

# The Transplant Center

Lowry Building 110 Francis Street Boston, MA 02215  
Telephone: (617) 632-9700



Beth Israel Deaconess  
Medical Center

## Cyclosporine Medication Information

### What is cyclosporine?

Cyclosporine is in the class of drugs known as immunosuppressants. It is in the specific class of immunosuppressants known as calcineurin inhibitors. This drug is used to suppress your immune system so your body does not reject your transplanted organ. This drug may also be used in some cases to treat illnesses such as Lupus, Crohn's disease and ulcerative colitis before your transplant.

### Are there other names for cyclosporine?

Yes, cyclosporine may be referred to by its brand name which is Neoral® or by an abbreviated name, cyclo or the abbreviation CsA.

### Is cyclosporine available in a generic formulation or any other formulation that I should be aware of?

Yes, there are multiple formulations of cyclosporine available on the market now. You should always know which preparation you should be taking. The two different brand names of cyclosporine are Sandimmune ® and Neoral ®. They are both different and should not be used in place of each other. Neoral ® is used most often now because it is absorbed better and drug levels are more reliable than with the Sandimmune ® preparation. There are two different generic options for Neoral®, one is called Gengraf and the other is just referred to as modified cyclosporine. Generic preparations of Neoral® are ok to take as long as your transplant doctor knows what formulation you are on and you do not change between formulations. It is not ok to take generic cyclosporine if you are supposed to take the generic modified cyclosporine.

### How do I take cyclosporine?

Follow your physician's instructions carefully. Cyclosporine should be taken at the same time each day to maintain a steady blood level. Most patients take it at 8am and 8 pm. It may be taken on an empty stomach or with food to reduce stomach irritation. The most important thing to remember is to take it the same way everyday, either with or without food as the food can affect the drugs absorption. The capsules should be swallowed whole and not opened, crushed or chewed. Sandimmune® liquid may be mixed with room temperature milk, chocolate milk or orange juice. Neoral® liquid may be mixed with room temperature orange or pineapple juice. Only mix your cyclosporine in a glass container, do not use styrofoam or plastic. Never mix your cyclosporine with grapefruit juice. Stir well and drink at once. To make sure you get the full dose, rinse the glass with more liquid and drink that too. There may be an odor when you open the capsule container. This is normal. Store both capsules and liquids in a tightly sealed container below 86 degrees Fahrenheit. Do not take the capsules out of the packaging, once they are removed they are only good for 7 days. Do not store the liquid in the refrigerator and keep it from freezing. Sandimmune® liquid, once opened, must be used within two months.

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Please direct your medication questions to  
your transplant coordinator or transplant pharmacist.

## What do I do if I missed a dose or I have a late clinic appointment?

Do not take two doses of cyclosporine within 6 hours of each other. If you have forgotten a dose and your next dose is within the next 6 hours do not take the dose. If you have a late clinic appointment and you haven't taken your am cyclosporine and your next dose is due within 6 hours push that evening dose back until 6 hours after you take your am dose. Example: Doses normally at 8am and 8 pm, you get your blood drawn at 3 pm and take your am dose at 3 pm, push your evening 8pm dose back to at least 9 pm. Resume your 8am / 8 pm schedule the next day.

## Does cyclosporine interact with any foods or beverages?

Avoid excessive intake of high potassium foods (bananas, oranges, orange juice, potatoes, spinach, etc). Do not eat grapefruits, grapefruit juice or any soda (Fresca) or fruit juice blend that contains grapefruit juice. Grapefruit can increase your levels of cyclosporine to a potentially toxic level.

## Does cyclosporine interact with other drugs?

Drug interactions can occur when one drug effects the levels of another drug, it can cause the levels to either go up or down. Always check with your transplant team before starting any new medications.

Interactions with cyclosporine may occur with the following:

- diuretics (Aldactone, Dyazide)
- anti-convulsants (Dilantin, carbamazepine, phenobarbital)
- antibiotics (erythromycin, metronidazole)
- anti-fungals (Diflucan, Sporanox, Nizoral, Vfend)
- anti-nausea or prokinetics (Reglan)
- calcium channel blockers ( Cardizem, Calan)
- arthritis drugs (ibuprofen, Advil, Motrin, many others)
- birth control pills

## What if I become pregnant, or are considering pregnancy or breast-feeding?

Some drugs are avoided during pregnancy due to the potential harm they may have on the unborn baby. The FDA has a grading system that lets you know how safe a drug is for your unborn child. It ranks drugs from A, where medical studies show no evidence for danger to the fetus or mother, to B, C, D and X, where the medical evidence indicates that the risk to the fetus outweighs any benefit to the mother. Cyclosporine is ranked C. Always consult your physician before taking any drug during or when planning pregnancy as your immunosuppression regimen may have to be changed during this time.

## Are there other precautions that I need to be concerned about while taking cyclosporine?

One of the side effects of cyclosporine is an overgrowth of your gums. You should take care of your teeth and gums and see your dentist frequently for regular cleanings in order to prevent gum tenderness, bleeding or swelling. When you take medications that suppress your immune system you are at an increased risk of infection, report promptly to your physician any indication of infection such as fever, sore throat, swollen glands, sores or lumps in the skin, abnormal bleeding or bruising. Avoid friends and family member that are sick, ask them to wear a mask in your presence. Avoid live vaccines while taking this drug and avoid contact with individuals who have recently taken oral poliovirus vaccine. Also inform

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your physician if you have had a recent infection, especially chicken pox or shingles. Long term use of immunosuppressive medications may place you at a higher risk of developing certain types of cancers such as skin cancer, cervical cancer and lymphoma (lymph node cancer).

### **How long will I have to take cyclosporine?**

You will likely be on this immunosuppressant or one similar to it for as long as your transplant is functioning. There may be some changes to the types of immunosuppressants you will take over time. Make sure your transplant team is aware of any changes made to this medication.

### **What kind of side effects could I have while taking cyclosporine?**

Side effects can occur with any drug, even over-the-counter medications. Some of these side effects are mild whereas others can be more severe. Minor reactions may resolve on their own but if they persist, contact your physician. For major reactions, you should contact your physician immediately.

For cyclosporine, the following are the observed side effects:

#### ***Minor:***

- headache
- loss of appetite
- tremors
- swollen gums
- acne
- increased hair growth

#### ***Major:***

- fever
- urgent or painful urination
- kidney damage- decrease in urine output
- nausea/vomiting
- high blood pressure
- elevated blood sugar
- elevated potassium
- seizures

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## Cyclosporine



Sandimmune® cyclosporine 25 mg



Sandimmune® cyclosporine 100 mg



Generic cyclosporine 25 mg  
(Appotex)



Generic cyclosporine 100 mg  
(Appotex)

## Modified Cyclosporine



Neoral® modified-cyclosporine 25 mg



Neoral® modified-cyclosporine 100 mg



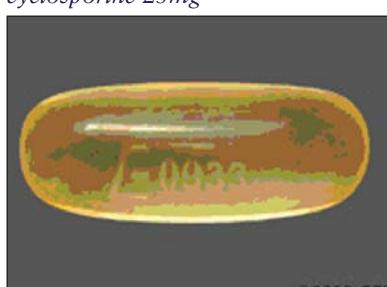
Gengraf® Generic modified  
cyclosporine 25mg



Gengraf® Generic modified  
cyclosporine 25mg



Generic modified cyclosporine 25mg  
(Eon)



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