

# Medicines

## Medicine After Transplant

Medicine is important after transplant. You will take medicine for the rest of your life to prevent your body from rejecting your new organ(s). Other medicines will be used to treat other health problems you may have.

The information below will help you with your recovery.

### Before Leaving the Hospital You Should Know:

- The names of your medicines
- The purpose of each medicine
- The dose of each medicine
- When to take each medicine
- The possible side effects of your medicines
- When to refill your medicine , during normal business hours
- The definition of trough level (e.g. the level of the drug in your blood, 11 to 12 hours after your last dose)

### Medicine Dos and Don'ts

- Always take your medicine as told. Never stop or change your dose without calling the transplant team
- Call the transplant team if your local doctor orders a new medicine for you
- Keep a list of your medicines with you, including the dose and timing of them. Bring the current medicine list with you to

each doctor's visit. Be sure to update the list when a change is made

- Here's what to do if you miss a dose:
  - If it's less than 6 hours from the regular time, take the medicine
  - If it's more than 6 hours from the regular time, wait until the next scheduled time to take the medicine
- Store medicines away from high temperatures, direct light and moisture. Make sure that they are always kept away from children and pets
- When you travel keep medicines with you in your carry-on bag. Keep a current medicine list with you
- Keep a list of important phone numbers with you such as for your transplant coordinator and pharmacy.
- Call your transplant team if you are feeling too ill to take your medicines because of an upset stomach or are throwing up or having loose stools. Do not take any extra doses without calling the transplant team
- If you throw up within 15-30 minutes of taking your medicine wait an hour and repeat the medicine. If you can't keep the medicine down take it at your next dose time. If you miss two doses call the transplant team
- Do not run out of your medicine. You must call your pharmacy for refills at least a week before you run out. If you haven't heard from your pharmacy or received your medicine within 2 days, call the transplant team.

- Call the transplant team if you have any side effects, questions about the dose or questions about why you are taking the medicine
- **Do not take over-the-counter medicine or herbal supplements before calling the transplant team. Some of these products may effect your transplant medicines or cause side effects, which may be harmful to you and your new organ**
- Do not stop taking your medicines because of a lack of money. Call the transplant office during business hours as soon as you think that you may have a problem. We have social workers, pharmacy counselors and financial counselors who will work with you. They can find out if there are other ways to help get your medicines

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**PLEASE DO NOT WAIT UNTIL FRIDAY AFTERNOON, OR UNTIL YOU ARE OUT OF MEDICINES, TO CALL YOUR LOCAL PHARMACY FOR REFILLS.**

## Medicines to Prevent Rejection

Anti-rejection medicines are a group of drugs used to keep your body from trying to reject your new organ(s). They are vital to keep your newly transplanted organ(s) alive and working well. You will take several medicines to prevent rejection.

## Tacrolimus | Prograf®

Tacrolimus is dispensed in 0.5 mg, 1 mg and 5 mg capsules.

### Uses

Tacrolimus is used to prevent or treat rejection. It blocks a body's immune response to the transplanted organ(s).

### Schedule

Tacrolimus is taken twice a day 12 hours apart. For example, if you take your morning dose at 8 a.m., you should take your evening dose at 8 p.m.

### Dose Changes and Lab Monitoring

Tacrolimus doses will be changed based on your lab work including a tacrolimus level.

**Do not take your tacrolimus dose before your blood is drawn.**

We may change your tacrolimus dose based on the level of the drug in your system called a trough level. This happens about 30 minutes before you take your next dose. Take the ordered dose after your blood is drawn. The transplant coordinator will call you if you should change your dose.

### Possible Side Effects of Tacrolimus

- Headaches
- Shaking (tremors)
- Numb or tingling hands/feet
- Hair loss
- Trouble sleeping
- Increased risk of infection
- High blood pressure
- High blood sugar
- Increase in cholesterol levels
- Drop in magnesium levels
- Increase in potassium levels
- Abnormal kidney function
- Stomach pain

### Special Notes

Do not drink grapefruit juice or pomegranate juice because it can increase your tacrolimus level.

Check with the transplant team before taking any new medicines, including herbal supplements.

Tacrolimus should not be cut in half or opened.

## Cyclosporine | Neoral®, Sandimmune®, Gengraf®

Cyclosporine comes in 25 mg, 50 mg and 100 mg capsules. Neoral comes in 25 mg and 100 mg capsules.

### Uses

Cyclosporine is used to prevent or treat rejection. It blocks the body's immune response to the transplanted organ(s).

### Schedule

Cyclosporine is taken 2 times a day, 12 hours apart. For example, if you take your morning dose at 8 a.m., you should take your evening dose at 8 p.m.

### Dose Changes and Lab Monitoring

Your dose of cyclosporine will change based on your lab work including a cyclosporine level. Do not take your cyclosporine dose before your blood is drawn. We may change your cyclosporine dose based on the trough level. This happens about 30 minutes before your next dose.

Take your ordered dose after your blood is drawn.

A transplant coordinator will call with changes to your cyclosporine dose.

## Possible Side Effects of Cyclosporine

- Headaches
- Shaking (tremors)
- Numb or tingling hands/feet
- Excessive hair growth
- Swelling or overgrowth of gums
- Trouble sleeping
- Increased risk of infection
- High blood pressure
- High blood sugar
- Increase in cholesterol levels
- Drop in magnesium levels
- Abnormal kidney function
- Stomach pain

### Special Notes

Do not drink grapefruit or pomegranate juice because it can increase your cyclosporine level.

Your pharmacy or insurance company may recommend a generic form of cyclosporine. Call the transplant team if this change is suggested or has been made.

Check with the transplant team before taking any new medicines, including herbal supplements.

## Prednisone | Deltasone®

Prednisone comes in different strengths (1 mg, 5 mg, 10 mg and 20 mg). Usually our patients receive 5 mg tablets.

### Uses

Prednisone is a steroid and is used to prevent or treat rejection. It lowers the body's immune response to the transplanted organ(s).

### Schedule

Shortly after transplant, prednisone is taken once a day and should be taken with food. For example, if you take it in the morning, take it with breakfast.

### Dose Changes

Your prednisone dose will be decreased over time. If you have rejection, your dose may be increased.

## Possible Side Effects of Prednisone

- Increase in appetite
- Weight gain
- Water retention (swelling in ankles/feet)
- Round face or “chubby cheeks”
- Mood changes or anxiety
- Trouble sleeping
- Night sweats
- Pimples
- Purple or red bruising
- Vision changes or cataracts
- Weak or brittle bones
- Increased risk of infection
- Increase in cholesterol levels
- High blood sugar
- Stomach irritation/ulcers

### Special Notes

Do NOT stop taking prednisone all at once. Doses will be reduced by the transplant team over time.

Watch for signs of infections. Call the transplant team if you have black, tarry stools or stomach pain.

Check with the transplant team before taking any new medicines, including herbal supplements.

Mycophenolate Mofetil | Cellcept®, Myfortic®, also called MMF

Mycophenolate mofetil is dispensed in 250 mg and 500 mg gel tablets. Myfortic is dispensed in 180 mg and 360 mg tablets. Each tablet has a coating that helps protect against stomach pain.

## Uses

Mycophenolate mofetil is used to prevent rejection. It may be added to help protect your kidney function or it may be added if you have rejection. It lowers the body's immune response to the transplanted organ(s).

## Schedule

Mycophenolate mofetil is taken twice a day, 12 hours apart.

## Dose

Your mycophenolate mofetil dose usually will not change unless you are having side effects. Your liver doctor will review your dose 3 months after transplant. If it is safe for you to stop taking this medicine at that time, a nurse will call you.

## Possible Side Effects of Mycophenolate Mofetil

- Stomach pain
- Loose stools
- Upset stomach/throwing up
- Drop in platelet count
- Increase or drop in white blood cells
- Drop in red blood cells
- Increased risk of infection
- Increase in cholesterol levels
- Increase in blood sugar
- Electrolyte abnormalities - a drop in magnesium or calcium levels

## Special Notes

Mycophenolate mofetil comes in gel capsules or tablets; these should not be opened or crushed. Wash hands with soap and water if medicine from the capsule comes touches with the skin.

**Women of childbearing age should use two forms of birth control while taking mycophenolate mofetil and for 6 weeks after stopping the medicine. Always check with the transplant team before planning to have a baby.**

Check with the transplant team before taking any new medicines, including herbal supplements.

Call the transplant team if you have upset stomach, vomiting or loose stools after starting this medicine.

## Everolimus | Zortress®

Everolimus comes in 0.25 mg, 0.50 mg and 0.75 mg tablets.

### Uses

Everolimus is used to prevent rejection. It may be given as an added medicine to help prevent rejection and to help protect kidney function. It lowers the body's immune response to the transplanted organ(s).

### Schedule

Everolimus is taken twice a day, 12 hours apart.

### Dose Changes and Lab Monitoring

Your dose of everolimus will change based on a blood level drawn by the lab, called an everolimus level.

**Do not take your dose before your blood is drawn for lab work.**

We may change your everolimus dose based on the level of the drug in your system called a trough level.

This happens about 30 minutes before you take your next dose. Take the ordered dose after your blood is drawn. A transplant nurse will call with changes to your levels.

## Possible Side Effects of Everolimus

- Increased cholesterol and triglyceride levels
- Constipation
- Upset stomach
- Loose stools
- Change in kidney function
- Delayed wound healing
- Increased risk of infection
- Water retention (swelling in ankles/feet)
- High blood pressure
- Low blood counts (low iron, low platelet counts, low white blood cell counts)
- Mouth sores

### Special Notes

Do not drink grapefruit juice or pomegranate juice because it can increase your everolimus level.

Check with the transplant team before taking any new medicines, including herbal supplements.

**Call the transplant team if you are planning any surgery. This medicine will need to be stopped 4 weeks before surgery and replaced with another anti-rejection medicine.**

## Sirolimus | Rapamune®

Sirolimus is dispensed in 0.5 mg, 1 mg, and 2 mg tablets

### Uses

Sirolimus is used to prevent rejection. It may be added to protect kidney function or if you have had rejection. It lowers the body's immune response to the transplanted organ(s).

### Schedule

Sirolimus is taken once or twice a day. If you take tacrolimus, you can take sirolimus at the same time.

### Dose Changes and Lab Monitoring

Your dose of sirolimus will change based on a blood level drawn by the lab, called a sirolimus (Rapamune) level.

**Do not take your dose before your blood is drawn.**

The transplant team wants to see the trough level, which happens about 30 minutes before you would take your next dose. Take your ordered dose after your blood is drawn.

A transplant nurse will call with changes to your sirolimus dose. The transplant team may also change your dose based lab work or side effects.

## Possible Side Effects of Sirolimus

- Delayed wound healing
- Stomach pain or heartburn
- Upset stomach
- Loose stools
- Headaches
- Shaking (tremors)
- High blood pressure
- Water retention (swelling in ankles/feet)
- Change in kidney function
- Increased risk of infection
- Increased cholesterol and triglyceride levels
- Mouth sores

### Special Notes

Do not drink grapefruit juice or pomegranate juice because it can increase your sirolimus level.

Check with the transplant team before taking any new medicines, including herbal supplements.

**Call the transplant team if you are planning any surgery. This medicine will need to be stopped 4 weeks before surgery and replaced with another anti-rejection medicine.**



Trimethoprim/Sulfamethoxazole |  
Bactrim™ SS, Bactrim™ DS, Septra SS,  
Smz-Tmp, Co-Trimazole, Cotrim

## Uses

Trimethoprim/sulfamethoxazole is used to prevent bacterial infections, including pneumocystis carinii pneumonia (PCP). The SS stands for single strength because Bactrim is also available in a double strength (DS) formulation. Bactrim is a sulfa drug. If you have an allergy to sulfa, the transplant team will decide on another medicine.

## Schedule

Trimethoprim/sulfamethoxazole (Bactrim DS) is taken daily Monday, Wednesday and Friday. You will stay on this medicine for one year after the transplant.

## Dose Changes

Your trimethoprim/sulfamethoxazole dose will usually not change during the course of treatment.

## Possible Side Effects of Trimethoprim/Sulfamethoxazole

- Upset stomach
- Rash/itching
- Drop in white blood cell count
- Drop in red blood cell count
- Drop in platelet count
- Increase in sensitivity to sunlight

## Special Notes

Do not take trimethoprim/sulfamethoxazole if you are allergic to sulfa medicines. We can order another medicine in its place, such as dapsone or pentamidine.

Always take trimethoprim/sulfamethoxazole with a full glass of water to protect your kidneys.

Wear sunscreen to protect your skin from sunburn.

Check with the transplant team before taking any new medicines, including herbal or over the counter medicines.

## Acyclovir | Zovirax®

### Uses

Acyclovir is used to prevent or treat viral infections, including herpes simplex viruses and shingles.

### Schedule

Acyclovir is usually taken with food and should be taken with plenty of water. Your dose and schedule will be decided by the transplant team, and there may be changes for patients with unusual kidney function.

### Dose Changes

Your acyclovir dose will not change during the course of treatment unless you are having pain or your kidney function changes. Acyclovir is usually stopped 3 months after your transplant.

### Possible Side Effects of Acyclovir

- Headaches
- Upset stomach/throwing up
- Loose stools
- Dizziness/weak
- Confusion or mood changes
- Drop in white blood cell count
- May increase your sensitivity to sunlight – wear sunscreen while you take this medicine

### Special Notes

Check with the transplant team before taking any new medicines, including herbal or over the counter medicines.

## Valganciclovir | Valcyte®

### Uses

Valganciclovir (Valcyte) is used to prevent viral infections, including a virus called cytomegalovirus (CMV). Transplant patients are more likely to get this infection if they or their donors have had CMV in the past. Valganciclovir is also used to prevent and/or treat herpes simplex viruses and shingles.

### Schedule

Valganciclovir is usually taken once a day with food. However, the dose or schedule may be changed for patients with abnormal kidney function. The length of therapy will be decided by your CMV status.

### Dose Changes

Your valganciclovir dose will usually not change during the course of therapy unless you are having problems with your kidney function.

### Possible Side Effects of Valganciclovir

- Upset stomach
- Headache
- Loose stools
- Dizziness
- Numbness or tingling in hands or feet
- Drop in white blood cell count
- Drop in red blood cell count
- Drop in platelet count
- Increase risk for infection

- May increase your sensitivity to sunlight - must wear sunscreen while taking this medicine
- May increase your kidney function tests - drink plenty of water

### Special Notes

Your transplant team will watch your blood cell counts while you take this medicine.

Tell your transplant team if you have any unusual bleeding or bruising.

Do not crush, chew or cut tablets before swallowing.

Do not let any broken or crushed tablet touch your skin or gums.

**Valganciclovir may cause birth defects or infertility fertility. Men and women of childbearing age should use birth control during, and for 90 days after using valganciclovir.**

Check with the transplant team before taking any new medicines, including herbal or over the counter medicines.

## Fluconazole | Difucan®

### Uses

Fluconazole is used to prevent or kill yeast or fungal infections. Anti-rejection medicine and other antibiotics may cause fungal or yeast infection.

### Schedule

Fluconazole is usually given one time per day for 10 days to 2 weeks.

### Dose

Fluconazole comes in 200 mg tablets.

### Possible Side Effects of Fluconazole

- Headache
- Drowsiness
- Upset stomach, throwing up, loose stools
  - take medicine with food
- Skin rash

### Special Notes

**This medicine may affect your tacrolimus or cyclosporine (anti-rejection) medicine levels.**

Your anti-rejection medicine dose may be lowered while you are on fluconazole.

You may need to have your anti-rejection medicine levels checked more often while you are on this medicine.

Please call the transplant office if you are started on this medicine.

Check with the transplant team before taking any new medicines, including herbal or over the counter medicines.

## Furosemide | Lasix®

### Uses

Furosemide is used to help your body remove extra fluid and increase your urine.

### Schedule

Furosemide is usually given once or twice per day. The dose may change based on the amount of extra fluid you have and how your kidneys are working. If you take this once a day, take it in the morning. If you take this drug twice a day, take one dose in the morning and one dose in the late afternoon so you will not be up at night going to the bathroom.

### Dose

Furosemide comes in 10 mg, 20 mg, 40 mg and 80 mg tablets. Be sure to check the label of Furosemide on your bottle so you know what dose of medicine you have.

### Possible Side Effects of Furosemide

- Muscle cramps in legs
- Upset stomach - take with food
- Drop in potassium levels
- Low blood pressure

### Special Notes

Call transplant office if your urine output drops.

## Hepatitis C Medications

If you have hepatitis C and have not been treated or cleared the virus before your liver transplant, please discuss this with your liver doctor. There are new medicines that usually can cure people from the disease.

Medicine will be given based on your genetic makeup (genotype), which is determined by a blood test. Length of treatment is usually between 12 to 24 weeks. Bloodwork is closely watched during that time.

Most people have few side effects from the medicine. The average cure rate in pre-transplant patients is about 95 percent.

The cure rate is lower in the post-transplant patients because of the anti-rejection medications you are taking. However, it is still about 80 to 90 percent.

Many post-transplant patients have been cured with these new medicines. Certain behaviors may increase the risk of re-infection after treatment.

The drugs are expensive. Some insurance companies may not cover the cost. The transplant pharmacy financial counselors will work with the insurance companies to help cover costs.

## Hepatitis B Medications

Patients with hepatitis B virus before or after transplant will be on a medicine to prevent the virus. Some medicines for this are tenofovir (Viread®) and entecavir (Baraclude®). Other medicine may be used depending on your virus history. These medicines are usually taken forever. We will periodically look for the virus in your blood after transplant.

## High Blood Pressure Medications

The medicines you take to prevent rejection may cause high blood pressure. The transplant team will decide if you need a medicine for high blood pressure and which one is right for you. Once you are home, your local doctor will take care of ordering these medicines.

## Possible Side Effects of Blood Pressure Medications:

- Dizziness if you stand up too quickly
- Headache - take Tylenol® as needed and report to transplant coordinator
- Weakness
- Swelling in legs and feet
- Upset stomach or constipation
- Cough
- Shortness of breath – go to an emergency room or call 911
- Chest pain, fast or pounding heart beat — go to an emergency room or call 911

## High Blood Sugar Medicines

The medicines you take to prevent rejection can also cause high blood sugar levels. Transplant patient may need medicines to lower their blood sugars on a short term or long term basis. These may include oral medications or insulin injections. Our diabetes specialists will provide direction if you need to be started on insulin. Once you are home, your local doctor will take care of managing your blood sugars.

## Antacids, Anti-Ulcer Medicines

Some of your medicines may cause stomach irritation. You will usually be started on one of the following medicines to protect your stomach.

- Esomeprazole (Nexium®)
- Lansoprazole (Prevacid®)
- Rabeprazole (AcipHex®)
- Omeprazole (Prilosec OTC®)
- Pantoprazole (Protonix®)
- Ranitidine (Zantac®)
- Famotidine (Pepcid®).

These are usually stopped once prednisone dose is lowered or stopped.

## Multi-vitamins

Daily multi-vitamins are used to ensure you get the recommended daily nutritional doses. Please take multi-vitamins as prescribed and not vitamins with additives, such as energy booster, weight loss, more than daily recommended dose, etc. These extras may interact with your other medicines.

## Calcium (Calcium Gluconate, Calcium Carbonate, Tums plus Vitamin D)

Liver disease and other medicines, like prednisone, in large doses over time may cause bone loss. Calcium and Vitamin D can help improve bone density. Follow the dosing directions given by the transplant team.

## Headache or Muscle Aches or Pains

You may take Tylenol® (acetaminophen) or a pain medicine ordered by the transplant team.

**Do not take more than 3,000 mg of Tylenol® per 24 hours, which are no more than 6 double-strength (500 mg) tablets or 9 single strength (325 mg) tablets.**

**DO NOT TAKE: IBUPROFEN IN ANY FORM (LIKE, MOTRIN®, ADVIL®, ALEVE®, NAPROXEN, OR ANY OTHER NON-STEROIDAL ANTI-INFLAMMATORY (NSAID) MEDICINE.**

These medicines can interact with your transplant medicines or harm your kidneys.

## Constipation

You may take docusate (Colace®), FiberCon® or Miralax® for constipation. Exercising, drinking plenty of water, eating foods high in fiber and lowering use of pain medicines are other ways to help ease constipation. Call the transplant team if constipation continues.

## Loose Stools

Always drink enough fluids to prevent dehydration. Try to drink at least 8 to 10 glasses of water a day.

Call the transplant team if you have more than 6 loose stools in a 24 hours.

Do not take an anti-diarrheal stool medicine such as Lomotil®, Immodium®, etc. until you talk to the transplant team. The transplant team may order stool cultures to decide the cause of the loose stools. These tests should be done before taking medicine to stop the loose stools.

## Allergy, Cold Symptoms

You may take dextromethorphan (Robitussin® DM) for cough or guaifenesin to loosen thick secretions. You may take the following antihistamines for runny or stuffy nose and itchy or watery eyes: (Claritin®, Alavert®, Allegra®, Zyrtec®) or Diphenhydramine (Benadryl®). You may also use a saline nasal spray for congestion. Do not use Afrin nasal spray. Do not use any cold products that have pseudoephedrine unless it has been approved by your local doctor. This drug may cause high blood pressure. Call your primary care doctor right away if your cold symptoms, including cough, fever, increased shortness of breath or yellow/green drainage do not improve. You may have an infection that needs antibiotics. Please notify the transplant team if your local doctor orders any new medicines.

## Pregnancy and Transplant Medicines

Many of the medicines used after transplant may pose a risk to an unborn baby. Always check with your transplant doctor before planning a pregnancy. Talk to doctor right away if you think you are pregnant.

### Mycophenolate and Pregnancy

Women on mycophenolate medications like Cellcept®, Myfortic® have a higher risk of causing miscarriage during the first three months of pregnancy and a higher risk of causing birth defects.

Women who are of childbearing age should use an approved form of birth control while on mycophenolate and for six weeks after stopping the medication.

If you choose not to have sexual intercourse while on this medicine, you will not need to use any other form of birth control

If you are sexually active, please talk with the transplant team about which forms of birth control are best for you. You may need to use more than one form of birth control while taking this medicine.

If you do become pregnant while on mycophenolate, call the transplant team right away.

[www.MycophenolateREMS.com](http://www.MycophenolateREMS.com)

## Pain Medications

Pain is a part of having surgery, and we will work with you to help control your pain. **This does not mean you will be pain free but your pain should be controlled enough to be active and to exercise.** The transplant team will manage transplant surgery pain. If you were on pain medicine before your transplant or have an on-going problem like . back pain, you need to have your local doctor treat your pain.

**Pain medications cannot be refilled after hours or on weekends.** A written prescription is needed to refill your pain medicine. This needs to be done during normal business hours. If your pain is new or getting worse, you should be seen in the emergency room.