

Cyclosporine

Immunosuppressive medicine

*Pronounced: sigh-klo-**spore**-in (brand names: Sandimmune, Neoral)*

What is cyclosporine?

Cyclosporine is an immunosuppressive medicine (*immunosuppressant*). It helps prevent rejection, but it cannot reverse rejection once it has begun. Cyclosporine is usually given to people who cannot take tacrolimus.

There are 2 main brands of cyclosporine: Sandimmune and Neoral. They both come as pills and liquid. Some patients can absorb Neoral more easily, which means they may be able to take lower doses.

Sandimmune and Neoral have different formulas. You cannot switch back and forth between them. If you start taking one brand, continue taking that kind unless your doctor changes it.

Your Dose

Both Sandimmune and Neoral come in 25 mg and 100 mg capsules, and as a solution that has 100 mg of cyclosporine in 100 mL of liquid.

Liquid cyclosporine comes with a syringe to measure the dose. The syringe holds 4 mL of medicine. Because the liquid has 100 mg/mL of cyclosporine, you will need to divide your dose by 100 to figure out how many milliliters to draw into the syringe.

For example, if your dose is 350 mg, divide 350 by 100. The result is 3.5. You will need to draw 3.5 mL of medicine into the syringe. If your dose is more than 400 mg, you will need to use the syringe more than once for each dose. Your nurse can help you figure out how to make sure you are measuring out the right amount.

Your cyclosporine dose depends on:

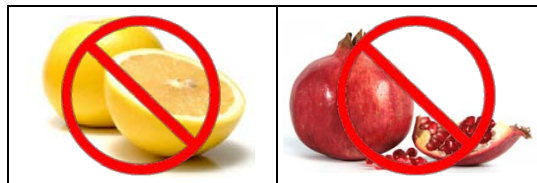
- Your body weight
- The blood level we are trying to reach
- How long it has been since your transplant
- How well your kidneys are working
- If you have had any rejection episodes

On mornings when you have your cyclosporine level checked, do not take the medicine until after your blood is drawn. Remember to bring your medicine with you so you can take it right after your blood draw.

Cyclosporine doses are often very high the first few months after transplant. At first, the goal is a blood level of 350 to 450 micrograms/milliliter (mcg/mL). If your kidneys are not working well, we will lower your cyclosporine dose and raise the dose of your other immunosuppressive medicines to prevent rejection.

How do I take it?

- You will take your dose of cyclosporine 2 times a day.
- Blood levels should be checked 12 hours after your evening dose. Do not take it in the morning until after your blood is drawn. Be sure to bring your medicine with you so you can take your morning dose as soon as your blood has been taken.
- Take cyclosporine with food to help your body absorb the medicine better. This is true whether you take cyclosporine in capsule or liquid form.
- While taking cyclosporine, do **NOT**:
 - Eat grapefruit or drink grapefruit juice.
 - Eat pomegranates or any foods made with pomegranate juice.



Do NOT eat grapefruit or pomegranate in any form while you are taking cyclosporine.

If you take liquid cyclosporine:

- You must mix it with juice or milk (either plain or chocolate) at room temperature. Your body absorbs cyclosporine better when it is at room temperature.
- Use a glass for mixing your cyclosporine. Do **not** put the liquid into plastic or styrofoam containers. Cyclosporine sticks to plastic and styrofoam, and you will not get your full dose.
- Drink the juice or milk as soon as you add the medicine to it.
- Refill the glass with juice or milk and drink it to make sure you get all of the medicine.

How is it stored?

- Do **not** store cyclosporine in the refrigerator.
- Do **not** store it at temperatures above 85°F (29.4°C).
- Do **not** keep open bottles of the liquid for more than 2 months.
- Do **not** remove capsules from the foil packets until you are ready to take them.

Immunosuppressive medicines are helpful in preventing rejection, but they also have side effects. Tell your transplant team if you have any of these side effects.

What are the side effects?

Cyclosporine can cause some side effects. These should lessen as your dose goes down. Some of the side effects are:

Risk of Infection

Because cyclosporine weakens your immune system, your risk of getting infections is higher. Chapter 4, “Infections,” describes common infections in transplant patients. It also gives some tips to help prevent infections.

Liver Toxicity

Cyclosporine can cause a type of liver damage called *liver toxicity*. A healthy liver removes waste products and toxins from your blood. If your liver is not working well, these substances are not removed.

Liver toxicity is a rare side effect. It can be reversed if it is found early. It can be very harmful if it is not treated. We will check your liver function often with blood tests.

Call your transplant team **right away** if you have:

- Loss of appetite
- Yellow skin or eyes
- Dark-colored urine
- Pale-colored stools
- Nausea and vomiting

Kidney Damage

Your doctor can detect kidney damage caused by cyclosporine by measuring a substance called *creatinine* (kree-**at**-in-in) in your blood. Your muscles create creatinine and your kidneys remove it from your blood. If your kidneys are not working as well as they should, the level of creatinine in your blood will go up. If we find this increase early enough, we can change your cyclosporine dose to lessen the harm to your kidneys.

High Blood Pressure (Hypertension)

Cyclosporine may cause your blood pressure to go up, so you will need to check your blood pressure often. After you go home from the hospital, we want you to check your blood pressure and pulse rate 2 times a day. Tell your transplant team if you have changes in your vision or if you start having headaches. These can be signs of high blood pressure.

Tremors

Some patients have hand tremors, or shaking, early after transplant when cyclosporine doses are very high. This usually goes away as the doses go down. Other patients may have tingling in their hands, feet, and around

the mouth. Be sure to tell your transplant team if you have tremors or tingling.

Low Magnesium

Cyclosporine can cause your body to lose magnesium, which is an important element for your health. You may need to take magnesium tablets to keep up the proper levels in your body.

High Potassium

Cyclosporine can cause your body to hold onto potassium. It can be unhealthy if your levels get too high. You will probably not need to take potassium pills, even if you are taking diuretics (water pills).

Hair Growth

You may have more hair growth on certain parts of your body, including your face. This is not harmful, but if it bothers you, try bleaching, shaving, waxing, hair removal cream, laser removal, or electrolysis.

Gum Swelling

Brush your teeth and floss every day to lessen gum swelling. See your dentist every 6 months. And, tell your transplant team if you have swelling, sensitivity, or overgrowth of your gums.

Acne

Cyclosporine can cause changes in your skin. If you get acne, wash your face 2 or 3 times a day with mild soap. Do not use harsh or perfumed soap, and do not pick at your skin. Ask your transplant team **before** you use any acne medicines.

Sinus Congestion or Drainage

You may have a stuffy or runny nose. If it is runny, the mucus should be clear. Mucus is not usually a sign of an infection unless it is cloudy or colored, or you have other cold or flu symptoms. Talk with your transplant team **before** you take any medicine for these symptoms.

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

Cardiology Clinic:
Weekdays 8 a.m. to 5 p.m.,
call 206-598-4300.

After hours and on weekends and holidays, call 206-744-2500. Say you are a heart transplant patient. A nurse will assess your problem and help you.