to cover any unexpected delays that may occur. We recommend that you divide your medication into two areas in case of loss or theft. Pack at least half of your medications in your carry-on baggage. Avoid packing the medication in your checked luggage. This will minimize the risk of missing your medication.

When traveling to foreign countries, we advise you to check with the Centers for Disease Control International Travelers Hotline at (412) 332-4559 or your County Health Department for current recommendations. The Allegheny County Health Department may be contacted at (412) 568-8060.

When traveling outside of the United States, or other industrialized countries, contaminated food and water can be a cause of infection leading to intestinal illness. It is safest to drink canned or bottled beverages, or boiled water, avoiding ice, in areas with questionable sanitation. If uncertain, do not use the tap water to brush your teeth.

Uncooked fruits and vegetables, salads, unpasteurized milk, milk products, and fruit juices, raw meat, and shell fish should be avoided. Fruit that you peel is generally safe, as is cooked food that is still hot. Areas of high risk include the developing countries of Africa, the Middle East, and Latin America. The lowest risks exist in private homes; the greatest risk is in food from street vendors.

If you develop traveler's diarrhea, you should consult a physician. To prevent dehydration, we recommend salted crackers, decaffeinated soft drinks, and bottle pasteurized fruit juice. Doxycycline may be prescribed to prevent as well as treat traveler's diarrhea.

Smoking

In order to maintain your health, we recommend that you do not smoke. Smoking has been found to cause multiple health problems, which include heart disease, lung cancer, emphysema, and stroke. There are several methods available that can help you to quit smoking. We encourage you to discuss this with your transplant surgeon, your nephrologist, or your family doctor to select the method that is best for you.

Donor Letter

If you would like to communicate with the donor family, you may write an anonymous letter. In order to maintain your confidentiality and that of the donor family, please do not include your name, address, or any identifying information. The letter should be sent to our local organ procurement organization at:

The Center for Organ Recovery and Education (CORE)
204 Sigma Drive
RIDC Park
Pittsburgh, Pennsylvania 15238

You may call CORE at 1-800-366-6777 with questions.

Skin Care

A potential side effect of prednisone is acne. Listed below are recommended guidelines for good skin care:

- Wash your face thoroughly two to three times daily.
- Gently wash your face and other affected areas with a clean washcloth and use an antibacterial soap.
- Avoid soaps that contain creams and oil; these can aggravate acne.
- Shampoo hair frequently, and keep your hair off your forehead as much as possible.
- Avoid using base make-up if you have acne
If you continue to have problems with acne, please consult your transplant coordinator. Medication can be prescribed if necessary.

Sun Protection

Sun exposure may increase your risk of developing skin cancer and cataracts. Limit sun exposure, especially between the hours of 10 a.m. and 2 p.m. Apply sunscreen and lip protection with a Sun Protector Factor (SPF) of 35 or higher, and wear sunglasses that block ultraviolet rays. Hats and long-sleeved shirts can serve as protective clothing. Remember that ultraviolet rays are present on cloudy days and can also be reflected from sand, concrete, and snow. Avoid artificial tanning devices such as tanning salons and beds.

Notify your physician and/or transplant coordinator of any changes in your skin such as newly raised areas, changes in a wart or mole, non-healing sores, or discolored areas. We recommend that your skin be checked yearly by a dermatologist for signs of skin cancer.

Good Nutrition

Nutrition is a very important part of your recovery after transplantation. It can affect the healing process in many ways. The proper nutrients in adequate amounts can help prevent and fight infections. Good nutrition can help heal your surgical wounds, replenish lost body tissue, and give you strength and energy. Being well nourished can also help your medications work more effectively and, coupled with following the correct diet can decrease their side effects. A balanced diet containing a variety of foods from the basic fine food groups will provide the required amount of protein, vitamins, and minerals needed to get well and stay healthy. If you feel that you are unable to eat a well-balanced diet at this time, you may take a multivitamin pill. This supplement should supply 100% of the RDA level. Avoid taking large doses of multivitamins or single vitamin doses, unless prescribed by your physician. Always let your doctor know all the medications you are taking.

Nutrition Tips

Loss of Appetite

- Eat a variety of foods
- Eat frequent, small meals
- Have snacks available for between meals
- If you are hungrier in the early part of the day, plan your biggest meal then
- Eat in a relaxing, pleasant atmosphere. Arrange food attractively
- Do light exercise, such as walking, before a meal to stimulate your appetite

Feeling of Fullness

- Eat frequent, small meals
- Sip cool, clear beverages between rather than with meals
- Avoid foods that cause gas and bloating such as cabbage, broccoli, beans, onions and carbonated beverages
- Eat slowly
- Eat foods high in carbohydrate and protein rather than foods high in fat

Nausea and Vomiting

- Eat foods high in carbohydrates such as pretzels, toast, cereal, pasta and fruit
- Eat frequent, small meals
- Drink clear beverages like apple juice or flat gingerale. Have beverages between meals and spicy foods
- Limit fatty and spicy foods
- If the smell of food nauseates you, avoid foods with strong odors. Eat in well ventilated areas or ask other people to prepare food for you
- Rest after eating. Elevate your head and shoulders

Losing Weight

It is possible for transplant patients to gain an excess of weight. Many factors contribute to this, including certain medications (especially steroids), which may cause an increased appetite. Being overweight can lead to health problems such as high blood pressure, heart disease, and diabetes. A low fat, low cholesterol diet is encouraged to help prevent heart disease. Since fat is the highest calorie food consumed, decreasing fat intake will also control calories.

Tips for cutting fat and calories

- Cut down on butter, margarine, dressing, mayonnaise, gravy, dips, sour cream, and cream sauces
- Use low fat or skim milk, cheese, and yogurt
- Substitute “lite” margarine, mayonnaise, and dressing for regular, but remember they still contain some fat, so use sparingly.
- Select lean meat, chicken, and fish and broil, bake, and grill instead of frying in fat
- Avoid chips, buttery crackers, and rich desserts such as cakes, cookies, pies, muffins, and ice cream
- Trim fat from meats, remove skin from poultry
- Substitute:
 - low fat frozen yogurt or sherbet for ice cream
 - plain popcorn, pretzels, soda crackers for chips and nuts
 - baked potato for French fried
 - angel food cake, vanilla wafers, Fig Newton’s for high fat desserts
- Fill up on plain salads, vegetables, and low calorie beverages.

If you need further assistance, you may seek the services of a Registered Dietitian in a hospital, clinic, or private practice.

If you decide to enroll in a weight loss program, be sure it is one that promotes eating a well-balanced diet, changing eating behavior, and exercise, such as the program Weight Watchers offers. Avoid programs that promote:

- rapid weight loss
- very low calorie or “starvation” diets
- specific foods or nutrients as having magical qualities
- the use of liquid diet supplements to replace meals (unless approved by your transplant physician)
- “diet” pills

These types of diet programs may be very harmful for a transplant patient.

Basic Diet for High Blood Sugar

Occasionally certain medications (such as tacrolimus, cyclosporine, and/or steroids) or medical conditions, such as diabetes, may cause our blood sugar levels to become elevated. This is called hyperglycemia. The proper diet can help control hyperglycemia. The following are basic dietary guidelines to follow if your blood sugars are high. Sometimes hyperglycemia persists and becomes a permanent problem, and you need to take medication such as oral agents or insulin. If this happens you may need to take medication such as oral agents or insulin. If this happens you may need a more structured diet. In this case, call the dietitian so that he/she can plan a diet with you.

1. Eat a variety of foods to provide the nutrients that your body needs. Use the Food Guide Pyramid to choose from each of the fine food groups; protein, dairy, fruit, vegetable, and starch.
2. Eat three balanced meals per day, and snacks in between if needed or desired. Do not skip meals. If you are taking medications to control your blood sugar, you will need an evening snack.
3. Eat meals at about the same time each day and spread them apart; at least four to five hours between meals.
4. If you are overweight, lose weight. Your dietitian can help you learn more about healthful ways to lose weight.
5. If you do not need extra calories or do not need to gain weight, then follow a low fat diet. This is a more healthy and can decrease your risk of heart disease.
6. Choose foods high in fiber, such as bran cereals, whole grain breads, legumes (dried beans and peas), fresh fruits, and vegetables.
7. Do not use a lot of sugar or foods made with large amounts of sugar such as:

Sugar	sweet rolls	glazed meats	pop
jelly	cakes	candy	drink mixes
honey	pies	pudding	lemonade
jam	cookies	gelatin desserts	milkshakes
syrup	doughnuts	sherbet	chocolate milk
molasses	Danishes	ice cream	sweetened yogurt
sugared cereals		canned fruit in syrup	
8. Limit fruit juice to ½ cup servings and fruit to ½ cup or 1 medium piece per meal or snack.
9. You may use artificial sweeteners such as saccharin or aspartame or foods made with these. Look for foods labeled sugar free or no added sugar. Foods labeled dietetic or light may not be sugar free.

Special Considerations

You may need to restrict some foods because of side effects from your medications. Not everyone will have to avoid the same foods because not everyone is on the same medications. Also, everybody reacts to their medications differently.

Salt

Some medications prescribed after transplant may cause fluid retention. Fluid build up can be detected by sudden weight gain and the swelling of your hands and ankles. Certain medications may also cause your blood pressure to rise. If you are experiencing fluid retention or have high blood pressure, it may help to follow a low salt diet. See the “When you need to cut down on salt” section.

Sugar

Steroids can cause high blood sugar (blood glucose) levels by decreasing the body’s ability to utilize insulin properly. The proper diet can help control high blood sugar (hyperglycemia). If you have high blood sugars, follow the “Basic Diet for High Blood Sugar.” Sometimes hyperglycemia persists and becomes a permanent problem and you need to take insulin. If this happens, you will need a more structured “diabetic” diet plan.

Potassium

Some anti-rejection drugs may cause high blood potassium (K⁺) levels. If potassium in the blood gets too high, it can affect the way your heart beats. Your transplant coordinator or doctor will tell you if your level is higher than normal. If your level is high, please refer to the Potassium sheet included. It is important never to use salt substitute made with potassium chloride or foods made with it. Herb and spice mixes such as Mrs. Dash are allowed.

Calcium

This is not a restriction, but instead you must increase your calcium intake if you are on steroids. Chronic kidney disease and steroid use can cause calcium loss from bones. Three or more servings from the daily group each day can give your body the calcium it needs. If you cannot reach this amount, please ask your doctor to prescribe a calcium supplement. High calcium foods include: milk, yogurt, cheese, and dark green leafy vegetables.

If you have questions at any time, please feel free to call your transplant dietitian (412) 688-6000 extension 5778, or you can set up an appointment with the dietitian through the transplant clinic.

Food Safety

Individuals with weakened immune systems face special risks from foodborne diseases. Not only are they more likely to develop a foodborne disease, they are also more likely to develop a serious complication.

Who is vulnerable?

Many people with weakened immune systems have a chronic illness of some type, such as, cancer, kidney failure, chronic liver diseases, diabetes, or AIDS. Transplant patients are also at risk because their immune systems are purposely suppressed to prevent rejection. However, their risks can be controlled. Following basic rules of food safety, individuals at risk can help protect themselves whether they eat out or at home.

Protecting yourself when you eat out

The single most important thing to remember when you eat out is to never eat raw or undercooked foods of animal origin, e.g., raw beef, fish, or seafood. Eating raw oysters, for example, can cause serious problems. Raw oysters can contain a number of harmful organisms, including a particularly deadly bacterium, *Vibrio vulnificus*. For people with liver disorders, mortality rates from this disease can run as high as 50 percent. It is also important not to eat other foods raw, or even undercooked. That means no uncooked meat (like steak tartar), rare roast beef, undercooked hamburger, or raw fish. Also, avoid foods with raw or undercooked eggs, like Caesar salad, hollandaise sauce, some custards, or chocolate mousse. Soft cheeses should be avoided, and moldy foods must be discarded.

Foods should be well cooked

The basic rule is this: Foods should be well cooked. They should be served hot, not lukewarm. Cooking foods thoroughly destroys potentially harmful organisms. Not allowing foods to stand longer than two hours at room temperature helps keep them safe.

Cooking at home

According to the Centers for Disease Control and Prevention, one of the most significant causes of foodborne illness at home is “cross-contaminations.” Cross-contamination occurs when juice or blood from uncooked meat, poultry, or fish comes into contact with other foods via cutting boards, utensils, plates, counter tops or hands. Always wash everything with hot, soapy water.

A final word on a special concern

Recent data suggests that raw or undercooked eggs are a significant source of salmonella infection. This is important for individuals with weakened immune systems, especially those receiving chemotherapy, since they sometimes eat soft eggs as a protein source. Eggs need to be thoroughly cooked to be safe. Do not eat raw cookie dough or cake batter.

More questions

- Call the USDA Meat and Poultry Hotline at 1-800-535-4555, weekdays, 10 a.m. to 4 p.m., EST. Washington, DC residents call (202) 720-3333.
- For information about food safety, call the FDA Center for Food Safety and Applied Nutrition Hotline at 1-800-FDA-4010. Washington, DC residents call (202) 205-4314

Adapted from: FOOD NEWS FOR CONSUMERS, SPRING 1990.

Intake and Output

You may have been on a fluid restriction prior to your transplant. Now that you have a functioning kidney, it is important to drink enough fluids to prevent dehydration. Dehydration makes it difficult for your kidney to function properly, and you may experience an increase in your creatinine level. We recommend at least 2 liters of fluid per day, but try to limit fluids that contain caffeine and sweeteners. If may be necessary to increase your fluid intake to replace fluids lost through perspiration, vomiting, and/or diarrhea.

While you have been hospitalized, we have accurately measured the fluids that you have had to drink (intake) and the amount of urine that your kidney produced (output) – otherwise known as I and O. Listed below is a guide to help measure intake. In general, remember 30 cc = 1 ounce, then multiply the number of ounces x 30 to equal the total number of cc's. For example, a can of soda is 12 ounces of fluid.

12 ounces x 30 = 360 cc of fluid

Coffee/tea	one cup 6 oz = 180 cc
	one mug 8 oz = 240 cc
Water glass	8 oz = 240 cc
Juice glass	4 oz = 120 cc
Soda Pop	can 12 oz = 360 cc
	bottle 16 oz = 480 cc
	bottle 32 oz = 960 cc
Milk carton	oz = 240 cc

Since it is important to know how much urine your new kidney is producing, you must measure your urine output for approximately six weeks after transplantation. If you are away from home, you may estimate your urine output. Your intake should equal or slightly exceed your output.

On the pages at the back of this book, spaces are provided to record your I (intake) and O (output) daily. NOTE: Please ask your physician when you can discontinue these measurements during your outpatient clinic visits.

Phosphorus

Dairy foods like milk, cheese, and ice cream have the most phosphorus.

These foods are high in phosphorus.

Dairy foods

Milk
Cheese
Cottage cheese
Yogurt
Ice cream
Pudding
Custard
Cream soups
Casseroles with cheese
Milkshakes
Eggnog
Instant breakfast

Meats

Sardines
Lobster
Liver

Nuts & seeds

Nuts
Peanut butter
Pumpkin seeds
Sunflower seeds

Breads/whole grains

Bran muffins
Brown bread
Brown bagels
Brown rice

Cereals

Bran cereal
Bulgur
Fruit & fiber
Granola
Grapenuts
Life
Mini-wheats, frosted or plain
Oatmeal
Pearled barley
Ralston
Shredded wheat
Total
Wheaties
Wheat germ

Other

Colas
Chocolate
Cocoa
Caramel
Mushrooms
Dried fruit
Pizza
International coffees
Tang (especially grape)
Dr. Pepper
Pumpkin pie
Custard/cream pie

Magnesium Content of Some Common Foods

FOOD ITEMS	AMOUNT	MAGNESIUM CONTENT (MG)
Vegetables		
Spinach boiled	1/2 cup	79
Beets boiled	1/2 cup	31
Beet greens boiled	1/2 cup	49
Avocado	1 medium	70
Okra boiled	1/2 cup	47
Parsley raw, chopped	1/2 cup	13
*Black beans cooked	1/2 cup	121
Broad beans cooked	1 cup	73
Chick peas canned	1 cup	70
Hummus	1 cup	71
Black Eye Peas cooked	1 cup	91
Kidney beans cooked	1 cup	80
Lima beans boiled	1 cup	97
*Lima beans frozen boiled	1 cup	100
Mung beans boiled	1 cup	97
Pinto beans boiled	1 cup	95
Lentils boiled	1 cup	97
Nuts/Seeds		
Almonds	1 oz	86
Cashews	1 oz	74
Hazelnuts	1 oz	84
Peanuts	1 oz	49
Pistachio nuts	1 oz	45
*Soybean nuts	1/2 cup	125
*Pumpkin and squash seeds dried	1 oz	152
*Watermelon seeds	1 oz	146
Meats		
Chicken cooked	3 oz	25
Beef cooked	3 oz	18-25
Cereal and Grain Products		
*Kellogg's all-bran	1/3 cup	106
*100% bran	1/2 cup	134
Oatmeal cooked	3/4 cup	35
Pumpnickel bread	1 slice	22
Whole wheat bread	1 slice	11
White bread	1 slice	5

Sources of Calcium

FOOD	SERVING SIZE	CALCIUM (mg)
Tofu, firm	1 cup	516
Non-fat yogurt	1 cup	452
Corn meal, enriched, dry	1 cup	420
Low-fat yogurt	1 cup	451
Non-fat dry milk powder	¼ cup	377
Collard greens, frozen, boiled	1 cup	358
Ricotta cheese, part skim	½ cup	337
Sardines, with bones	3 oz	324
Skim milk	8 oz	302
1% milk	1 cup	300
2% milk	1 cup	297
Whole milk	1 cup	291
WONDER calcium fortified bread	1 slice	290
Buttermilk	1 cup	285
Tofu, soft	1 cup	276
Ice milk, soft serve	1 cup	276
Swiss cheese	1 oz	272
Minute Maid calcium fortified orange juice	6 oz	220
Cottage cheese, creamed	1 cup	211
Salmon, with bones	3 oz	204
Muenster cheese, natural	1 oz	203
Turnip greens, from raw	1 cup	198
Mozzarella cheese, part skim	1 oz	183
American cheese	1 oz	174
Ice cream	1 cup	170
Baked beans, homemade	1 cup	155
Pudding, prepared with milk	½ cup	150
Cottage cheese, 1% milkfat	1 cup	138
Feta cheese	1 oz	138
Parmesan cheese, grated	2 TBSP	138
Corn bread, from mix	1 piece	133
Figs, dried	5 medium	126
Swiss chard, cooked from raw	1 cup	102
Kale, cooked from raw	1 cup	94
Garbanzo beans, cooked	1 cup	80
Broccoli, cooked from raw	1 cup	72
Kidney beans, cooked	1 cup	62
Green beans, from raw	1 cup	58

With steroids need 1000 mg – 1200 mg / day

Potassium

Potassium is a mineral that helps keep your heartbeat regular and your muscles working properly. Certain medications and/or, poor kidney function may cause blood potassium (K+) levels to become too high and a low K+ diet is needed (≤ 2300 mg/day). You will not feel any specific symptoms if your potassium is high (the normal range is 3.5-5.0). You only need to restrict K+ in your diet if your blood levels are running high. To limit your intake of K+, follow the guidelines below. When cooking vegetables, use a lot of water and drain before serving. Drain canned fruits and vegetables and discard the liquid; add fresh water if needed for cooking. Avoid salt substitute (potassium chloride) or foods made with it.

AVOID THESE HIGH POTASSIUM FOODS (>200-250 mg/serving)		
Fruits	Vegetables	Other
Apricots	Artichoke Hearts	All bran type cereal
Avocado	Beans: adzuki	Ketchup (limit to 2T)
Banana	baked	Cereal with fruit & nuts
Cantaloupe	black	Chocolate milk
Dates	broad	Cocoa
Dried Fruits	butter	Coffee (limit to 2 cups)
Elderberries	kidney	Hot Chocolate
Figs (dried)	lima	Instant Breakfast
Guava	northern	International Coffees
Honeydew	pinto	Molasses
Kiwi	refried	Nuts (limit to 1 oz)
Mango	Carrot Juice	Peanut Butter (limit to 2T)
Nectarines	Brussel Sprouts	Salt substitute/Lite salt
Oranges	Falafel	Soy Flour
Orange Juice	Lentils	Wheat Bran
Papaya	Okra	Wheat Germ
Passion Fruit Juice	Peas: blackeye	
Pomegranate	split	
Prunes	Potatoes: baked	
Prune Juice	canned	
Raisins	chips	
Tangerine Juice	fried	
	sweet	
	Pumpkin	
	Soybeans	
	Spinach	
	Squash: acorn	
	butternut	
	hubbard	
	zucchini	
	Tomatoes	
	Tomato Juice/Sauce	
	Vegetable Juice	
	Wax Beans	
	Yams	
	Yellow Beans	

Potassium (Continued)

LIMIT THESE FOODS (150-200 mg/serving)

Follow recommended serving sizes.

1 serving = 1 med. Fruit or 1/2 cup fruit/vegetable or juice.

Fruits (limit to 3 servings per day)	Vegetables (limit to 2 servings per day)	Dairy Products (1-2 cups per day)
Apples	Alfalfa Sprouts	Milk
Applesauce	Asparagus	Ice Cream
Apple Juice	Beets	Yogurt
Apricot Nectar	Broccoli	pudding
Blackberries	Cabbage	
Blueberries	Carrots	
Boysenberries	Cauliflower	
Cherries	Corn	
Cranberries	Cucumber (1 cup)	
Cranberry Juice	Eggplant	
Cranberry Sauce (1 cup)	Green Beans	
Figs (canned in syrup)	Green Peas	
Fruit Cocktail	Green Pepper (1 cup)	
Fruit Salad	Greens: Collard	
Gooseberries	Mustard	
Grapes	Kale	
Grape Juice	Dandelion	
Grapefruit Juice	Beet	
Kumquat	Turnip	
Lyches (raw or canned)	Hot Peppers	
Mandarin Oranges	Leeks	
Mulberries (ras)	Lettuce (1 cup)	
Nectarine (1/2)	Mushrooms	
Orange (1/2)	Olives	
Papaya Nectar	Onions	
Passion Fruit	Potatoes (skinned, soaked, and boiled)	
Peaches	Pumpkin Flowers	
Peach Nectar	Radishes	
Pears	Rhubarb	
Pear Nectar	Sauerkraut	
Pineapple	Spaghetti Squash	
Pineapple Juice	Tofu	
Plums	Turnips	
Prunes (canned in syrup)		
Raspberries		
Strawberries		
Tangerine		
Watermelon		

Sodium

When you need to cut down on salt.....to 3000-4000 milligrams per day

Salt is made up of sodium and chloride (1/4 tsp salt = 500 mg. Sodium). You may need to limit your sodium intake if you have high blood pressure or fluid retention. No special foods are needed, but many low sodium products are available and may be used if desired. It is important to read labels carefully.

Salty spices

(limit to 1/2 tsp)
per day in cooking
or at the table)

Table Salt
Garlic Salt
Onion Salt

Celery Salt
Cooking Wine
Meat Tenderizer
Soy Sauce/Teriyaki

Salt Pork
Steak Sauce
Picante
Salsa

Try these instead:

Herbs & Spices
Butter Flavoring

Vinegar
Lemon Juice
Low sodium broths

Limit to 1-2 Tbsp.

- B.B.Q. Sauce
- Ketchup
- Mustard
- Salad Dressing

These are too high in salt!

Lunchmeat
Ham
Hot Dogs
Sausage

Bacon
Corned Beef
Chipped Beef
Smoked Meats

Canned Meats
Frozen Dinners
Canned
Tuna/Salmon
Processed Cheese

Eat fresh meats and rinse canned meat or tuna to reduce salt

Avoid these:

Potato Chips
Pretzels
Corn Chips
Salted Popcorn
Salted Crackers
Salted Bagels
Potato Chips

Salted Nuts
Sauerkraut
Olives
Pickle Relish
Pickles
Canned Vegetables
(may have if rinsed)

Canned Pork & Beans
Beans
Tomato Juice
Vegetable Juice
Tomato Sauce
Potato Mixes
Noodle/Rice Mixes

**Try unsalted snack foods instead of low sodium snacks:
rice cakes, fruit, and vegetables.**

Avoid these:

Canned Soup
Bouillon Cubes
Dried Soup Mixes
(Eat homemade
soups instead)

Gravy Mixes
Cottage cheese
Biscuit/Pancake
Mixes

Buttermilk (limit 2 cups)
Stuffing Mixes

**Be a smart shopper: Look for foods with less than
250 to 300 mg of sodium per serving.**

American Heart Association's Step 1 Dietary Guidelines

1. Reduce Saturated Fat Intake

- Use tub margarine.
- Use skim milk or 1% milk. Use low-fat cheeses or cheese products.
- Eat fish and skinless poultry more often.
- Use lean cuts of meat.
 - Beef: Round Tip, Top Round, Eye of Round, Top Loin Tenderloin and Sirloin.
 - Lamb: Loin Chop, Leg
 - Pork: Tenderloin, Boneless Top Loin Chop, Boneless Ham, Cured Center Loin Chop
 - Veal: Cutlet, Loin Chop.
- Avoid processed meats such as bologna, salami, hot dogs, pepperoni, corned beef, sausages (unless they are low-fat or fat-free).
- Use ice milk, sherbet or frozen yogurt instead of ice cream.
- Use canola oil, olive oil, corn oil or other vegetable oil in cooking or baking.

2. Reduce Cholesterol Intake

- Reduce meat/poultry consumption to no more than 6 oz. per day.
- Reduce egg consumption to no more than 3 whole eggs per week.
- Avoid organ meats.

3. Reduce Total Fat Intake

- Bake, boil, or broil all meats, fish, or chicken
- Avoid sauces and gravies when eating out.
- At fast food places, choose a regular hamburger, a grilled chicken sandwich and a side salad with low-fat dressing.
- Snack on pretzels, fruits and vegetables and air popped popcorn, or rice cakes.
- Choose low fat baked goods (a low-fat baked produce has no more than 3 grams of fat per 100 calories).
- Reduce the amount of fat in recipes by $\frac{1}{2}$. Substitute applesauce or non-fat yogurt for $\frac{1}{2}$ of the oil in your baked recipe.
-

4. Lose weight if you are overweight.

5. Increase your intake of Fruits, Vegetables, Grains, and Legumes.

- Eat at least 5 servings of fruits and vegetables a day.
- Eat 6 or more servings of grains, breads, cereals and starches.

Facts about Cholesterol

Cholesterol

- Made by the body.
- Blood cholesterol level is a combination of genes and diet
- Cholesterol is only found in animal foods.
 - Beef
 - Pork
 - Poultry
 - Veal
 - Organ Meats
 - Eggs
 - Lamb
 - Fish/Shellfish
 - Whole-Milk Dairy Products

Dietary cholesterol intake should be less than 300 milligrams/day.

Saturated Fat

- Usually are found in animal products
- They tend to increase LDL level
- Some plant products are very high in saturated fats
- Sources of saturated fats include:
 - Beef fat
 - Lard
 - Chicken fat
 - Butter
 - Whole Milk
 - Cheeses
 - Ice Cream
 - Stick margarine
 - Shortenings
 - Coconut Oil
 - Palm Oil
 - Cocoa butter

High Density Lipoprotein (HDL)

- Also known as “good” cholesterol
- High concentrations of HDL protect against heart disease
- To increase HDL:
 - Exercise regularly (at least 3 times per week)
 - Do not smoke
 - Lose weight if you are overweight, or stay at desirable weight

Low Density Lipoprotein (LDL)

Also known as “bad” cholesterol

- High concentrations of LDL increase the risk of heart disease
- To decrease LDL:
 - Eat less dietary cholesterol and saturated fat
 - Substitute poly and monounsaturated fat for saturated fat
 - Eat more soluble fiber:
 - Oats/Oat products
 - Cooked dried beans and peas
 - Oat bran
 - Fruits and vegetables

Tips to Reduce Triglycerides

- Lose weight, if overweight.
- Reduce your fat intake. Avoid:

Butter	Fried foods	Chocolate	Mayonnaise
Margarine	Salad dressing (regular)	Cakes	Whole milk
Gravy	Sour Cream	Cookies	Fatty cheeses
		Pies	Ice cream
- Eat fewer sweets:

Jelly	Syrup	Pies	Cookies
Honey	Cakes	Pastries	Donuts
Sugar	Candy	Brownies	Jam
Chocolate	Regular soda pop		
- Replace sweet foods with these starchy foods:

Popcorn	Pretzels	Breadsticks	Rice cakes
Bagels	Low-fat crackers	Cereals (unsweetened)	
Whole grain bread			
- Choose fruit instead of juice
- When choosing canned or frozen fruits, use only “Lite” or those packed in their own juice
- Restrict alcohol intake
- Increase exercise
- Some fish may lower triglycerides – eat at least 8 ounces per week of the following:

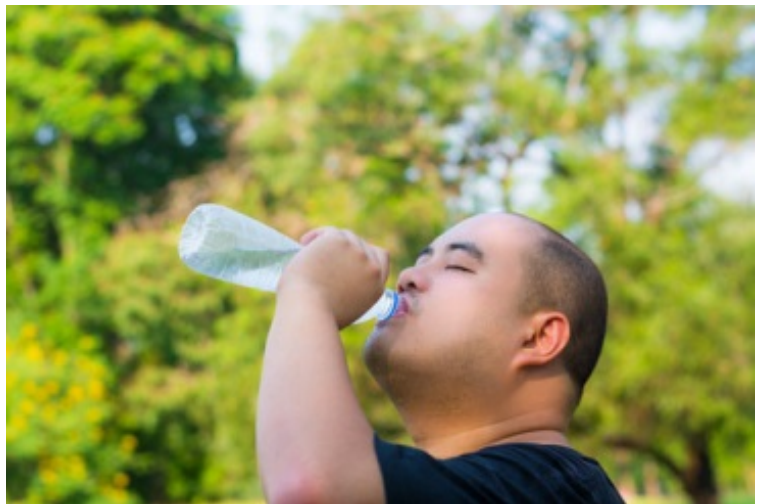
Salmon	Albacore Tuna	Herring
Mackerel	Sardines (non-oil)	Lake Trout

Alcoholic Beverages

We recommend that you avoid alcoholic beverages after transplantation. This includes non-alcoholic beer, which does contain alcohol. On special occasions, you may limit your consumption to one or two alcoholic beverages.

Drinking Water

You may drink treated (chlorinated) municipal tap water after transplantation. If your water is from a well or from a questionable water source, it is safest to boil your water. It should be a rolling boil for 10 minutes. You may contact your local water authority (the phone number should be on your water bill) or the EPA Safe Drinking Water Hotline at (800) 426-4791 with questions.



GLOSSARY

Acute – having a rapid onset and short course. Not chronic.

Allograft or Graft – the transplanted organ.

Anemia – low red blood cell count.

Antacids – medications that neutralize stomach acid.

Antibiotic – a medication used for bacterial infections.

Antibody – a protective protein produced by the body's immune system to eliminate foreign substances, such as bacteria or viruses.

Azathioprine (Imuran®) – an immunosuppressive (anti-rejection) medication.

Biopsy – a diagnostic test in which a small amount of tissue is removed and examined microscopically.

BUN (Blood Urea Nitrogen) - a blood test that measures kidney function.

Cadaveric transplant – organ from a donor who is brain-dead.

Chronic – having a slow onset and long course. Not acute.

Delayed Graft Function (DGF) – temporary nonfunction of the kidney. Also known as acute tubular necrosis (ATN).

Transplant Coordinator – a registered nurse experienced in working with patients who have received or are in need of a transplant.

CMV (Cytomegalovirus) – an inactive virus present in most adults, but which may become active and cause infection after transplantation when the immune system is suppressed.

Creatinine – a blood test that measures kidney function.

Cyclosporine (Sandimmune®) (Neoral®) – an immunosuppressive (anti-rejection) medication.

Diabetes – a disease characterized by abnormal blood sugar levels.

Diarrhea – watery, loose bowel movements.

Dietitian – a professional who is trained in nutrition.

Diuretics (Water Pills) – medications that help to remove excess fluid from the body's tissue.

Edema – abdominal fluid retention in the feet, legs, etc. It is also known as swelling.

EKG (Electrocardiogram) – a test that records the heart's electrical activity.

End Stage Renal Disease – that stage of kidney disease where kidney function has declined to the point where dialysis is necessary.

Fasting Blood Sugar (FBS) – A blood test that measures morning glucose levels before eating.

Flu – can be characterized by fever, chills, headaches, general weakness, cough or sore throat. It usually lasts 2 - 7 days.

Glucose – sugar

Hepatitis – An inflammation (injury) of the liver. It may be caused by a virus, as in Hepatitis A, Hepatitis B, or Hepatitis C, or even CMV Hepatitis. It may also be caused by chemicals or an immune disorder against your own body.

Hyperglycemia – high blood sugars. If untreated, hyperglycemia can lead to more serious health problems.

Hypertension - high blood pressure.

Hypoglycemia - low blood sugars. If untreated, hypoglycemia can lead to serious health problems.

Immunosuppressant – (anti-rejection) – A medication that reduces the body’s natural defense system so that the body does not reject the transplanted organ.

Imuran® - see Azathioprine.

Intravenous – into a vein.

Liver Function Tests (LFT’s) – a blood test that measures liver function.

Nephrectomy – the process of surgically removing a kidney. A native nephrectomy is the removal of your own kidney. An allograft nephrectomy is the removal of a transplanted kidney.

Nephrologist – an internist trained in treating patients with kidney disease.

Pneumonia – inflammation of the lungs usually caused by an infectious organism.

Pneumocystis Carinii Pneumonia (PCP) – a serious type of pneumonia that immunosuppressed individuals can develop which can be prevented by medication.

Prednisone (Deltasone®) – an immunosuppressive (anti-rejection) medication.

Prophylaxis – treatment with medication used to prevent disease.

PTLD – Post-transplant lymphoproliferative disorder. A tumor-like condition in the lymph nodes that can occur in immunosuppressed patients. It can become cancerous if not treated.

Rejection - when the body’s natural defense system attacks the transplanted organ.

Renal – related to kidney function.

Renal Scan – a test to determine blood flow through and function of the kidney.

Residents and Fellows – doctors who have completed medical school and are continuing training.

Tacrolimus (Prograf®) – an immunosuppressive (anti-rejection) medication.

Transplant – to transfer an organ, such as a kidney or liver, during surgery from one person (donor) to another (recipient).

Transplant Social Worker – a social worker who works with transplant patients to address financial, emotional, and psychosocial issues related to transplantation.

Transplant Surgeon – a doctor who performs operations to transplant organs from one person to another.

Tuberculosis (TB) – an infectious lung disease that can be detected using a skin injection test or a CXR.

Ultrasound – a diagnostic test, using high frequency sound waves, which shows structure of internal organs.

