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Congratulations!

Your kidney transplant operation is completed and it is now time to review your post-transplant care and responsibilities.

This information is being provided to assist you in the days and months following your kidney or kidney/ pancreas transplant. It will help you learn the many aspects of post-transplant care, but it should not replace advice or treatment provided by the transplant team.

Please talk with your transplant doctor or coordinator if you have questions, concerns, or problems. Your transplant team is dedicated to helping you ensure the success of your new kidney. All of your questions are important. Help them help you and your new kidney stay healthy. Thank you for choosing Augusta University Medical Center (AUMC) for your transplant needs.

Important Phone Numbers

Patient problem line for nights and weekends: 706-721-2888

Transplant main office: 706-721-2888

Clinic appointment line: 706-721-1450 or 706-721-1450

Post-Transplant coordinators: 706-721-3200 or 706-721-3216

Prescription refill line: 706-721-7125

Transplant pharmacist: 706-721-6324 or 706-721-2740

Transplant social worker: 706-721-6664

AUMC account representative: 706-721-8025

Post-Transplant administrative assistant: 706-721-8025

Savannah Transplant Clinic: 912-819-6796

Medical Emergency Phone Calls

In order to provide the very best care to you and your loved ones, we would like to review what constitutes as an emergency and requires a call to the on-call physician during non-office hours.

Medical Emergencies may include:

- Shortness of breath or chest pain
- Fever greater than 100.5 degrees F
- Severe pain around the transplant site
- Inability to make urine
- Blood glucose >300 mg/dL
- Excessively painful urination
- Blood pressure greater than 160/95 for three consecutive readings after taking blood pressure medications
- Severe nausea or vomiting.

If you are experiencing any of the above, please call our office 706-721-2888 and ask for the Transplant Nephrologist On-Call.

In order to best serve our patients who are experiencing medical emergencies, we ask patients who have questions or are experiencing a non-medical emergency to please call our office during business hours and your physician or clinical coordinator will be able to assist you.

Non-Emergent Requests:

- Lab results
- Scheduling or changing appointments
- Medication refills

Our office requires 48-72 hour notice for prescription refills. For mail order medication refills, our office requires a 10 day notice. Please be sure to check your medication supply prior to leaving on vacations and long weekends. Please call 706-721-7125 to assist you with medication refills or questions.

General Post-Operative Information

When you get home every day you should:

- Take your medicines as prescribed.
- Drink plenty of fluids every day.
- Check your temperature each day. Call the transplant office if you have a fever of 100.5 F or more.
- Weigh yourself every morning. Call the transplant office if you gain 2 pounds or more in one day or more than 5 pounds in a week.
- Check your blood pressure if your doctor instructs you to do so. Be sure to take your blood pressure after you take your blood pressure medications. If the top number of your blood pressure is consistently > 160 or if the bottom number is consistently > 95 report it to the transplant team.
- Check your blood sugar if your doctor instructs you to do so
- Check yourself for signs and symptoms of rejection and infection. Call the transplant office if you experience any symptoms.

Long term follow up care

You can expect to see your post-transplant team in the transplant clinic for approximately 3 to 6 months after your transplant. In approximately 3 months, our staff will assist you in making an appointment to begin seeing your primary nephrologist for follow up care. We will provide your nephrologist with the information about your care here at AUMC. Our transplant nephrologists will be available at any time if complications arise related to the transplant and your referring nephrologist feels you should return to see our team in clinic. You will also continue to see the transplant team at least annually.

We will see you in our clinics once or twice a year to ensure your well-being and to provide necessary information regarding your progress to our regulatory agencies.

Wound Care

After surgery, it is important to keep your wound clean and dry. Your wound may have staples in place that will be removed during your clinic visit in about 3 weeks depending on how well your wound is healing. You may shower only. You should not bathe in the tub until your staples have been removed. After showering, use a clean towel to blot your wound dry. When your staples are removed, strips of tape called Steri-Strips[®] may be placed over your wound to help your incision stay closed. You may shower or take a tub bath at this time. These Steri-Strips should fall off within two weeks. Do not rip off the Steri-strips as this could injure your skin. If your wound incision opens up, notify the transplant team immediately.

General Post-Operative Information

Activity and exercise

After your transplant, you will eventually have more energy and feel better. Exercise will help keep your heart healthy, your muscles strong, and your weight under control. Following the advice of your transplant doctor or coordinator, you may start to exercise for 30 to 45 minutes at least three days a week. For instance, you can walk, ride a bike, swim, or do low impact aerobic exercise. Find an activity you enjoy and do it!

There are some things that you should not do for several weeks after your transplant surgery:

- No push-ups or sit-ups for eight weeks following your surgery
- No pushing, pulling, or lifting objects that weigh more than 10 pounds for eight weeks following your surgery
- No power lifting for at least 12 weeks post-transplant
- No driving for two weeks after your transplant. Do not drive while you are taking prescription pain medicine.
- No contact sports (football, wrestling, boxing) at any time following your transplant due to the risk of injury to your kidney.

It is important to check with the transplant team before starting any exercise program!

General Post-Operative Information

Sex

It is advisable to wait until your staples or sutures are removed to be sexually active. Sex will not harm your new kidney. Please be sure to practice safe sex. Urination after intercourse is advisable for all patients to avoid urinary tract infections.

For women:

It is possible for you to get pregnant now even though your periods may not be regular. You must use some sort of birth control. Your transplant doctor or coordinator will discuss with you the method that is best for you.

Please discuss your plans for having children with your transplant doctor or coordinator. In general, pregnancy is not recommended until at least one to two years after transplant due to the risk of damage to the kidney and, importantly, risk to your new baby from your anti-rejection drugs. Patients with creatinine values above 1.5 mg/dL are at an increased risk for pregnancy complications. Pregnancy should be planned and prepared with adequate pre-conception nutrition, discontinuation of possible toxic medications and initiation of prenatal vitamins and folic acid.

Women may be at more risk for getting cancer of the cervix after transplant. Women 21 to 65 years of age should be screened for cervical cancer by Pap and HPV testing every three to five years based upon existing guidelines. Your physician will provide guidance on screening. Please continue to do a self-breast exam monthly.

Report any changes in your breasts to your doctor.

For men:

If you are not able to have or maintain an erection, talk to your nephrologist or primary care physician. There are many treatments available that may be able to help you. Discuss your plans for fathering children with your transplant doctor or coordinator.

General Post-Operative Information

Complications

It is important to take your medicines exactly as prescribed every day to prevent complications, including

rejection. Never miss a dose or change the dose on your own. Never ever run out of your medicines and do not hesitate to contact the transplant offices if you have a question about your medicines. Do not wait until the last minute to request help or a refill of your medications. Try to call for assistance during normal

working hours. Do not miss any lab or clinic appointments as your doctors may detect complications or problems that you do not feel. Please know it is common for patients to be admitted in the weeks after transplantation for close monitoring in the event any signs of a complication are occurring.

Rejection happens when your body tries to fight off your new kidney. Your body can tell the new kidney is not yours and will try to attack it. You must take all of your medicines in order to “fool” your body into believing the kidney is your own. If you stop taking your medicines, your body will reject the new kidney.

Unfortunately, rejection sometimes happens even when you follow your transplant team’s instructions and take all of your medicines correctly. It could happen days, weeks, months, or years after your transplant. If you do have a rejection episode, this does not mean you will lose your new kidney. Early detection and treatment of a rejection can positively impact the outcome of your kidney.

Symptoms of rejection are listed below, but it is also possible to have rejection without noticeable symptoms. This is why it is important to come to your clinic appointments for laboratory monitoring.

Infection can occur more frequently due to the medicines you take to prevent rejection. The risk of catching a cold or an infection is usually greater in the first three to four months after your transplant.

General Post-Operative Information

Call your primary nephrologist or the transplant office or after-hours line if you experience any of the warning signs.

Post-Transplant office

706-721-3200 or 3216

After-hours line (night and weekends):

706-721-2888 and ask to speak with transplant nephrologist

You can guard against these complications by doing the following:

1. Take all of your medicines in the right amount and at the right time
2. Never miss a dose or change the dose on your own.
3. Take your medicines at the correct time each day. An alarm on your computer or cell phone or watch may help you remember.
4. Never run out of your medicines.
5. Do not hesitate to contact the transplant office or your doctor if you have a question about your medications
6. Attend all lab and clinic appointments. Your doctor may discover a complication that has no symptoms.
7. Get medical help when you are sick.
8. Wash your hands often.

Here are warning signs of rejection or an infection:

- Fever of 100.5 F or more
- Pain, redness, swelling, or drainage from the transplant site
- Stomach pain, nausea, vomiting or diarrhea
- Pain or burning when you urinate
- Cloudy or foul smelling urine
- Drop or decrease in your urine output
- Weight gain of 2 or more pounds in one day
- Feeling like you have the flu
- Swelling in your ankles or feet
- Chest pain or shortness of breath
- Poor appetite and decreased fluid intake

Medications

After your transplant, you will be on several new medicines, including immunosuppressants, or anti-rejection medicines. These medicines will keep your body from rejecting your new kidney. You will also take medicines to prevent or fight infections. You may also have to take additional medicines to control your blood pressure, control your cholesterol level, control your blood sugar and to prevent stomach irritation.

Generics are now available for many post-transplant medications, and your local pharmacist may give you these. You should ask to receive generics from the same company each time. It is important to notify the transplant team if you notice a name change on any of the anti-rejection medications given to you at the pharmacy or if your pills look different.

You need to understand all of your medicine dosages and why you are taking your medicines before you leave the hospital. Please do not hesitate to ask any of your doctors, nurses, or pharmacist if you do not understand.

Do not run out of any of your medicines. At each clinic visit, notify your nurse or doctor or transplant pharmacist about any medicines you may need refilled before your next visit. Do not wait until the last minute to request help or a refill of your medications. Try to call for assistance during normal working hours.

Do not wait until you run out of the medicines to get refills as it may take us up to 48 hours to get your medicine refilled.

Plan ahead and get refills one to two weeks prior to running out of the medicine. Call 706-721-7125 if you need an updated prescription or if you are out of refills.

Remember, rejection will occur if you stop taking your medicines or if you do not take the right amount at the right time.

Medications

Follow these directions carefully:

- Know your medicines. Know what medicines to take, when to take them, how much to take, and why you are taking them.
- Always take your medicines as instructed.
- Never miss or change a dose on your own. Call if you miss or throw up a dose.
- Never run out of your medicines. Call your pharmacy at least a week before your medication runs out.
- Do not take over-the-counter or herbal medicines or medicines from another doctor without checking with your transplant team or nephrologist first.
- Report all side effects. Do not stop taking your medicines if the side effects are bothering you.

Most

of the side effects can be managed with your doctor's help.

- Call if you have any questions about your medicines.

Tips for remembering your medications:

- Set an alarm on your phone for the time you are supposed to take your medicine
- Use a pill box to organize your medicines. This is especially helpful if you take many different medicines multiple times a day. Pill boxes are made for one week at a time. Some of them have spots for morning, noon, afternoon, and bedtime doses.
- Write what each of your medicines is for on the bottle (ex. rejection, infection, blood pressure, cholesterol, etc.)
- Place your different medicine bottles in separate baggies based on what they are for. (ex: medicine for rejection, medicine for infection, other)
- Mark your calendar for when you need to call the pharmacy for refills
- Place sticky notes around your house to remind you to take your medicine
- Create a checklist for your medicines. Mark off each medicine when you take it. This way, you can see which medicines you have taken already and which ones you forgot
- Keep your medicines somewhere you will see them often every day, such as in the kitchen or on your bedside table
- Never store medicine in a bathroom, your car or a room with extreme temperature changes
- Partner with someone you trust to help manage your medicines and keep you accountable

Medications

Anti-rejection medicines in general

Tacrolimus (Prograf/Envarsus/Astagraf), mycophenolate (Cellcept/Myfortic), prednisone, and sirolimus (Rapamune) are examples of drugs to help prevent your body from rejecting your transplant. All of these medicines lower your body's resistance to infection. While taking any anti-rejection medicines, you should:

- See your dentist for regular checkups. If at all possible, do not schedule a dental procedure for 90 days after your transplant unless it is an emergency.
- Take an antibiotic before you have any dental work done (such as a cleaning, cavity filled, etc.) The antibiotic is used to prevent an infection in your bloodstream. Tell your transplant coordinator or doctor at least 2 weeks before you go to the dentist so this can be prescribed for you. Do not wait until the day of your dental appointment to request the antibiotic.
- Garden with gloves on.
- Do not change litter boxes or bird cages while taking these medications because doing so may give you an infection.
- Notify your nurses or doctor if you plan to travel out of the country.
- Avoid being around friends, family or others who are sick with an infection like a cold, shingles or the flu

Medications

Tacrolimus (Prograf/Astagraf XL/Envarsus XR)

- Prevents rejection.
- Talk with your transplant team about the best way to schedule this medicine. If you take Prograf, it is taken twice a day with doses spaced 12 hours apart. If you take Astagraf XL or Envarsus XR, it is taken once a day in the morning 24 hours apart from the previous dose.
- If you take twice a day Prograf (tacrolimus): The night before you come in for labs, take your Prograf dose 12 hours before you plan to have blood drawn the next morning.
- If you take once a day tacrolimus (Astagraf XL or Envarsus XR): The day before you come in for labs, take your Astagraf XL or Envarsus XR dose 24 hours before you plan to have blood drawn the next morning.
- Do not open, crush, split, or chew this medication.
- When you have labs checked, wait until after your blood has been drawn to take your tacrolimus.
- Be consistent in the amount of food eaten when taking this medications.
- Avoid grapefruit and grapefruit juice.
- Tacrolimus may interact with other medications. Check with the transplant team before taking any medications they have not prescribed. This includes over-the-counter and herbal products
- Keep your clinic appointments so your dose can be adjusted properly. Too much tacrolimus in your blood can hurt your kidney, and not enough could lead to rejection. Your transplant team will make adjustments so you have just the right amount of this medicine.
- Side effects: increased chance of getting an infection, hair loss, nausea, diarrhea, shaking hands, headache, trouble sleeping, high blood pressure, increased creatinine, high blood sugar.

Mycophenolate mofetil (Cellcept) or Mycophenolic Acid (Myfortic)

- Prevents rejection.
- Talk with your transplant team about the best way to schedule this medicine. You may take it with food if it upsets your stomach.
- Mycophenolic acid (Myfortic) is an enteric coated version of mycophenolate. It is an alternative for those who have problems with stomach upset with Cellcept.
- Do not break, crush, chew, or open the capsule or tablet before taking it.
- Women of child bearing age should use 2 forms of birth control during treatment with this drug and for six weeks after it has been stopped. The effectiveness of oral contraceptives may be impaired by this

medicine. It may cause birth defects.

- Side effects: increased chance of getting an infection, loss of appetite, stomach pain, nausea, vomiting, diarrhea, decreased white blood cell count, increased risk of getting cancer.

Prednisone

- Prevents rejection.
- Take with food
- May increase your blood pressure or blood sugar
- Eating a healthy diet and having a regular exercise plan will help minimize side effects
- Side effects: increased chance of getting an infection, mood swings, increase in blood sugar and blood pressure, trouble sleeping, swelling, increased appetite, heartburn stomach ulcers

Medications

Modified Cyclosporine (Neoral, Gengraf)

Prevents rejection.

Talk with your transplant team about the best way to schedule this medicine. It is to be taken twice a day with doses spaced 12 hours apart

When you have labs checked, wait until after your blood has been drawn before you take your cyclosporine.

- Be consistent in the amount of food eaten when taking this medications.
- Avoid grapefruit and grapefruit juice.
- Cyclosporine may interact with other medications. Check with the transplant team before taking any medications they have not prescribed. This includes over-the-counter and herbal products.
- Keep your clinic appointments so your dose can be adjusted properly. Too much cyclosporine in your blood can hurt your kidney, and not enough could lead to rejection. Your transplant team will make adjustments so you have just the right amount of this medicine.
- Side effects: increased chance of getting an infection, shaking hands, swollen or bleeding gums, unwanted hair growth, oily skin, skin cancer, increased cholesterol, increased creatinine or rise in blood pressure.

Sirolimus (Rapamune)

- Prevents rejection.
- May take with or without food, but keep it consistent.
- Do not crush, split, or chew tablet.
- Avoid grapefruit and grapefruit juice.
- Sirolimus has several interactions with other medications. Check with the transplant team before taking any medications they have not prescribed. This includes over-the-counter and herbal products.
- If you take cyclosporine too, take this medicine 4 hours after cyclosporine
- Keep your clinic appointments so your dose can be adjusted properly. Too little sirolimus in your blood can lead to rejection. Your transplant team will make adjustments so you have just the right amount of this medicine.

When you have your labs checked, wait until after your blood is drawn before taking your Sirolimus.

- Side effects: increased chance of getting an infection, nausea, vomiting, loss of appetite, constipation, diarrhea, rash, acne, tremor, anemia, muscle pain, increased cholesterol, increased blood pressure, tiredness, headache, swelling in arms or legs, weight gain, sensitivity to sunlight, impaired wound healing, increased risk of bleeding, mouth ulcers.
- Tell your doctor if you have new or worsening cough, shortness of breath, difficulty breathing, or any new breathing problems.

Medications

Azathioprine (Imuran)

- Prevents rejection.
- May take with or without food. Take after a meal if it upsets your stomach.
- Side effects: increased chance of getting an infection, low white blood cell count, bruise or bleed easily, chills, upset stomach, throwing up, increased risk of skin cancer and liver injury.
- Women should use birth control during treatment.

Valganciclovir (Valcyte)

- Prevents infection.
- Take with food.
- Both men and women should use effective birth control during treatment and for 90 days following treatment to avoid pregnancy. Valcyte may cause birth defects.
- Side effects: decreased white blood cell count, bruise or bleed easily, headache, nausea, vomiting, stomach pain, fertility problems

Nystatin

- Prevents infection and white sores in your mouth called thrush.
- Swish it around in your mouth so the entire inside of your mouth is covered with the medicine. Hold the medicine inside your mouth for as long as you can. Then gargle and swallow the medicine.
- If you wear dentures, remove them before you take this medicine.
- Side effects: nausea, vomiting, stomach pain, or loose stools.
- After each dose, do not eat or drink for 15-20 minutes.

Medications

Sulfamethoxazole and trimethoprim (Septra/Bactrim)

- Prevents infection.
- Take with a full glass of water and drink several glasses of water each day.
- Side effects: sensitivity to sunlight, rash, or itching.

Dapsone

- Prevents infection.
- May take with or without food. Take with food if it upsets your stomach.
- Side effects: upset stomach, nausea, anemia, headache, blurry vision, sensitivity to light, mood changes.

Atovaquone (Mepron)

- Prevents infection.
- Take with food, best if with a high fat meal.
- Shake suspension well before use.
- Store at room temperature.
- Medication can stain fabrics.
- Side effects: headache, upset stomach, throwing up, belly pain, diarrhea, cough, muscle weakness, trouble sleeping, rash, cough, dizziness.

Acyclovir (Zovirax)

- Prevents infection.
- May take with or without food. Take with food if it upsets your stomach
- Take with a full glass of water and drink lots of water throughout the day
- Side effects: nausea, vomiting, lightheadedness, dizziness, headache, fever, muscle pain, diarrhea.

Medications

Pantoprazole (Protonix)

- Prevents or treats ulcers, heartburn, or upset stomach
- May be taken once or twice a day.
- Side effects: dizziness, headache, constipation, diarrhea

Pepcid (Famotidine)

- Prevents or treats ulcers, heartburn, or upset stomach.
- May be taken once or twice a day. If once a day, take at bedtime.
- Side effects: headache, dizziness, constipation, or loose stools.

Clinic Guidelines

Clinic Guidelines 3 to 6 months at AUMC

You will come to the Augusta University Medical Center (AUMC) transplant clinic often during the first few months after your transplant. This is so the transplant team can keep a close eye on how well your new kidney and/or pancreas is working. The transplant program is also required to submit information regarding the outcome of your transplant to UNOS (United Network for Organ Sharing) yearly.

You can expect to come to clinic:

- Twice a week for the 1st month
- Once a week for the 2nd month
- Every other week for the 3rd month
- You will continue to see the transplant team at least annually, but you may see us more often depending on how your kidney and/or pancreas is doing.

We will assist you in scheduling an appointment with your local kidney doctor within 3 months of transplant. Your transplant team may make changes in your medicines during your clinic visits. Please bring all of your medicines and your medicine sheet with you to each clinic appointment. Your blood and urine is checked at or before each clinic appointment. If you would like to have your labs drawn the week prior to your clinic appointment, please let your transplant coordinator know. These lab tests show the doctor how well your new kidney is functioning and how well you are doing. Your blood pressure, temperature, and weight are also checked at each clinic visit. If there is a problem with your labs requiring a doctor's order, you will be contacted by the transplant team. Otherwise, please feel free to contact us for an update on your lab results. Be sure to attend all of your clinic and lab appointments.

Please follow these clinic guidelines at AUMC:

Come to your first clinic visit on _____.

1. Bring all of your medicines and your medicine sheet.
2. Bring a change of clothes with you in case you have to stay in the hospital overnight. This is a common occurrence in the first few weeks after transplant so do not be alarmed.
3. Do not take your cyclosporine (Neoral/Gengraf), tacrolimus (Prograf, Envarsus XR, Astagraf XL), sirolimus (Rapamune) or any investigational drug study medicines until after your blood is drawn.
4. After labs are drawn you can take you cyclosporine, tacrolimus, sirolimus or any investigation drug study medications.
5. Be at the Solid Organ Transplant Clinic, located on the 3rd floor in Professional Building 1, by the appointed time. Enter through the main entrance of the Professional Building and take the elevators to the 3rd floor.
6. You must bring a support person with you if you need assistance getting to and from your car.
7. If you would like to have your labs drawn at AUMC the week before your clinic appointment, please notify your transplant nurse.
8. Please wait in the clinic lobby until your name is called.

Ureteral Stent

At the time of your transplant, a stent was placed in your ureter (the drainage tube from the kidney to the bladder). The purpose of the stent is to hold the ureter open and to keep urine flowing freely from the new kidney. It also aids in proper healing of the ureter after your surgery.

The stent is a small, soft, plastic tube, about 5 inches long and as big around as a coffee swizzle stick. The tube has holes in it. One end of the tube sits in the kidney, and one end sits in the bladder. A coil on each end holds the stent in place. The stent cannot be seen from outside the body. It should not interfere with your normal routine.

While You Have a Stent

- Drink plenty of fluids to help flush out your urinary tract.
- Your urine may be slightly pink or red. This is due to bleeding caused by minor irritation from the stent. This may happen on and off while you have the stent.
- Certain movements may trigger a spasm or a feeling that you need to urinate. You may also feel mild soreness or pressure before or during urination. These symptoms will go away a few days after the stent is removed.
- Medication to control pain or bladder spasms or to prevent infection may be prescribed.

Call the transplant team if:

- Your urine contains blood clots
- You have a fever over 100.5 degrees F, chills, nausea, or vomiting
- Your pain is not relieved by medication
- The end of the stent comes out of the urethra.

Stent Removal Procedure

The stent will need to be removed about four to six weeks after your transplant surgery. This procedure is done in the Urology Clinic located on the 4th floor of the AU Medical Office Building. This appointment will be scheduled for you and you will receive a letter indicating the appointment date and time.

The procedure by which the stent is removed is called cystoscopy.

Cystoscopy involves placement of a small flexible tube through the urethra (the hole where urine exits the body). This tube is very small - smaller than the urinary catheter you had after your transplant. The doctor will advance the tube into the bladder. A grasper on the end of the tube will allow the doctor to grasp the stent and remove it.

- The transplant team will give you a prescription for an antibiotic to take the morning and evening of the procedure.
- The procedure usually takes only a few minutes and causes little discomfort.
- Most patients tolerate having the stent removed using only a topical anesthetic (lidocaine jelly) instilled into the urethra.
- Since no intravenous line is inserted and you will not be put to sleep, you may drive yourself home afterwards.
- You can eat normally before and after the procedure.
- You may possibly have pink color urine after the stent removal that should clear up in a few days

It is extremely important that you keep this appointment or let the transplant team know if the appointment was missed. If the stent it is left in place too long, it can lead to blockage of urine, stone formation or infection.

Nutrition after Transplant

Your diet plays an important role in your successful recovery after transplant.

After surgery, you need additional calories and protein for proper wound healing. Your diet will likely change from what you were eating and drinking before transplant. The transplant team will adjust your diet as needed to meet your specific nutrient needs. Focusing on food safety after transplant will also help reduce your risk of foodborne illness.

Protein

Adequate protein and calories help your wounds heal after transplant.

You need extra protein to help overcome muscle breakdown caused by high doses of prednisone (a medication that helps prevent organ rejection). The following foods are recommended to help meet your protein needs:

- o Meats (chicken, turkey, beef, pork,)
- o Fish/seafood
- o Dairy products (cheese, low-fat milk, yogurt)
- o Eggs/egg substitutes (egg whites)

The following are vegetarian foods high in protein. When consumed in adequate amounts in combination with a well-balanced diet, these foods can also help meet your protein needs:

The following are vegetarian foods high in protein. When consumed in adequate amounts in combination with a well-balanced diet, these foods can also help meet your protein needs:

- o Nuts and seeds (almonds, peanuts, walnuts, flax, chia, etc.)
- o Nut butters (almond, peanut, etc.)
- o Beans, peas, lentils
- o Soy products (includes soy milk, edamame, tofu, tempeh)
- o Quinoa, buckwheat, Ezekiel bread

If your appetite is poor right after surgery...

You may benefit from oral nutrition supplements (Boost[®], Ensure[®], etc.). Ask your transplant team and/or dietitian if you wish to try one during your hospital stay. Aim for supplement options with at least 10grams of protein per serving. For individuals with diabetes, choose lower sugar options (Boost Glucose Control[®], Glucerna[®], Premier Protein[®]) for improved blood sugar control.

"Nutrition after Transplant

Sugar

Controlling your blood sugars is key for wound healing after transplant.

Adequate blood sugar control is important for everyone (not just individuals with diabetes).

Avoiding concentrated sweets may help decrease the side effects of some transplant medications that can increase your blood sugars. The following are high in added sugars and should be limited:

- Sugar/molasses/honey/syrup
- Soft drinks (Coke, Pepsi, Sprite, etc.)
- Fruit juices/cocktails
- Sweetened teas, lemonades
- Cookies, pastries, candy, pies, doughnuts
- Canned fruit with added sugar or syrup
- Ice cream
- Jams/jellies
- Jell-O/pudding

Try these tips for healthier carbohydrate options:

- Choose whole grain and/or whole wheat cereals, breads, pastas, etc.
- These options have fiber and vitamins/minerals that other processed (white) breads and pastas do not
- Limit intake of sugar-sweetened beverages such as sodas, fruit juices, fruit cocktails, lemonades, and sweetened teas
- Look for canned fruit labels with "no added sugar" or "packed in its own juice or water"
- Maintain a healthy weight and exercise regularly for improved blood sugar control and/or to reduce your risk of diabetes post transplant
- Be mindful that foods labeled as "low-fat" or "no fat" are often high in sugar"

Nutrition after Transplant

Salt

After transplant you may still need to limit the amount of salt in your diet.

This is important to reduce swelling and for healthy blood pressure. The following high salt foods should

be limited or consumed in moderation:

- Canned soups or broths, dehydrated soup mixes, bouillon cubes
- Processed meats: ham, bacon, sausage, hot dogs, bologna, salami, pepperoni, pastrami, corned beef, smoked/dried/canned meats or fish
- Cheese
- Frozen packaged dinners
- Processed vegetables: pickled or canned vegetables, frozen vegetables with added sauces
- Salted crackers, pretzels, potato chips, popcorn, nuts/seeds
- Tomato/vegetable juices
- Salt containing seasonings: seasoning salts, garlic salt, onion salt, meat tenderizers
- Sauces/condiments/other: olives, soy sauce, buffalo/hot sauce, ketchup, mustard, marinades, salad dressings, etc.

• Salt substitutes are high in potassium and should be avoided unless approved by your doctor
Try these tips when following a lower sodium diet:

- Choose fresh or minimally processed foods instead of pre-made, canned, or boxed foods
- Season foods with salt-free seasonings (i.e. Mrs. Dash, fresh/dried herbs and spices, lemon or lime juice, etc.)
- Look for “low sodium” or “no added salt” options at the grocery store

Nutrition after Transplant

Phosphorous

Phosphorous levels in your blood may drop to lower-than-normal levels after transplant. This can lead to weak bones or fractures over time. Your transplant team may recommend increasing your dietary phosphorous intake. Try choosing the following high phosphorous foods with your meals and snacks:

- o Dairy products (cheese, yogurt)
- o Meats (chicken, turkey, beef, pork)
- o Fish
- o Cereals (wheat/bran)*
- o Oatmeal/cream of wheat
- o Oat bran muffin
- o Macaroni & cheese
- o Sandwiches (turkey, ham, tuna, chicken, grilled cheese)
- o Milk
- o Chocolate milk*
- o Hot chocolate*
- o Pudding*
- o Beans
- o Nuts/seeds

*These options contain higher amounts of sugar and should be limited with diabetes

Potassium

Medications after transplant can affect potassium levels in your blood.

If this occurs, your transplant team will instruct you on adjusting your dietary potassium intake.

High potassium foods include:

Fruits: avocado, bananas, dried fruit (apricots, dates, figs, prunes, raisins, etc.) kiwi, mango, melon (cantaloupe/honeydew), nectarines, oranges, papaya, peach, plantain, pomegranate

Vegetables: acorn squash, artichoke, beets/collard greens, chard, Chinese cabbage, corn, edamame, okra, potatoes, pumpkin, spinach (cooked), sweet potatoes, tomatoes, winter squash, zucchini

Juices: orange juice, pomegranate juice, prune juice, carrot juice, tomato juice, vegetable juice

Yogurt (plain, low fat), milk, dairy products

Beans (black, kidney, pinto, white, etc.)

Fish (cod, haddock, salmon, tuna)

Almonds, pistachio nuts, pumpkin seeds, sunflower kernels

Seafood (scallops, lobster, clams, crab)

Nutrition after Transplant

Long-Term Nutritional Management

Once you are back to a normal schedule, you may notice an improved appetite. It is important to prevent unwanted weight gain from overeating. Remember to include fresh and minimally processed foods in your daily routine that include whole grains, lean meats, low fat dairy products, fruits, and vegetables.

Exercise is also key in achieving and maintaining a healthy weight.

Get started with an exercise program as soon as your doctor allows

Set a goal for 30 minutes of moderate exercise per day.

Examples include brisk walking, bike riding, and swimming.

Food Safety

You are at risk for foodborne illness because your immune system is suppressed after transplant.

To avoid foodborne illness, you must be especially cautious when handling, preparing, and consuming foods. Proper cooking temperatures kill harmful bacteria present in food and the USDA-FDA recommends minimum internal temperatures for the following:

oBeef, veal, pork, lamb: 145 degrees F (allow to rest 3 minutes before carving or eating)

oPoultry, ground poultry: 165 degrees F

oGround beef, veal, pork, lamb: 160 degrees F

oCasseroles, egg dishes: 160 degrees F

oFin fish: 145 degrees F or until opaque flesh flakes with a fork

oScallops: cook until flesh is milky white or opaque and firm

oShrimp, lobster, and crab: cook until they turn red and the flesh is pearly and opaque

oClams, oysters, and mussels: cook until shells open during cooking

oLeftovers: reheat to at least 165 degrees F

oDeli-style meats and hot dogs: reheat until steaming hot or 165 degrees F

oSoups, gravies, and sauces: bring to a boil

oEggs: make sure the yolks and whites are firm, not runny, unless using pasteurized eggs

Nutrition after Transplant

Use the following tips when handling fresh fruits and vegetables:

- Thoroughly rinse fruits and vegetables under running water before eating, peeling, or slicing
- Do not use soap, detergents, or bleach solutions
- Cut away damaged or bruised areas (bacteria can thrive in these places)
- Fresh produce should be refrigerated within 2 hours of peeling or cutting
- Leftover produce should be discarded if left at room temperature for > than 2 hours
- Use clean cutting boards and utensils when handling fresh produce
- If possible, use a separate cutting board for raw meat, poultry, and seafood
- During food preparation, wash cutting boards, utensils, or dishes that have come into contact with fresh produce, raw meat, poultry, or seafood
- Avoid raw sprouts (alfalfa, clover, radish, and mung bean)

Order “Smart” When Eating Out:

- Avoid raw or undercooked fish such as sashimi or some kinds of sushi
- Try vegetarian sushi for a lower risk option
- Avoid cheeses made from unpasteurized (raw) milk
- Choose pasteurized dairy products (milk, cheese, etc.)
- Avoid cold hot dogs
- Reheat hot dogs to steaming hot temperature
- Avoid sandwiches with cold deli or luncheon meat
- Grill or heat sandwiches until meat or poultry is steaming.

Important: Bacteria can spread throughout kitchens and restaurants! Wash your hands with warm soapy water for at least 20 seconds before and after handling food, menus, and buffet utensils.

Medications and Diet

Grapefruit

You should avoid grapefruit if you are taking tacrolimus, cyclosporine, or sirolimus. Grapefruit may alter the amount of drug in your body and may cause the drug to not work correctly.

Herbals and Supplements

Avoid all over-the-counter herbal medicines including green tea or dietary supplements unless otherwise directed by your transplant team. These may interfere with the effects of your prescribed medicines.

Social Support

Receiving a transplant is an exciting adventure hopefully leading to a long and fulfilling life. It is important, however, to remember that transplantation is a treatment of your kidney and/or pancreas disease and not a cure. As a result, you may experience some physical and emotional complications or side effects noted elsewhere in this manual. There are things you and your support team can do to deal with these unexpected crises.

It is okay to have many different emotions after having a transplant. Some days you may be very happy and on top of the world and other days you may be sad and even cry. You may be fearful of potential rejection or wonder about your donor. These mood swings are not uncommon and can be brought on by many different things, including some of the medicines you are taking.

Please notify your transplant team if you experience some or all of these symptoms of depression and you cannot seem to “shake” them:

- Persistent lack of energy
- Irritability and mood swings
- Sense of hopelessness
- Change in eating and/or sleeping patterns
- Inability to enjoy activities you previously enjoyed
- Inability to perform normal daily functions

It is important to share these feelings with your closest friends and family as well as your transplant team. Talking through what you are feeling with someone who has been through a transplant can also be very helpful. There are transplant patients who are willing to be a ‘mentor’ to you if you request it. Please ask your transplant social worker if you are interested. If you received a transplant from a deceased donor, we will be happy to forward a thank-you note to the donor’s family for you.

Often there are financial concerns after transplant. Hopefully, along with help from your transplant team, you have prepared well for the financial obligations of transplant, but unexpected things may come up. It is important to speak with your social worker if you experience insurance changes or unexpected financial difficulties. Your social worker is here to help you transition to life after transplant. They are a valuable resource person and will help you apply for programs and services that you may qualify for after transplant.

Social Support

Your transplant team encourages you to return to activities you formerly participated in before you became sick. This includes returning to work. Aside from the financial benefits, working gives you a place where you can be productive, stay busy and formulate friendships. Please let your social worker know if you need assistance with short term disability claims during your recovery from surgery. Also, there are programs available to you as a transplant patient to assist you in returning to work or school. Remember our goal is for your kidney and/or pancreas to work a very long time, however your insurance and disability benefits may terminate one to two years after your transplant. It is better to have a plan for income and insurance before this happens.

This is an exciting time for you and your new organ. While there may be challenges along the way, the goal of your transplant team is to partner with you to meet those challenges and help you be the most successful transplant patient you can be.

Health Maintenance

Routine health screenings will continue for the rest of your life. You should continue to have the following on a regular basis or as ordered by your doctor: You need to have a primary care physician to assist you with these. If you do not have a primary care physician, ask your local nephrologist who they recommend and contact that office as soon as you can to make an appointment.

Routine health screenings include:

- Eye exams
- Skin cancer checks and use sunscreen
- Vaccinations
- Mammograms
- Pap smear and pelvic exam
- Colon exam or colonoscopy
- Prostate exam
- Bone density testing

Oral exams – remember to notify your doctor before you go to the dentist. You may need to receive an antibiotic before your dental visit.

Foot care for patients with diabetes.

Vaccinations

There are both live and inactivated vaccines. You must avoid any live or attenuated vaccines after your transplant. Be sure ALL of your health care providers know you had a kidney transplant before getting any vaccinations.

Live Vaccines

These should be avoided.

- MMR (measles, mumps, rubella)
- Oral polio vaccine
- Varicella (chickenpox) vaccines
- Adenovirus oral vaccine (military personnel)
- Rotovirus oral vaccine
- Smallpox vaccine
- Typhoid oral vaccine
- Nasal mist flu vaccine (FluMist)
- Yellow Fever vaccine
- BCG vaccine
- Zostavax® shingles vaccine

Please avoid children for two weeks after they have received these vaccines. Live virus bacteria may be spread from the vaccinated child to other people by way of bowel movements, saliva, tears, urine, as well as through the air.

inactivated Vaccines

You may receive these 3 months after your transplant.

Flu vaccine – every year (may be given as early as 1 month after transplant during flu season.)

Pevnar®/Pneumovax®

Diphtheria and tetanus toxoid vaccine (DTaP, tetanus shot, TDap)

Hepatitis vaccines

Shingrix® inactivated shingles vaccine

COVID vaccine

If you have any questions regarding vaccines, please contact the transplant office.

Emergency Preparedness

In case of emergency

Thank you again for allowing Augusta University to serve you in your transplant needs. We would like to provide you with some information in the case of an emergency or natural disaster, such as a hurricane or ice storm. Please follow the checklist to ensure adequate preparation and access to up-to-date information.

Preparation

Make an evacuation plan

If there is an emergency or disaster in your area, be sure you know where to go to be safe.

Items to bring if relocating:

- Up-to-date personal information
- ID and/or driver's license
- Social security card
- Legal documents
- Advance directive, medical power of attorney, etc.
- List of medications and allergies
- Insurance card

Contact information and phone numbers:

- Emergency contact (s):

- _____

- Doctor information:

- Augusta University Solid Organ Transplant: 706-721-2888
- Other: _____

Medication to last you through the emergency and days following:

(recommended: at least 1 week)

- Pill box
- Water resistant containers or Ziploc bags to store medications
- Medication bottles

Necessary emergency supplies such as:

- Medical supplies
- Flashlight and batteries
- First-aid kit
- Bottled or distilled water
- Diabetic testing supplies (if needed): test strips, lancets, glucometer

Emergency Preparedness

Concerning Your Medications

If you run out of your medications, including immunosuppressant or infection prophylaxis medications:

Interstate transfer

Please keep the following information available and up-to-date:

Physician: _____

Pharmacy: _____

Location: _____

Phone number: _____

Insurance ID: _____

RXGroup: _____

RXPCN: _____

RXBIN: _____

Insurance phone: _____

In a Governor-issued State of Emergency

Georgia

- Contact your local pharmacy for an emergency 3-day (72 hours) supply
- Pharmacies can dispense a 3-day supply repeatedly for up to 30 days.
- Keep in mind that emergency fills are up to the individual pharmacist's discretion.

South Carolina

- Contact your local pharmacy for a one-time emergency refill up to a 15-day supply.
- Keep in mind that emergency fills are up to the individual pharmacist's discretion and whether they have enough information on hand.

In a President-issued State of Emergency

Medicare Advantage and Part D patients or people who evacuated without their medications should be able to obtain a full-quantity, early refill at any pharmacy.

Additional Resources

To find nearby open pharmacies in areas impacted by disaster visit the following website:

www.healthcareready.org/rxopen

To find more information about how to prepare for an upcoming emergency, visit:

<http://network6.esrd.ipro.org/home/provider/patient-services/emergency-information/>

Frequently Asked Questions

- How long will it be before my organ starts working?

Your kidney may start working immediately or it may take a few days to begin working properly. You may even need a dialysis treatment while you are hospitalized. Dialysis will not harm your new kidney.

- How long will I be in the hospital?

Usually between 4 to 6 days.

- When can I return to work?

Usually between 6 to 8 weeks. This depends on how fast you heal and how physical your job requirements are.

- What happens at clinic visits?

Your blood will be drawn and the doctors, nurses, pharmacists, dietician and social worker will talk with you about how you are feeling, how your transplant is working, and monitor you for complications. Your clinic visits will be frequent at first.

- Can I return back to my local nephrologist?

You will return to your local nephrologist's care around 3 months after your transplant. You will see your local nephrologist about once every three months thereafter. You will need to return to us at least once a year for a general follow up visit.

- What is rejection and what are the symptoms?

Rejection is when your body tries to attack the new organ. It is your body's natural response to something foreign. Signs of rejection include fever, pain, nausea, vomiting, diarrhea, decreased urine output, swelling in your hands and feet, and/or abnormal lab values. It is very important that you notify your doctor of any of these and keep you clinic appointments as scheduled.

- What are immunosuppressants?

Immunosuppressants are medications that keep your body from rejecting the new organ. You will be a combination of these drugs. It is very important that you take these medications every day as prescribed to keep your body from rejecting the new organ.

- Will I always have to take medications after my transplant?

Yes. Medications will always be needed to keep your body from rejecting the kidney.

Useful Links

Augusta University Transplant Program

www.auhealth.org/transplant

United Network for Organ Sharing

www.UNOS.org

Transplant Living (UNOS patient website)

www.transplantliving.org

Transplant Recipients International Organization

www.trioweb.org

American Transplant Foundation

www.americantransplantfoundation.org

My Transplant Life

www.mytransplantlife.com

National Kidney Foundation

www.kidney.org

Donate Life South Carolina

www.donatelifesc.org

Georgia Transplant Foundation

www.gatransplant.org

Medication Template

www.mymedschedule.com

Prescription Assistance

www.needymeds.org

Medication Assistance Program of Georgia

www.mapuga.com

Pharmacy Coupons

www.GoodRx.com

Kidney Transplant Educational Review

1. Circle the medicines you take to prevent rejection

- A. Tacrolimus (Prograf, Envarsus XR, Astagraf XL)
- B. Valganciclovir (Valcyte)
- C. Prednisone
- D. Nystatin
- E. Mycophenolate (Cellcept, Myfortic)

2. What are possible side effects of tacrolimus (Prograf, Envarsus XR, Astagraf XL)? (Circle all that apply)

- A. Shaking of the hands
- B. High blood levels may cause a rise in your creatinine
- C. High blood pressure
- D. Increased risk of infection
- E. High blood sugar

3. Why is it important to have your tacrolimus (Prograf, Envarsus XR, Astagraf XL) level checked?

(Circle all that apply)

- A. Too much can hurt your kidney
- B. Too little can lead to rejection
- C. Too much can cause side effects
- D. Other medicines may cause your level to change

4. What are possible side effects of mycophenolate (Cellcept, Myfortic) (Circle all that apply)

- A. Increased risk of infection and cancer
- B. Nausea, vomiting, diarrhea
- C. Decreased blood count (anemia)
- D. Increased desire to laugh

5. Females taking CellCept should not get pregnant.

True or False

6. You will have to take the medicines that will prevent rejection for the rest of your life. If you stop

taking them your body will reject your new kidney.

True or False

Kidney Transplant Educational Review

7. If you are unable to take your medicines because of nausea or vomiting, what should you do?

- A. Wait a few minutes and try again
- B. Wait until the next day
- C. Call the Transplant Team at 706-721-2888
- D. None of the above

8. You should call the Transplant Office 706-721-2888 if you have any of the following problems. (Circle all that apply)

- A. Drainage (puss), redness or swelling of your incision
- B. Diarrhea, sore throat, earache, cough, or shortness of breath
- C. Rise in blood pressure
- D. Pain or burning when urinating (passing water); cloudy, bloody or foul smelling urine
- E. Flu-like feelings (chills, aches, tired, headaches, upset stomach)
- F. Nausea and vomiting preventing you from taking your medications
- G. Pain in your abdomen over your kidney

9. What are the signs or symptoms of rejection? (Circle all that apply)

- A. Fever of 100.5 F degrees or more
- B. Weight gain of 2 pounds in a day
- C. Pain or tenderness over your new kidney
- D. Increase in urine output
- E. Flu-like symptoms (chills and aches)
- F. No symptoms at all

10. Call the Transplant Team 706-721-2888 before taking any other medicines not prescribed by them.

True or False

11. What medicines do you take to prevent infection (Circle all that apply)

- A. Tacrolimus (Prograf, Envarsus XR, Astagraf XL)
- B. Valganciclovir (Valcyte) (Alternate: Acyclovir)
- C. Sulfamethoxazole/trimethoprim (Bactrim) (Alternate: Dapsone or Atovaquone)
- D. Nystatin

Kidney Transplant Educational Review

12. What are the signs or symptoms of infection (Circle all that apply)

- A. Fever over 100.5 degrees
- B. Pain or burning on urination
- C. Sore throat, cough
- D. Flu-like symptoms
- E. Redness or drainage from wound

13. What can you do to lower your risk of infection? (Circle all that apply)

- A. Take your anti-infection medications as prescribed
- B. Report to the Transplant team a fever greater than 100.5 degrees, or flu-like symptoms
- C. Stay away from people who are obviously sick
- D. See your dentist twice a year, and do daily tooth and mouth care
- E. Wash your hands

14. Both males and females taking valganciclovir should use pregnancy precautions during therapy and for 90 days after discontinuing therapy.

True or False

15. You should call the Transplant Team if you have any of the signs or symptoms of an infection. True or False

16. Why is it important to come to clinic after your transplant? (Circle all that apply)

- A. To see how you are doing overall
- B. To check your blood work
- C. To check your kidney function
- D. So the Transplant Team can adjust your medications

17. What should you do on the days you come to clinic? (Circle all that apply)

- A. Take all your medicines before you come to clinic except tacrolimus (Prograf, Envarsus XR, Astagraf XL).
- B. Bring tacrolimus (Prograf, Envarsus XR, Astagraf XL) dose with you to take after your blood has been drawn
- C. Bring your medication sheet and all your medicines to clinic
- D. Eat before you come to clinic unless your transplant doctor tells you not to.

Kidney Transplant Educational Review

18. What does your creatinine level mean?

- A. Shows how your liver is working
- B. Shows how your kidney is working

19. After receiving your new kidney you may notice an increase in your appetite. You followed dietary

restrictions before you received your kidney. What restrictions should you follow now?

- A. None. Eat all of the high potassium and phosphorous foods that you want since you have your new kidney.
- B. Follow the Food Guide Pyramid which outlines a healthy eating pattern and restrict sodium as needed.
- C. Follow a high calorie, high fat diet.

20. How will you maintain your health after transplantation? (Circle all that apply)

- A. Take your medicines daily exactly as ordered
- B. Eat a healthy diet
- C. Follow a daily exercise plan
- D. CHECK YOURSELF (watch for signs and symptoms of infection and rejection)
- E. Keep all clinic appointments
- F. See your dentist, eye doctor, and gynecologist regularly
- G. Wear sunscreen when outdoors.

21. What food(s) should be avoided when taking sirolimus (Rapamune), cyclosporine (Gengraf or Neoral)

or tacrolimus (Prograf, Envarsus XR, Astagraf XL)? (circle all that apply)

- A. Grapefruit
- B. Oranges
- C. Green, leafy vegetables
- D. Grapefruit juice

Monitoring Record

Date

Blood
Pressure

Pulse

Temperature

Weight

Fluid from
Drain

Urine Monitoring Record

Date

Time

Urine
Volume

Urine Color

Blood Sugar Record

