

YOUR KIDNEY TRANSPLANT COORDINATOR:

YOUR KIDNEY TRANSPLANT DATE

UPMC Pinnacle Harrisburg Transplant Services

Location: 205 South Front Street
Brady Medical Arts Building, 8th floor
Harrisburg, PA 17104

Office Hours: Monday – Friday
7:30 a.m. to 4 p.m.

Telephone: 877-778-6110
717-231-8700

Option “2” during office hours

Please leave a message and your call will be returned.

Option “0” evenings, weekends, & holidays

The Medical Bureau of Harrisburg (an answering service) will answer your call. Ask to speak to the Transplant Coordinator on call. This is for urgent issues such as signs of rejection or infection.

Fax: 717-231-8753

Website: UPMCPinnacle.com/Transplant

CALL 911 IF YOU ARE HAVING A MEDICAL EMERGENCY

If you are experiencing chest pain, shortness of breath, or excessive bleeding, call 911 and you will be taken to the closest emergency department!

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WELCOME

Congratulations on your recent transplant! Our team is here to provide you with the best service and medical care possible.

Your transplant requires a life-long commitment. It is normal to experience some stress and anxiety after transplant.

The Transplant program at UPMC Pinnacle is committed to provide you with the emotional and practical support that is necessary to get through the transplant process successfully. Along with your firm commitment to faithfully take care of yourself and your transplanted organ, you will have an excellent chance of returning to a normal lifestyle after transplant.

This manual is designed to be a resource for you. It will answer many questions that you may have about your care after transplant. We hope you find this manual useful and informative in the weeks to come.

If you have any questions at all during any point in the process, do not hesitate to contact the transplant office.

Thank you for choosing UPMC Pinnacle. We sincerely hope that your experience here is a rewarding one.

Routine Post-Transplant Expectations

There are multiple expectations that patients must be prepared to meet to ensure success after transplant.

- **Transplant Clinic** – You are expected to return to the transplant clinic for management of the transplanted kidney. Routine transplant clinic visits are based on your transplant risk. Clinic appointments are weekly for the first month post-transplant. Clinic visits are spread out as your condition stabilizes. Post-transplant clinic visits will be annually for the lifetime of the transplanted kidney as required by insurance companies to provide transplant care and medications.
- **Current Medication List** – A current medication list should be maintained at all times reflecting medication adjustments. Always carry a current medication list with you for all doctor appointments and know which doctor is ordering which medication.
- **Nephrologist** – Kidney transplant is just another mode to manage end-stage kidney disease. It is not a cure. The transplant team works closely with your nephrologist. The transplant team will provide most of your management the first year after transplant. Your nephrologist will provide non-transplant care after the first year.
- **Primary Care Physician** – You should continue to see your primary care physician for routine health maintenance such as vaccinations, age-related testing, routine illnesses, DEXA scan, and cholesterol screening/management.
- **Specialists** – You will be encouraged to follow up with various specialists depending on your medical history.
 - Dermatologist – All transplant patients should have an annual dermatology examination to screen for skin cancer.
 - Endocrinologist – If you have a history of type 1 or type 2 diabetes, you should follow up with an endocrinologist. Diabetes is a leading cause of end-stage renal disease. Management of your diabetes is imperative to keeping your transplanted kidney.
 - Urologist – Patients who have recurring urinary tract infections, urinary retention, enlarged prostate, or other urological concerns should follow up with a urologist to get the best care.
- **Insurance** – You need to know who provides your insurance and prescription coverage and have your cards with you for all clinic appointments. Insurance cards should be provided to your pharmacy. All changes in insurance should be provided to the transplant office and your pharmacy.

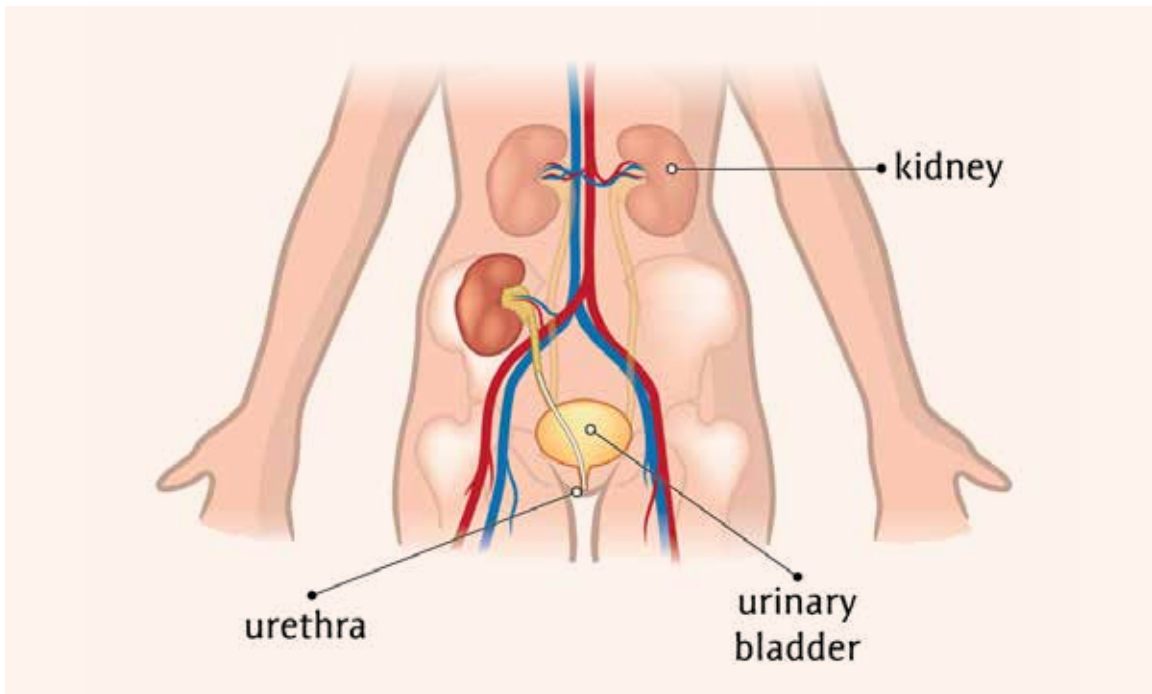
Post-Transplant Incision Care

- The dressing over your transplant incision will be removed before you are discharged from the hospital.
- You will see small tapes (steri-strips) across your incision. These will remain in place until the edges curl up and eventually fall off or are removed by the transplant team.
- **No tub baths, swimming pools, or hot tubs for at least four weeks after your surgery. Absolutely no immersion in water for four weeks.**
- Shower or bathe daily. Your wound care will be once a day during this time.
- When you are in the shower or bathing at the sink use warm soapy water on a clean washcloth and gently wash over your incision. You are to wash over the steri-strips or staples. You may use your normal soap. Rinse the incision with warm water and gently pat the incision dry. **Do not rub!**
- If you have staples on your incision the wound care is the same. The staples will be removed from the incision by the transplant team.
- Do not use lotions, creams, or powders on or near your incision until it is completely healed. This will be at least four weeks.
- Wear loose fitting clothing – example: sweat pants, work out pants, etc. Pants with a waist band, such as jeans will irritate your incision and it will be painful!
- A small amount of clear yellow or pink drainage is normal from your incision. **Contact the Transplant Office if you see redness, swelling, bright red blood, pus, or the incision opens up. The telephone numbers to call are 717-231-8700 or 877-778-6110.**
- If you were provided an abdominal binder post-transplant, you should wear the binder at all times when walking. The binder may be removed during rest periods but put back on when you get up. Binders should not be tight but should provide support of the abdomen. The purpose of the abdominal binder is to support the incision to prevent hernias.

Ureteral Stent

Ureteral Stent

- The urine that is made in your new kidney flows into your bladder through the ureter.
- The ureter that came with your donor kidney is connected to the bladder with a small incision and sutures.
- A ureteral stent (a small, soft tube about the size of a coffee stick) is placed in the ureter to allow the urine to flow from the transplanted kidney to the bladder. This will allow the connection to the bladder to heal. The stent may be in place for two to four weeks.
- You will be on an antibiotic while the stent is in to prevent infection.
- Most patients have no symptoms of the stent being in place. You may notice some blood in your urine, have the sensation of needing to urinate, pain in your back with movement or when you urinate, bladder spasms, or burning with urination. **If you experience any of these symptoms please contact the Transplant Office at 717-231-8700 or 877-778-6110.**



Ureteral Stent Removal

- The ureteral stent will be removed by a specialist called a urologist who works closely with the transplant team. The stent is removed by a procedure called cystoscopy and will be scheduled approximately two to four weeks after transplant.
 - The stent removal will be done in the urologist's office.
 - You may eat, drink, and take medications as you normally would prior to the procedure
 - You will not be put to sleep or have an incision for the cystoscopy.
 - A gel-type anesthetic is used to numb the urethra and a small tube (cystoscope) is inserted into the bladder to make sure the bladder has healed at the connection site.
 - The stent will be pulled out using the scope that was passed into the bladder. You may feel some pressure or brief discomfort at the time of the procedure.
- You may experience mild pain, burning, and /or your urine may be pink in color when you first pass urine after the stent is removed. This is normal and usually improves within a day or two and is helped by drinking plenty of water!
- *You should contact the Transplant Office if you experience any signs or symptoms of a urinary tract infection.*

Potential Complications after Ureteral Stent Removal

Contact the transplant office immediately (877-778-6110 or 717-231-8700) if you have any of the following symptoms:

- You are unable to pass urine within six hours after the stent is removed
- You have a fever greater than 100°F
- You have persistent or increasing burning, pain, frequency, urgency when you urinate
- Your urine becomes bloody and /or you pass blood clots

Rejection

Your body has its own defense system for things that do not belong there called the **immune system**. The immune system fights bacteria, viruses, and foreign tissue like your transplanted kidney. Unfortunately, the immune system cannot tell the difference between the good and bad foreign bodies and will attempt to destroy them. Rejection is the immune system's attempt to rid your body of the transplanted kidney. Missing immunosuppression medications can lead to rejection.

It is important to have your "transplant labs," also known as "routine standing lab orders" done to monitor for signs of rejection. These labs will show if the drug level is in proper range to prevent rejection. The earlier rejection is detected, the easier it is to treat. Rejection can occur without ever noting any signs or symptoms.

Signs and Symptoms of Rejection

- Swelling or tenderness over the transplant site
- Weight gain of four or more pounds overnight or gradually gaining one to two pounds daily for one week. This may include swelling of the ankles and hands
- Fever greater than 100 degrees Fahrenheit
- Flu-like symptoms such as headache, joint aches, nausea, low-grade fever
- Decreased urine output or the urine is "tea-colored"
- Blood pressure greater than 160/95 on three separate checks

If you have any of the above symptoms, contact the transplant office at 877-778-6110 or 717-231-8700.

What Happens if Rejection Starts

Although it is best to avoid any rejection, this is not always possible. Kidney rejection can occur even 20 years after transplant.

- In most cases, a transplant kidney biopsy is needed to confirm rejection. Most transplant biopsies are done as an outpatient using local anesthetics.
- Most rejections are treated in the outpatient setting. Your dosage of anti-rejection medication may be changed.
- You may be given different anti-rejection drugs to prevent or treat rejection. Occasionally you will need admitted to the hospital for IV medication to control rejection.

Infection

The medications you take to suppress or weaken your immune system to prevent rejection may make you prone to infection. Your transplant team will adjust your immunosuppression medications (“transplant medications”) to provide you with the best protection from rejection but allow your body to fight infection. The adjustment of medication is done based on your age, your donor “match,” previous exposure to illnesses, and your current transplant labs.

While the transplant team makes every effort to adjust your medications to prevent you from getting an infection, transplant patients are prone to certain viral, fungal, and bacterial infections. You will receive anti-infective medications to prevent these infections for a designated period.

It is important to have your “transplant labs,” also known as “routine standing lab orders” done to monitor for signs of infection and the drug level to make sure you do not become over immunosuppressed.

Signs and Symptoms of Infection

- Redness, swelling, or drainage from your incision or other wound
- Nausea, vomiting, or diarrhea
- Sneezing, ear ache, cough, or sinus drainage that doesn't go away after 72 hours, or the drainage becomes green or yellow
- Pain or burning with urination, blood or blood clots in urine, the urine becomes cloudy or smells bad
- Fever greater than 100 degrees Fahrenheit

If you have any of the above symptoms, contact the transplant office at 877-778-6110 or 717-231-8700.

Transplant Guidelines

- **Visitation** – You have received very strong medications to suppress your immune system and prevent rejection of your kidney. You are strongly encouraged to avoid crowds and crowded rooms for the first six weeks after transplant. Avoid contact with people who are obviously ill.
- **Pregnancy** – Do not get pregnant within the first year of transplant. Pregnancy increases the risk of rejection and may put your baby at risk for birth defects. Women of childbearing age should use two forms of birth control to prevent pregnancy; the only exceptions are IUD and sterilization. Talk to your transplant team regarding any plans to become pregnant for you and your baby’s safety.
- **Travel** – Discuss any travel plans with the transplant team. Check with the transplant team prior to traveling within the continental United States the first six months. Do not travel outside the continental United States for one year.
- **Vaccinations** – You must never receive live attenuated vaccines. All vaccinations MUST be dead virus vaccines. If you or your provider have any questions about the safety of a vaccination, please contact the transplant office.
 - It is highly recommended and encouraged that you have a flu vaccine annually, a Tetanus vaccine every 10 years, and Pneumococcal/Prevnar vaccine every five years.
 - Use care with family members who were recently vaccinated, especially infants, as the live virus will shed in their stool. Avoid all body fluids and avoid intimate contact for two weeks after they received vaccination.
- **Pets** – You should not be around birds or turtles. These animals carry germs that are extremely dangerous to immunosuppressed people. (Avoid all contact with birdhouses, bird feeders, and bird baths.)

Hygiene

Post-transplant patients must maintain good hygiene to prevent infection. The following practices should be utilized:

Good Handwashing

- You should wash your hands with warm soapy water when they are visibly dirty. Wash for 20 seconds before rinsing.
- You may use alcohol-based sanitizer when hands are not visibly dirty following activities such as handshakes, touching surfaces such as doorknobs or railings, etc.

Skin Care

- Shower or bath daily - Begin by washing your cleanest areas first and move to washing your genitals and bottom last. Always wash from front to back to prevent infection.
- The medications you take may lead to dry skin, sun sensitivity, or acne. Use a gentle hypoallergenic lotion such as Alpha Keri or Lubriderm for dry skin.
- Always apply sunscreen of SPF 30 or higher on all exposed skin before going outside or wear long sleeves and long pants to protect from sun exposure.
- Make it a habit to wear a hat that shades your face, ears, and neck when outside.
- Routinely inspect your skin for any lesions that do not heal, changes in moles, or other skin changes. Report any unusual findings to the transplant team.
- See a dermatologist at least once a year for skin cancer screening.
- Your transplant team strongly discourages getting tattoos, piercings, or using tanning booths.
- Wash cuts and scrapes with warm soapy water and monitor for signs or symptoms of infection.

Hair and Scalp Care

- Your hair and scalp may become dry and brittle secondary to the medications. Use a gentle shampoo and conditioner.
- Avoid permanents, tints, dyes, and bleaching your hair while on high doses of prednisone because it can cause hair breakage.
- Contact the transplant office regarding hair loss. Your transplant team can provide you with information on how to help.

Oral Hygiene

- Brush your teeth twice a day and floss daily. Inspect your mouth for any ulcers, lumps, bleeding, or overgrown gums. Report any unusual finding to your transplant team.
- No dental appointments for the first six months after transplant unless you have a toothache, cavity, break a tooth or lose a tooth. Call the transplant office to obtain a prescription for prophylactic antibiotics prior to the dental visit.
- Begin seeing your dentist twice a year six months after transplant. You will need to take an antibiotic for EVERY dental visit including a cleaning. Call the transplant office at least one week before your scheduled dental appointment to obtain a prescription for your antibiotic.



MEDICATION TIPS AND TYPES

A photograph of a doctor in a white lab coat holding a yellow pill bottle. The image is overlaid with a semi-transparent blue filter. The word "MEDICATIONS" is written in large, white, sans-serif capital letters across the center. A solid blue vertical bar is on the left side.

MEDICATIONS

Transplant Medication Tips and Guidelines

1. The transplant team will teach you about your transplant medications. Be sure to ask questions and request further explanation as often as you need to!
2. Medication sheets in the teaching manual do not cover every use, caution, or side effect. See your doctor, coordinator, or pharmacist for additional information or if you are having any problems with your medications.
3. It is important to learn as much as you can about your new medications. Try to know the name, dose, reason for use, and possible side effects of each medication.
4. Medications should be taken at the same time every day. If you miss a dose of medication, take it as soon as you remember. If it is almost time for the next dose, skip the missed dose and continue with your normal schedule. **DO NOT DOUBLE UP ON DOSES!**
5. **NEVER STOP TAKING A MEDICATION WITHOUT TALKING TO THE TRANSPLANT TEAM**, even if you are experiencing side effects.
6. Many medications cause serious side effects and/or unsafe interactions in patients taking anti-rejection medications. **NEVER TAKE NEW MEDICATIONS WITHOUT SPEAKING TO THE TRANSPLANT TEAM FIRST.** The transplant team will check for potential drug interactions.
7. Keep track of how much medication you have and contact your pharmacy to order refills before you run out. Take extra medication with you on vacations and trips.
8. Keep a list of current medications in your wallet or purse.
9. Know your pharmacy.
 - Know the name and contact information (telephone number and address)
 - Hours of operation
 - Will medication be in stock or need ordered in
 - How early can medications be refilled
 - Will they accept my insurance

DIET AND NUTRITION



Hydration

It is important for you to keep yourself well hydrated.

- Drinking plenty of fluids will help keep your transplanted kidney functioning properly!
- ALWAYS drink when you are thirsty.
- Drink at least 64 ounces (eight 8-ounce glasses) of fluids a day. Drink this even if you do not feel thirsty. To help you track fluid intake, fill a container with 64 ounces of water and place in refrigerator. When the container is empty, you will have met your goal.
- Use the same fluid cup/container so you can accurately measure how much fluid you are drinking.
- Water is the best fluid to drink. Limit the following:
 - Caffeine: It is a natural diuretic and can cause you to lose too much fluid; one to two cups (8 to 16 ounces) a day is acceptable; keep your intake consistent.
 - Alcohol: You are on potent medications that can be affected by alcohol intake and it can cause you to lose too much fluid. One alcoholic beverage a day is acceptable.
 - Soda: Many sodas are high in carbohydrates/sugars and caffeine.
 - Juices: Many juices are high in carbohydrates/sugars.

There are times you will need to drink even more than usual. Examples are:

- Exercise
- Dry, cold or hot, humid weather
- Fevers and/or diarrhea
- Antibiotic use

The most frequent phone call we make is to ask you to drink more water!

Nutrition

A nutritionist will review the types of dietary changes you will have to make in order to stay as healthy as possible after transplant.

Some dietary restrictions will be necessary due to the anti-rejection medications you are taking and may vary from patient to patient.

FOOD HANDLING:

- Always wash your hands and surfaces prior to touching any foods.
- DO NOT thaw food on the kitchen counter/sink. Thaw food in the refrigerator or microwave. When thawing in the microwave, food must be cooked immediately.

DO NOT EAT:

- Grapefruit, pomegranate, or star fruit (flavorings, oils, fruit, or juice). It will affect your medication levels.
- Sushi or any raw meats/seafood, undercooked poultry/eggs
- Raw fruits and vegetables without first washing them in warm soapy water to clean off any molds or fungus
- Cooked foods sitting at room temperature for more than 30 minutes. Put leftovers in refrigerator or freezer as soon as possible.
- Food that is spoiled or moldy; food that is past its “use by” date. Throw leftovers away after three days.
- Unpasteurized foods
- Foods from buffets or areas where foods are sitting out
- Fresh sprouts (bean, alfalfa)

There is nothing you cannot have in moderation (unless informed differently from the transplant team).

The main goals in your diet should be to:

- Promote and maintain a healthy lifestyle
- Maintain an ideal body weight
- Control high blood pressure
- Control blood lipids (cholesterol and triglycerides)
- Control blood sugar levels

Carbohydrates (Carbs)

Eat good quality carbohydrates such as complex carbohydrates to feed your body with the nutrients it needs.

Examples of good carbs:

- 100 percent whole grains (wheat bread, rye, barley, quinoa, oats)
- Brown rice
- Seeds/Nuts
- Legumes (chick peas, lentils, kidney beans, soybeans, peas)
- Fruits
- Vegetables (yams, sweet/regular potatoes, zucchini, carrots, beans, onions, asparagus)
- Dairy products

Limit: White bread, white rice, pasta, foods/drinks high in sugar

Fats

When eaten in moderation good fats can help reduce your bad cholesterol, provide nutrients to help build cells in your body, and are full of vitamins.

Examples of Good Fats:

- Avocados
- Olives
- Nuts (almonds, pecans, hazelnuts, peanuts, cashews, macadamia, walnut)
- Seeds (sunflower, sesame, pumpkin, flaxseed)
- Fish (salmon, tuna, trout, mackerel, herring)
- Tofu
- Oils (Olive, canola, sunflower, peanut, sesame)

Limit Bad Fats:

- Fried foods
- Butter/Margarine
- Vegetable shortening
- Pre-mixed foods (pancakes, cake mix, etc.)
- If the package says “partially hydrogenated”

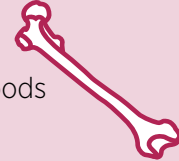
PHOSPHORUS

Tips for People with Chronic Kidney Disease (CKD)



What Is Phosphorus?

Phosphorus is a mineral that helps keep your bones healthy. It also helps keep blood vessels and muscles working. Phosphorus is found naturally in foods rich in protein, such as meat, poultry, fish, nuts, beans, and dairy products. Phosphorus is also added to many processed foods.



Why Is Phosphorus Important for People with CKD?

When you have CKD, phosphorus can build up in your blood, making your bones thin, weak, and more likely to break. It can cause itchy skin, and bone and joint pain. Most people with CKD need to eat foods with less phosphorus than they are used to eating.

Your health care provider may talk to you about taking a phosphate binder with meals to lower the amount of phosphorus in your blood.

Foods *Lower* in Phosphorus

- Fresh fruits and vegetables
- Rice milk (not enriched)
- Breads, pasta, rice



- Corn and rice cereals
- Light-colored sodas/pop
- Home-brewed iced tea

Foods *Higher* in Phosphorus

- Meat, poultry, fish
- Dairy foods
- Beans, lentils, nuts



- Bran cereals and oatmeal
- Colas
- Some bottled iced tea

PHOSPHORUS

How Do I Lower Phosphorus in My Diet?

- Know what foods are lower in phosphorus (see page 19).
- Eat smaller portions of foods high in protein at meals and for snacks.
 - Meat, poultry, and fish: A cooked portion should be about 2 to 3 ounces or about the size of a deck of cards.
 - Dairy foods: Keep your portions to ½ cup of milk or yogurt, or one slice of cheese.
 - Beans and lentils: Portions should be about ½ cup of cooked beans or lentils.
 - Nuts: Keep your portions to about ¼ cup of nuts.
- Eat fresh fruits and vegetables—if you have not been told to watch your potassium.
- Many packaged foods have added phosphorus. Look for phosphorus, or for words with PHOS, on ingredient labels, like the one below. Choose a different food when the ingredient list has PHOS on the label.



Ingredients: Potatoes, Vegetable Oil (Partially Hydrogenated Soybean Oil), Salt, Dextrose, Disodium Dihydrogen Pyrophosphate...

Examples of Foods that May Have Added Phosphorus

- Fresh* and frozen uncooked meats and poultry
- Chicken nuggets
- Baking mixes
- Frozen baked goods
- Cereals, cereal bars
- Instant puddings and sauces

* Ask the butcher to show you which fresh meats do not have added phosphorus.

For more information, visit www.nkdep.nih.gov or call 1-866-4 KIDNEY (1-866-454-3639).

The National Kidney Disease Education Program (NKDEP) encourages people to get tested for kidney disease and educates those with kidney disease and their providers about treatments that can help delay or prevent kidney failure. NKDEP is a program of the National Institutes of Health.



POTASSIUM

Tips for People with Chronic Kidney Disease (CKD)



What Is Potassium?

Potassium is a mineral that helps your nerves and muscles work the right way.

Why Is Potassium Important for People with CKD?

In some people with CKD, the kidneys may not remove extra potassium from the blood. Some medicines also can raise your potassium level. Your food choices can help you lower your potassium level.

How Do I Know My Potassium Is High?

People often do not feel any different when their potassium is high. Your health care provider will check the level of potassium in your blood and the medicines you take. The level of potassium in your blood should be between 3.5 to 5.0.*

How Do I Lower Potassium in My Diet?

- Eat smaller portions of foods high in protein at meals and for snacks: meat, poultry, fish, beans, dairy, and nuts.
- Use spices and herbs in cooking and at the table. Salt substitutes often contain potassium and should not be used.
- Potassium chloride can be used in place of salt in some packaged foods, like canned soups and tomato products. Limit foods with potassium chloride on the ingredient list.
- Drain canned fruits and vegetables before eating.
- If you have diabetes, choose apple, grape, or cranberry juice when your blood sugar goes down.

Eat These Foods	Instead of These Foods
<ul style="list-style-type: none"> • White rice • White bread and pasta • Cooked rice and wheat cereals • Rice milk (not enriched) 	<ul style="list-style-type: none"> • Brown and wild rice • Whole wheat bread and pasta • Bran cereals • Cow's milk

**Normal ranges may vary.*

POTASSIUM

How Do I Lower Potassium in My Diet?

- Choose fruits and vegetables that are lower in potassium. Have very small portions of foods that are higher in potassium, like one slice of tomato on a sandwich, a few slices of banana on cereal, or half of an orange.

Fruits and Vegetables *Lower* in Potassium (200 mg or Less*)

FRUITS: Apples/apple juice/applesauce • Apricots (canned)/apricot nectar • Berries • Cranberry juice • Fruit cocktail • Grapes/grape juice • Grapefruit/grapefruit juice • Honeydew melon • Lemons and limes • Mangoes • Papayas • Pears • Peaches • Plums • Pineapple • Rhubarb • Tangerines • Watermelon

VEGETABLES: Alfalfa sprouts • Bell peppers • Bamboo shoots (canned) • Broccoli (fresh) • Cabbage • Carrots • Cauliflower • Celery and onions (raw) • Corn • Cucumber • Eggplant • Green beans • Kale • Lettuce • Mushrooms (fresh) • Okra • Summer squash (cooked)

Fruits and Vegetables *Higher* in Potassium (More than 200 mg*)

FRUITS: Apricots (fresh) • Bananas • Cantaloupe • Dates • Nectarines • Kiwi • Prunes/prune juice • Oranges/orange juice | Raisins

VEGETABLES: Acorn and butternut squash • Avocado • Baked beans • Beet and other greens • Broccoli (cooked) • Brussels sprouts (cooked) • Chard • Chile peppers • Mushrooms (cooked) • Potatoes • Pumpkin • Spinach (cooked) • Split peas, lentils, beans • Sweet potatoes, yams • Vegetable juice • Tomatoes/tomato juice/tomato sauce

**Potassium level is based on one serving. One serving of fruit is one small piece; ½ cup fresh, canned, or cooked fruit; ¼ cup dried fruit; or ½ cup juice. One serving of vegetables is ½ cup fresh or cooked vegetables, 1 cup raw leafy vegetables, or ½ cup juice.*

For more information, visit www.nkdep.nih.gov or call 1-866-4 KIDNEY (1-866-454-3639).

The National Kidney Disease Education Program (NKDEP) encourages people to get tested for kidney disease and educates those with kidney disease and their providers about treatments that can help delay or prevent kidney failure. NKDEP is a program of the National Institutes of Health.

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Magnesium



Magnesium is a naturally occurring mineral.

Why Is Magnesium Important?

It's important for many processes in the body such as the muscle and nerve function, blood pressure and heart regulation.

How Do I Know My Magnesium Is Low?

People often do not feel any different when their magnesium is low. Your health care provider will check the level of magnesium in your blood. The level of magnesium in your blood should be between 1.8 to 2.5.*

How Do I Raise Magnesium in My diet?

Fruits & Vegetables:

Avocados	Lima beans	Pink beans	Soybeans
Adzuki beans	Lupins	Pinto beans	Spinach
Banana	Navy beans	Potato with skin (baked)	Swiss Chard
Chickpeas	Pigeon peas	Raisins	White beans
Great Northern beans		Seaweed	Yellow beans
Kidney beans			
Lentils			

Grains and Grain Products:

Amaranth	Oats (whole grain)	Rye flour	Whole wheat pasta
Barley	Oat bran	Wheat bran	High bran cereals:
Buckwheat flour	Rice (brown)	Wheat germ	All Bran, Bran Buds,
Granola	Rice bran	Whole wheat flour	Raisin Bran

Nuts and Seeds (Dried): Dried nuts and seeds provide more magnesium than roasted

Almonds	English Walnuts	Pistachios nuts	Sesame seeds
Black Walnuts	Hazel nuts	Pecans	
Brazil nuts	Macadamia nuts	Pumpkin seeds	
Cashews	Peanuts	Sunflower seeds	

Other:

Hummus	Soybean Products:
Molasses	Flour, Natto, Misco, Tempeh, Raw Tofu

SODIUM

Tips for People with Chronic Kidney Disease (CKD)



What Is Sodium?

Sodium is a part of salt. Sodium is found in many canned, packaged, and “fast” foods. It is also found in many condiments, seasonings, and meats.



Why Is Sodium Important for People with CKD?

Eating less sodium helps lower blood pressure and may slow down CKD. Talk with your provider about the right blood pressure goal for you.

One of the kidneys’ important jobs is to filter sodium out of the body and into the urine. Damaged kidneys cannot filter as well as healthy kidneys can. This can cause sodium to stay in your body and make your blood pressure go up.

How Much Sodium Should I Eat Every Day?

Most people need to eat less sodium than they are eating. Aim for less than 1,500 milligrams of sodium each day. Much of the sodium you eat does not come from a salt shaker. Sodium is added to the prepared foods you buy at the supermarket or at restaurants.

Foods *Lower* in Sodium

- Fresh or frozen fruits and vegetables • Rice, noodles • Cooked cereal without added salt
- Fresh meat, poultry, seafood • Low-fat, low-sodium cheese • Unsalted nuts
- Low-and reduced-sodium frozen dinners, peanut butter, salad dressings • Air-popped popcorn

Foods *Higher* in Sodium

- Bacon, corned beef, ham, hot dogs, luncheon meat, sausage • Bouillon, canned, and instant soups
- Boxed mixes, like hamburger meals and pancake mix • Canned beans, chicken, fish and meat
- Canned tomato products, including juice • Canned and pickled vegetables, vegetable juice
- Cottage cheese • Frozen meals • Frozen vegetables with sauce • Olives, pickles, relish
- Pretzels, chips, crackers, salted nuts • Salt and salt seasonings, like garlic salt
- Seasoning mix and sauce packets • Soy sauce • Salad dressings, bottled sauces, marinades
- Some ready-to-eat cereals, baked goods, breads • Ready-to-eat boxed meals and side dishes

SODIUM

How Do I Lower the Sodium in My Diet?



- Buy fresh foods more often.
- Cook foods from scratch, instead of eating prepared foods, “fast” foods, frozen dinners, and canned foods that are higher in sodium.
- Use spices, herbs, and sodium-free seasonings in place of salt. Check with your health care provider about using salt substitutes.
- Rinse canned vegetables, beans, meats, and fish with water to remove extra sodium.

Always read the Nutrition Facts label to compare foods.

Choose foods with the lowest Percent Daily Value (%DV) for sodium. The %DV lets you see if a food is high or low in sodium. **5% or less is low and 20% or more is high.**



- Check the label on fresh meats and poultry. Sodium additives can be used to make meat last longer.
- Look for foods labeled: sodium free, salt free, very low sodium, low sodium, reduced or less sodium, light in sodium, no salt added, unsalted, and lightly salted.

Nutrition Facts	
Serving Size: 1 cup (228g)	
Servings Per Container: 2	
Amount Per Serving	
Calories: 260	Calories from Fat: 120
<small>% Daily Value*</small>	
Total Fat 13g	20 %
Saturated Fat 5g	25 %
<i>Trans</i> Fat 2g	
Cholesterol 30mg	10 %
Sodium 660mg	28 %
Total Carbohydrate 31g	10 %
Dietary Fiber 0g	0 %
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%
Calcium 15%	Iron 4%
<small>* Percent Daily Values are based on a 2,000 calorie diet.</small>	

There may be more than one serving in the package, so be sure to check serving size.

This number tells you the % DV for sodium in one serving.

Check the Ingredient Label for Added Sodium

- Salt (sodium chloride) • Monosodium glutamate or MSG baking soda (sodium bicarbonate)
- Baking powder • Sodium nitrate • Sodium sulfite • Sodium phosphate • Sodium alginate
- Sodium benzoate • Sodium hydroxide • Sodium propionate

For more information, visit www.nkdep.nih.gov or call 1-866-4 KIDNEY (1-866-454-3639).

The National Kidney Disease Education Program (NKDEP) encourages people to get tested for kidney disease and educates those with kidney disease and their providers about treatments that can help delay or prevent kidney failure. NKDEP is a program of the National Institutes of Health.



Use Herbs and Spices Instead of Salt



Try these herbs and spices to season your food instead of salt. Start with small amounts to see if you like them.

- **Allspice:** Use in meats, fish, poultry, soups, stews, and desserts
- **Anise:** Use in breads, snacks, soups, stews, vegetables, meats, and poultry
- **Annatto Seeds:** Use in vegetables, meats, poultry, and rice
- **Bay Leaf:** Use in soups, stews, meats, poultry, seafood, and sauces
- **Basil:** Use in soups, salads, vegetables, fish, and meats
- **Cayenne Pepper:** Use in meats, poultry, stews, and sauces
- **Celery Seed:** Use in fish, salads, dressings, and vegetables
- **Chili Powder / Chile Pequeño:** Use in meats, poultry, vegetable, fish and stews
- **Cilantro:** Use in meats, sauces, stews, and rice
- **Cinnamon:** Use in salads, vegetables, breads, and snacks
- **Clove:** Use in soups, salads, and vegetables
- **Cumin:** Use in meats and poultry
- **Curry Powder:** Use in meats, shellfish, and vegetables
- **Dill Weed and Dill Seed:** Use in fish, soups, salads, and vegetables
- **Garlic:** Use in soups, stews, salads, vegetables, meats, poultry, seafood, and sauces



- **Garlic Powder:** Use in meats, poultry, fish, vegetables, salads, soups, and stews
- **Ginger:** Use in soups, salads, vegetables, and meats
- **Lemongrass:** Use in soups, stews, meats, poultry, seafood, and sauces
- **Marjoram:** Use in soups, salads, vegetables, beef, fish, and poultry
- **Nutmeg:** Use in vegetables and meats
- **Onion Powder/Green Onion:** Use in meats, poultry, seafood, soups, and salads
- **Oregano:** Use in soups, salads, vegetables, meats, and poultry
- **Paprika:** Use in meats, fish, poultry, and vegetables
- **Parsley:** Use in salads, vegetables, fish, and meats
- **Rosemary:** Use in salads, vegetables, fish, and meats
- **Saffron:** Use in breads, snacks, soups, stews, poultry, seafood, sauces, and rice
- **Sage:** Use in soups, salads, vegetables, meats, and poultry
- **Tamarind:** Use in soups, poultry, sauces, and rice
- **Thyme:** Use in salads, vegetables, fish, and poultry
- **Vinegar:** Use in soups, salads, vegetables, meats, and poultry

THE TRANSPLANT TEAM

Transplant Surgeons and Providers

Harold C. Yang, MD, PhD
Surgical Director/Attending Surgeon

Danielle Ladie, MD, MPH
Attending Surgeon

Manpreet Singh, MD
Nephrologist

William Hoffman, MD
Nephrologist

Mary Waybill, MD
Research/Transplant Nephrology

Rhonda Saylor, MSN, CRNP
Nurse Practitioner

Stephanie Midile, MSN, CRNP, CCTC
Nurse Practitioner

Transplant Director

Nurse Manager

Pre-Transplant Coordinators

Living Donor Transplant Coordinator

Post-Transplant Coordinators

Research Coordinator

Transplant Social Workers

Transplant Financial Coordinator

Transplant Pharmacist

SURGEONS

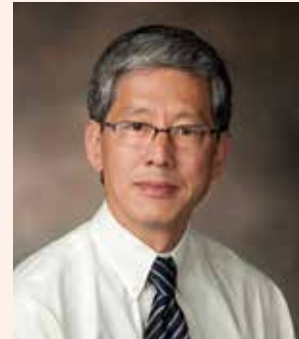
Harold Yang, MD, PhD

Dr. Yang received his medical degree at the University of Chicago, where he also completed his surgical residency. His fellowship was completed at Massachusetts General Hospital. His specialties include kidney and pancreas transplantation.

Dr. Yang was the Assistant Professor of Surgery at the Milton S. Hershey Medical Center from 1987 until 1995. From 1995 to 1999, Dr. Yang was Chief of the Department of Transplantation at the Penn State Milton S. Hershey Medical Center.

Certified by the American Board of Surgery, Dr. Yang entered private practice and joined the UPMC Pinnacle Surgical Staff in October 1999. He currently sits on several hospital committees.

Under his leadership, transplantation in central Pennsylvania has experienced both growth and great success.



Danielle Ladie, MD, MPH

Dr. Ladie earned her bachelor of science degree from Penn State University and received her medical training at St. George's University, where she received the Arnold P. Gold Humanism in Medicine Award. She is fellowship trained in transplant surgery from the University of Virginia and completed her residency at UPMC Pinnacle, where she served as chief resident.

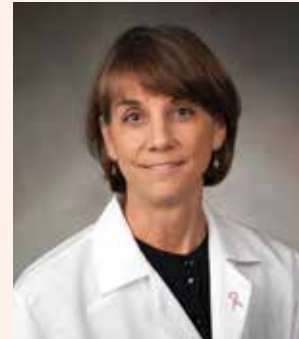


NEPHROLOGISTS

Mary Waybill, MD

Dr. Waybill received her medical degree at Temple University School of Medicine in Philadelphia. She completed her residency at the Medical College of Virginia. Dr. Waybill also completed her fellowship in nephrology at the Medical College of Virginia. Dr. Waybill was the Assistant Professor of Medicine at the Penn State Milton S. Hershey Medical Center from 1990-1993, and 1995-2000. Dr. Waybill entered a private nephrology practice from 2000-2002.

Dr. Waybill oversees the transplant research protocols and participates in the care of complex medical issues after transplant. Dr. Waybill has been on staff at UPMC Pinnacle since 2000, and is certified by the American Board of Internal Medicine in nephrology.

**Manpreet Singh, MD**

Dr. Singh completed his nephrology fellowship at Boston University and a Transplant Nephrology fellowship at University of California, San Francisco. A graduate of Government Medical College in Patiala, India, he completed his residency at SUNY Stony Brook Medical Center in New York.

**William Hoffman, MD**

Dr. Hoffman completed his nephrology fellowship at the University of Pittsburgh, where he was the chief fellow. Additionally, he completed a fellowship in transplant nephrology and a research fellowship in transplant immunology through the University of Pittsburgh. A graduate of the University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, Dr. Hoffman completed his residency at University of Rochester, Strong Memorial Hospital.



PHARMACIST

The transplant pharmacist is a pharmacist with specific expertise in transplant pharmacology. The pharmacist actively participates in your medication management and provides medication education both before and after transplant.

Management of the complex medications taken after transplant is a vital and important component of your care. Both before and after transplant, the pharmacist will review your medications for potential drug interactions, help prevent and monitor for adverse reactions, work with the physicians to adjust medication doses, and help individualize your medication plan.

The role of the transplant pharmacist is to help you and your family understand the importance of your medications and to address concerns or questions you may have about your medications.

TRANSPLANT COORDINATORS

The transplant coordinators will be your main source of contact with the transplant team. The coordinator is a Registered Nurse with specialized education who will be an integral part of your transplant process both before and after transplant.

Before transplant, your pre-transplant coordinator will guide you through the education and work-up process. Your pre-transplant coordinator will be your contact person for any questions or concerns while you are waiting for your transplant.

After transplant, the post-transplant coordinator will educate you about how to care for yourself. The post-transplant coordinator will also monitor your lab work and care after transplant, as well as answer any questions that may arise.

LIVING DONOR COORDINATOR

The living donor coordinator guides living donors through all phases of the donation process. The living donor coordinator is your resource for all questions and concerns about living donation.

RESEARCH TRANSPLANT COORDINATOR

The research transplant coordinator is a transplant nurse who coordinates and oversees patients who participate in research protocols.

TRANSPLANT SOCIAL WORKERS

The transplant social workers will assist you in preparing yourself socially for a transplant. They will assess your social, financial, and support systems to ensure that your transplant can be a successful experience. They will also be available after transplant to assist you with obtaining the needed medications as well as addressing other social concerns you may have.

TRANSPLANT FINANCIAL COORDINATORS

The transplant financial coordinators will review your insurance coverage for transplant and medications after transplant. They may also be able to make recommendations for additional coverage to minimize your out-of-pocket expense after transplant.

DAILY LOG

Daily log

DATE	WEIGHT	GLUCOSE BREAKFAST	TEMPERATURE AM	BP AM	HR AM	GLUCOSE LUNCH	GLUCOSE SUPPER	TEMPERATURE PM	BP PM	HR PM	GLUCOSE BED

Daily log

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DAILY LOG