

# Chapter 3: Medication

## Introduction

Taking medications as directed is important for your new kidney and general health. This chapter explains medications, including their use, dose and side effects. You may be prescribed medications that are not listed in the booklet.

Talk with your doctor or transplant coordinator if you have question about any of your medications.

## General Guidelines

Your medications will vary, from immunosuppressants (anti-rejection medications) to supplements (minerals). There are many different types of medications available. Your medications are prescribed to meet your needs.

The following are general guidelines to help you get used to your new routine.

- Follow the same time schedule for taking your medications each day.
- Never stop taking any medication without first talking with your nephrologist. Stopping your medication can lead to complications. Even if you are feeling well or if you had a kidney transplant many years ago, you need to keep taking your medication exactly as directed.
- Talk with your nephrologist before you start any new prescription medication, supplement, over-the-counter medication, natural product or herb. Your nephrologist needs to approve all new medications to make sure they don't change how your immunosuppressant medications work — this includes any medications prescribed by any other doctor for any reason.
- Do not take over-the-counter pain relievers (aspirin, ibuprofen or naproxen) without your nephrologist approval. You may use over-the-counter acetaminophen as directed on the package for minor aches and pains.
- Never make changes to your medication doses by yourself. Talk with your nephrologist if you have side effects or concerns.
- Side effects are possible for each medication you take. This does not mean you will have side effects. But you should understand what may happen. Talk with your nephrologist about any side effects you think may be caused by your medication.

The chance of side effects from a medication decreases as your dose is decreased. Lower doses usually cause less severe side effects.

- Do not take antacids (such as Tums<sup>®</sup>, Rolaids<sup>®</sup>, Tums<sup>®</sup> or Mylanta<sup>®</sup>) within 2 hours of taking your medication. Antacids may decrease your body's ability to absorb your regular medications.
- Do not share your medications with others.
- Do not take medications that have been prescribed for someone else.
- Keep all medications in the original prescription bottle.
- When you pick up new prescriptions, make sure the instructions match how you are taking them. If not, check with your transplant coordinator or doctor who prescribed the medication.
- In the first 6 to 12 months after transplant it is common to make frequent adjustments to your medications. Follow instructions you receive from your transplant team on how and when to take your medications. Talk with your transplant coordinator if you have any questions about your medications.
- Fill all medication prescriptions at one pharmacy, if possible.
- Do not run out of any prescription. Call for refills when you have 7 to 10 days left of any medication. It may be difficult to find a late-night pharmacy or get prescriptions filled during holidays.
- If you need to have prescriptions transferred to a different pharmacy, call the new pharmacy. Tell them what pharmacy has prescriptions you want transferred. The new pharmacy will call to have the prescriptions transferred. The Kidney Transplant Clinic nurses cannot transfer prescriptions between pharmacies.
- If your insurance changes, call your insurance provider to find out if you are required to use a specific pharmacy. If your prescriptions can be transferred, follow the directions in the bullet point above. If you cannot transfer your prescriptions or do not have refills, call the Kidney Transplant Clinic as soon as possible to help prevent running out of medication.
- If you are traveling, get any refills at least 1 week before you travel. Keep your medications with you, such as a carry-on bag if you are flying or taking a bus. Do not put your medications in checked luggage.
- Keep your medications out of reach of children or pets.

Talk with your nephrologist or transplant coordinator if you have any questions, concerns or problems with any medications, how to take them and any side effects.

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## Herbal Products

- Avoid herbal products and herbal teas. The U.S. Food and Drug Administration lists these as dietary supplements. They have not been tested for side effects and interactions with medications.
- Herbal products could interact with your transplant medications. This may harm your transplanted kidney.
- Talk with your nephrologist before you take any herbal product or herbal tea.
- Avoid green and white tea as they can boost your immune system.

## Immunosuppressants (Anti-rejection Medications)

Your body has a natural defense called the immune system. It helps to protect you from things that should not be in your body such as foreign objects such as viruses, bacteria and cancer.

Your immune system sees the new kidney as foreign or non-self. Since the immune system's job is to fight off foreign objects, it wants to fight off the kidney. This is called rejection because it is your body rejecting the kidney.

**To keep your immune system from attacking the kidney, you will need to take special medications for the rest of your life. These medications are called immunosuppressants or anti-rejection medications.**

The following are types of anti-rejection medications. Your transplant coordinator will go over the medications you will be taking.

## □ Tacrolimus (Prograf®)

### ■ Use

- This medication helps prevent your body from rejecting the new kidney.

### ■ Dose

- Take this medication as prescribed.
- Take this medication once every 12 hours.
- The dose will be adjusted based on your levels and goal range.

### ■ Tips

- Never skip a dose of tacrolimus.
- You will need to have your blood levels checked on a regular basis. If the level of tacrolimus is too low, your risk of rejection increases. If the level is too high, your risk of infection and side effects increases.
- When having your tacrolimus level drawn, be sure it is as close to 12 hour trough as possible. This means that you should have your lab drawn about 12 hours after your last dose and before you take next scheduled dose.
  - For example, if you take tacrolimus at 8 a.m. and 8 p.m., you should have your labs drawn at about 8 a.m. before you take your morning dose.
- Store this medication at room temperature.
- Do not take tacrolimus with:
  - grapefruit, grapefruit juice or products that contain grapefruit juice (such as Fresca® or Squirt®).
  - pomegranates, pomegranate juice or products that contain pomegranate juice.

### ■ Side effects

- Side effects may include:
  - increased blood pressure and blood glucose
  - nausea, vomiting, diarrhea
  - slight tremors (shaking) of your hands.

## ❑ Tacrolimus (Envarsus®)

- Information is the same as tacrolimus (Prograf®) except you only take Envarsus one time a day, in the morning.
- Since Envarsus is taken only once daily, your level should be a 24 hour trough.
  - For example, if you take tacrolimus at 8 a.m., you should have your labs drawn at about 8 a.m. and before you take your morning dose.
- Your transplant coordinator will review which type of tacrolimus has been prescribed for you.

## ❑ Mycophenolate Mofetil (CellCept®)

- **Use**
  - This medication helps prevent your body from rejecting the new kidney.
- **Dose**
  - Take this medication as prescribed.
  - Take this medication once every 12 hours.
  - The dose is based on several things and will be adjusted if needed.
- **Tips**
  - Never skip a dose of mycophenolate mofetil.
  - Take the tablets whole. Do not cut, crush or break them.
  - You may be scheduled to have levels done of CellCept. This is usually done once and will include several blood draws in one day. Your transplant coordinator will give you details if you will be having this done.
- **Side effects**
  - Side effects may include:
    - decreased appetite
    - nausea, vomiting, diarrhea.

## ❑ Mycophenolate Sodium (Myfortic®)

- Myfortic is similar to CellCept.
- You may take it if you have side effects from CellCept.
- Your transplant coordinator will review which type of mycophenolate has been prescribed for you.

## ❑ Sirolimus (Rapamycin®, Rapammune®)

- **Use**
  - This medication helps prevent your body from rejecting the new kidney.
- **Dose**
  - Take this medication once a day in the morning.
  - Your dose will be adjusted based on your levels and goal.
- **Tips**
  - Never skip a dose of sirolimus.
  - Take this medication at the same time every day.
  - Do not take with grapefruit, grapefruit juice, pomegranates, or pomegranate juice.
  - Your sirolimus level should be 24 hour trough. This means your lab should be drawn about 24 hours after your last dose and before you take your morning dose of medication.
- **Side effects**
  - increased cholesterol
  - headache
  - tremors
  - skin rash or acne
  - high blood pressure
  - upset stomach, nausea, vomiting, constipation, diarrhea
  - low white blood cell count.

## □ Prednisone

### ■ Use

- This medication helps prevent your body from rejecting the new kidney.

### ■ Dose

- Take this medication once a day in the morning with food.
- Your dose will slowly decrease after the transplant. Your dosage will be based on a schedule called a taper. Your transplant coordinator will explain the taper schedule with you.

### ■ Tips

- Never skip a dose of prednisone.
- Follow your prednisone taper. If you are scheduled to have a decreased dose, do so on the day scheduled.
- Never take a lower dose of prednisone on your own.
- Prednisone may change your appetite and it may cause weight gain. Try to eat 3 balanced meals a day. If you feel hungry between meals, eat snacks low in calories and fat such as fruit or vegetables. Talk with your nephrologist or transplant coordinator if you need help with meal planning.

### ■ Side effects

- Side effects should be fewer or less severe with lower doses of prednisone.
- You may feel bloated because your body will retain (hold) water and salt.
- You may have mood swings while taking the higher doses of prednisone. (Call your doctor if they are severe.)
- You may have rounding of your face and a build-up of fat in your back or shoulders. This should get better with lower doses of prednisone.
- Prednisone may cause a loss of calcium. This can weaken your bones and joints. You may be prescribed a calcium supplement.
- Prednisone can increase blood glucose. This can happen if you have diabetes or not.
- If you have diabetes, you may need your diabetes medication adjusted, especially when prednisone doses are high. You should follow up with the doctor who manages your diabetes regularly.

- Other side effects may include:
  - nausea, vomiting, diarrhea
  - increased risk of infection
  - upset stomach, ulcers, heartburn or stomach bleeding
  - red or dark tarry stools
  - puffiness in face
  - muscle weakness or cramping
  - problems with wound healing
  - cataracts (cloudy vision).

## ❑ **Anti-thymocyte globulin (Thymoglobulin®)**

### ■ **Use**

- You may receive this medication to decrease your risk for rejection.

### ■ **Dose**

- You will receive your doses while you are in the hospital for your transplant surgery.
- You will receive your doses by an intravenous (IV) line.

### ■ **Side effects**

- During the infusion, you may have mild fever, chills, itching or hives. Before each infusion starts, your nurse will give you a dose of Tylenol®, Benadryl® and prednisone to try to avoid these symptoms.
- Anti-thymocyte globulin increases your body's risk for infection.

## ❑ **Basiliximab (Simulect®)**

### ■ **Use**

- You may receive this medication to reduce your risk for rejection.

### ■ **Dose**

- You will receive 2 doses while you are in the hospital.
- You will receive your doses by an intravenous (IV) line.

### ■ **Side effects**

- The most common side effects are nausea, diarrhea and constipation.

## Medications to Treat Bacterial, Viral and Fungal Infections (Antimicrobial Medications)

Antimicrobials are medications used to treat a variety of infections. The three main types of medications and the infections they treat are:

- antibiotics for bacterial infections such as urinary tract infections, strep throat, impetigo, meningitis
- antivirals for viral infections such as the common cold, chickenpox, flu, CMV (cytomegalovirus)
- antifungals for fungal infections such as thrush, candida, athlete's foot.

These medications are important because the immunosuppressants, or anti-rejection medications, lower your body's ability to fight infection.

You will be given some preventive (prophylaxis) medications to help stop infections before they start. Take these medications as directed and for the prescribed amount of time.

If you develop an infection, your doctor may prescribe medication. Follow the instructions and finish all the medication unless you are told to stop. Talk to your doctor or nurse if you have any questions.

### □ Trimethoprim and Sulfamethoxazole (Septra® or Bactrim®)

#### ■ Use

- This medication is used to treat a variety of infections (such as urinary tract and lung infections) caused by bacteria.
- Do not take this medication if you have an allergy to sulfonamides (sulfa).

#### ■ Tips

- You will start taking Septra or Bactrim on the second day after your surgery.
- Take this medication for 6 months after your transplant unless you receive other directions.

### ■ Side effects

- Side effects may include:
  - nausea, vomiting
  - loss of appetite
  - skin rash
  - increased creatinine
  - increased sensitivity to light.

## □ Dapsone

### ■ Use

- This medication is used to treat a variety of infections (such as urinary tract and lung infections) caused by bacteria. It is safe for people who have an allergy to sulfonamides (sulfa).

### ■ Tips

- Take dapsone with food.
- Dapsone may cause your eyes and skin to be sensitive to sunlight. Wear sunscreen, sunglasses and a hat when you are outdoors.

### ■ Side effects

- Side effects may include:
  - upset stomach
  - vomiting.

## □ Mycostatin (Nystatin®)

### ■ Use

- This medication is used to prevent thrush (yeast infection in the mouth).

### ■ Dose

- This is a liquid medication. You will take 1 teaspoon (5 ml) 4 times a day.
- Put this medication in your mouth and hold it for 10 to 15 seconds. Then swish it around your mouth before swallowing it.
- Do not eat, drink, brush your teeth, use a mouth rinse, or have gum or candy for 15 to 30 minutes after swallowing. This allows the medication to be absorbed and to be most effective.

- **Side effects**
  - Side effects may include mouth irritation.

## □ **Valganciclovir (Valcyte®)**

- **Use**
  - This medication is used to treat or prevent cytomegalovirus.
- **Dose**
  - The average length of treatment is 3 to 6 months.
  - Your dose will be adjusted based on your kidney function.
- **Tips**
  - Take the prescription as directed by your doctor.
- **Side effects**
  - Side effects may include:
    - nausea, vomiting, diarrhea, constipation
    - rash.

## **Medications to Treat or Prevent Stomach and Bowel Problems (Gastrointestinal Medications)**

Gastrointestinal medications are used to treat or prevent stomach and bowel problems. These problems may be from medication side effects, illnesses, complications (problems) from surgery, or from decreased activity after surgery.

The following are types of medications used to treat stomach and bowel problems. You will not take all of them. If your nephrologist prescribes a medication not on the list, ask your nephrologist or transplant coordinator for more information.

## □ **Famotidine (Pepcid®)**

- **Use**
  - This medication is used to decrease stomach acid to prevent or treat gastric ulcers.
- **Side effects**
  - Side effects may include:
    - abdominal discomfort
    - nausea, vomiting
    - rash.

## ❑ Omeprazole (Prilosec®)

### ■ Use

- This medication is used to decrease stomach acid to prevent or treat gastric ulcers.

### ■ Side effects

- Possible side effects are rare.

## ❑ Pantoprazole (Protonix®)

### ■ Use

- This medication is used to decrease stomach acid to prevent or treat gastric ulcers.

### ■ Side effects

- Possible side effects are rare.

## ❑ Docusate Sodium (Colace®)

### ■ Use

- This medication is a stool softener used to prevent constipation, especially right after surgery.

### ■ Tips

- Take Colace until your bowel habits return to normal then as needed for occasional constipation.
- Opioid (narcotic) pain medications, such as oxycodone, can cause constipation. If you are taking an opioid for pain, you may want to use a stool softener until you no longer need pain medication.
- Stop taking if you develop diarrhea or loose stools.

### ■ Side effects

- Side effects include abdominal cramping and diarrhea.

## ❑ Sennosides (Senna®)

### ■ Use

- This medication is a laxative.

### ■ Tips

- Take Senna until your bowel habits return to normal then as needed for occasional constipation.

### ■ Side effects

- Side effects include abdominal cramping, gas and diarrhea.

## Medications to Control Blood Pressure (Antihypertensive Medications)

Antihypertensive medications are used to control high blood pressure. High blood pressure is also known as hypertension.

There are many different kinds of blood pressure medications. Your nephrologist will prescribe the medications that are right for you.

It is not unusual to change these medications as your kidney function changes. It is important for you to closely monitor your blood pressure at home so your doctor can adjust your medication as needed. Blood pressure that is too high or too low is not good for you or the transplanted kidney.

## Nutritional Supplements (Minerals)

Nutritional supplements may be needed to add minerals to your diet. Levels of some minerals may be low due to not getting enough in your diet, side effects from medications, or both.

### Calcium With Vitamin D (OS-CAL 500 + D®)

#### ■ Use

- This supplement contains both calcium and vitamin D. Calcium is an important mineral that will help strengthen your bones. Vitamin D helps your body absorb the calcium.

#### ■ Tips

- Take this medication as prescribed.
- Take it with food.
- Do not take calcium with mycophenolate or phosphorus supplements.

#### ■ Side effects

- Side effects may include nausea, vomiting, constipation or a decrease in appetite.

## ❑ Magnesium Chloride (MagDelay®, SlowMag®)

### ■ Use

- This supplement contains magnesium, an important mineral.

### ■ Tips

- Tacrolimus can cause low magnesium level.
- Low magnesium in your blood may cause muscle cramping.

### ■ Side effects

- Side effects may include diarrhea, upset stomach and gas.

## ❑ Potassium Phosphate and Sodium Phosphate (K-Phos®)

### ■ Use

- This supplement contains phosphorus, an important mineral.

### ■ Side effects

- Side effects may include an upset stomach.

## Medications to Lower Cholesterol

These medications are given to help lower the amount of cholesterol your liver makes. Options include pravastatin (Pravachol®), atorvastatin (Lipitor®), simvastatin (Zocor®) and rosuvastatin (Crestor®).

Your doctor will prescribe one of these for you if needed.

### ■ Tips

- Take this medication at bedtime. (Your liver makes more cholesterol at night.)

### ■ Side effects

- muscle pains or aches
- rash, itching
- chest pain
- upset stomach, diarrhea
- changes in liver function tests.

# How to Read a Prescription Label

pharmacy name, address and phone number



Allina Health HeartHospitalPharmacy  
920 E 28th St, Ste H2005, MINNEAPOLIS, MN 55407  
612-775-3100

prescription number and your name

Rx: **8-055516-16**  
**Patient Name**

10/6/2017  
Doctor, JaneDoe

how and when to take the medication

Take 1 capsule by mouth 3 times daily if needed.

the date of the prescription and your doctor's name

name and strength of medication

**diphenhydrAMINE 25 mg capsule**

Generic for: BENADRYL

number of re-fills left, number of pills and the name of the company that made the pills

No refills remaining MA/MA  
QTY: 30 capsules MFG: SANDOZ

CAUTION: Federal law prohibits the transfer of this drug to any person other than the patient for whom it was prescribed.



scan code

May cause drowsiness. Alcohol may intensify this effect. Use care when operating a vehicle, vessel (e.g., boat), or machinery.  
May cause dizziness  
May cause blurred vision

warnings or major side effects

pink and clear colored, oblong shaped capsule with...  


what the pills look like