



# London Health Sciences Centre

## Multi-Organ Transplant Program

**University Hospital  
Patient Medication Information  
Pharmacy Services 519-663-3172**

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**Brand Name:** Neoral®  
**Common Name:** cyclosporine

### **What is it?**

Cyclosporine is a very potent immunosuppressant that helps you to prevent rejecting your transplanted organ(s). You will probably have to take it for the rest of your life. You may be taking other medications along with cyclosporine, such as prednisone, mycophenolate mofetil, or sirolimus, to prevent rejection.

### **How should it be taken?**

Cyclosporine should be taken every 12 hours. During your hospital stay, you will take it at 8AM and 8PM (or 6AM and 6PM). When you go home, you can take it at whatever time is convenient for you, as long as it is EVERY 12 HOURS (eg. 9AM and 9PM or 7AM and 7PM).

It may be taken with food or on an empty stomach, but you should try to be consistent (eg: always with food or always on an empty stomach).

DO NOT take cyclosporine with grapefruit or grapefruit juice as this may cause your blood levels of cyclosporine to increase. Orange juice has no effect on cyclosporine blood levels.

Cyclosporine is available as a capsule or as a liquid. If you are using the liquid form, your pharmacist will show you how to measure your dose. Do not use the pipette to stir the liquid. Wipe the pipette with a tissue after using it; do not wash it with soap and water. You may mix cyclosporine liquid with milk, chocolate milk, or juice, but NOT with pop, grapefruit juice, or very hot (coffee, tea) or cold beverages. Try to use the same liquid all the time. Use a glass or ceramic container for mixing cyclosporine, never plastic or Styrofoam. Rinse the container with more milk or juice to remove the extra cyclosporine that clings to the glass, then drink it.

### **Dose changes**

For the first few months after your transplant, your dose of cyclosporine will change frequently. Dose changes are based on the amount of cyclosporine in your blood. The dose will vary among different people and different types of transplants. Your doctor will tell you what dose you should take.

When you leave the hospital, you will continue to have your cyclosporine blood level checked periodically. You may be asked to take your morning dose of cyclosporine and report to the lab exactly 2 hours AFTER swallowing your dose OR you may be asked to have your blood checked BEFORE you take your morning dose. You will be told what to do before you go home.

### **If you miss a dose**

Take it as soon as you remember if it's within 6 hours of when you should have taken it. If you remember after 6 hours, skip the dose completely and continue with your regular schedule. NEVER double the dose. It is very important to remember to take this medication regularly.

### **If you are sick**

If you vomit within ½ hour of taking cyclosporine, you should take it again. If you vomit more than ½ hour after taking cyclosporine, it is not necessary to take another dose. If you have diarrhea for several days or continue to vomit, you should contact your transplant team. They may want to check your cyclosporine blood level.

### **How should cyclosporine be stored?**

Keep cyclosporine away from extremes of temperature (very hot or very cold). Keep it at room temperature, away from children.

If you use capsules, keep them in the foil wrapper until you are ready to swallow them. If they have been out of the foil wrapper and exposed to air for more than 2 hours they may have lost some of their potency and should be thrown away.

If you use the liquid, you should only open one bottle at a time and use it up within 2 months of opening it.

### **Where can you get cyclosporine? How much does it cost?**

Cyclosporine is a very expensive drug; however, in Canada the provincial governments will pay for it. For this reason, cyclosporine can only be obtained from transplant hospitals (if you live in Ontario). Before you go home, be sure you know where you will be getting your cyclosporine. Be sure you always have enough cyclosporine on hand so you never run out.

### **Side effects**

Cyclosporine can cause some stomach upset. It can also cause a tremor, particularly in the hands, which usually improves or goes away with time.

Some people, particularly women, may notice an increase in hair growth on the face, forearms, and upper body.

Good dental health is important as cyclosporine may cause the gums to become red and swollen, bleed, or grow over the teeth. See your dentist regularly and be sure he knows you are taking cyclosporine.

Cyclosporine may also cause headaches. If these are bothersome or occur more than usual, be sure to report them to your transplant team. Some people also notice a change in vision.

Cyclosporine can cause high blood pressure, or problems with high potassium levels in the blood. Your doctor may prescribe medications to lower your blood pressure or ask you to reduce the amount of potassium in your diet. Cyclosporine may also cause high cholesterol or gout, or it may slow kidney function in some people. It is important to take this medication exactly as directed, avoid medications that don't mix well, and keep all your clinic appointments so your transplant team can monitor your kidney function.

Be aware of the signs of infection. While you are taking anti-rejection medications you will be more prone to infections. Avoid or limit exposure to other people who have infections. Cyclosporine may slightly increase your risk for certain types of cancers, such as skin cancer. Be sure to protect yourself from the sun.

## Drug interactions

Many medications can interact with cyclosporine. It is important to check with your doctor or pharmacist before you take any new medications, even medications you can buy without a prescription, to ensure they will not affect the amount of cyclosporine in your blood. A list is below, outlining some common drug interactions with cyclosporine. It is also recommended that you avoid herbal medicines, as these may also affect cyclosporine blood levels.

Effect	Known Interactions	Suspected Interactions
Drugs increasing the serum levels of cyclosporine	ketoconazole fluconazole itraconazole tacrolimus (FK-506) erythromycin corticosteroids oral contraceptives norethisterone or danazol doxycycline metoclopramide bromocriptine calcium channel blockers: diltiazem, verapamil, nifedipine propafenone	ranitidine/cimetidine cephalosporins thiazide diuretics furosemide androgenic steroids acyclovir warfarin
Drugs decreasing the serum levels of cyclosporine	phenytoin phenobarbital carbamazepine rifampin isoniazid ocetrotide ticlopidine	sulfinpyrazone
Drugs causing additive nephrotoxicity	amphotericin B aminoglycosides melphalan co-trimoxazole diclofenac vancomycin ciprofloxacin colchicine	non-steroidal anti-inflammatory drugs  (ASA, ibuprofen, Advil®, Motrin®)
Alteration of immunosuppressive effect		propranolol verapamil etoposide
Interaction with alcohol content of cyclosporine		disulfiram chlorpropamide metronidazole
Others	grapefruit juice	digoxin captopril toxoid or vaccines lovastatin