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Cyclosporine

Also called: Ciclosporin; Cyclosporin A; Sandimmune; Neoral; Restasis

What it is

An 11-amino-acid cyclic peptide immunosuppressant, approved as Sandimmune in 1983; Neoral, generics and the Restasis eye emulsion followed.

Approval status

FDA Approved. Approved in the US as Sandimmune (Novartis), NDA 050573, on November 14, 1983, for prevention of organ rejection; Neoral (modified, better-absorbed formulation), NDA 050715, approved July 14, 1995; Restasis ophthalmic emulsion, NDA 050790, approved December 23, 2002; generics are marketed (Drugs@FDA via openFDA and the Sandimmune and Neoral labels, read October 3, 2026).

Dosing, as printed in the page's Recommended Dosing box

Manufacturer's recommended dosing (FDA label)

From the prescribing information. Other doses studied, if any, are in the full dosing data below.

Protocol and source	Dose	Frequency	Duration	Route
Label: rheumatoid arthritis (Neoral) **[Approved label]** Neoral (cyclosporine, modified) US prescribing information (DailyMed set 94461af3, effective August 10, 2026)	2.5 mg/kg/day, up to 4 mg/kg/day	Twice daily, divided	Stop if no benefit by 16 weeks	Oral
Label: psoriasis (Neoral) **[Approved label]** Neoral (cyclosporine, modified) US prescribing information (DailyMed set 94461af3, effective August 10, 2026)	2.5 mg/kg/day (1.25 mg/kg twice daily), up to 4 mg/kg/day	Twice daily	At least 4 weeks before increasing	Oral
Label: dry eye (Restasis) **[Approved label]** Restasis Multidose (cyclosporine ophthalmic emulsion 0.05%) US prescribing information (DailyMed set 7224d810, effective August 21, 2025)	1 drop 0.05% in each eye	Twice daily, about 12 hours apart	Ongoing	Ophthalmic

Educational information, not medical advice. Each dose above is tagged with its source: an approved label, a published human study, animal data, or amounts reported by users. None is a recommendation for you. An unapproved compound has no established safe or effective human dose, and products sold for "research use only" are not made or tested for people. Talk to a doctor before acting on anything on this site, including before you start, stop or change any medicine or dose.

Key human evidence

The first 3 of the 9 human studies carded on the page (18 study cards in all):

• **The transplant trial that changed the field** (Human, 1983). In 209 cadaveric kidney recipients, predicted one-year graft survival was 80.4% with cyclosporine and prednisone against 64.0% with azathioprine-based standard therapy (P = 0.003), and patient survival 96.6% against 86.4%. **PMID 6350878**

• **Neoral against Sandimmune** (Human, 1998). In a randomised double-blind study in kidney recipients, more patients on Sandimmune needed dose increases to keep blood levels in range in the first 3 months; blood pressure, creatinine and cyclosporine-related adverse events did not differ. **PMID 9645802**

• **Added to methotrexate in rheumatoid arthritis** (Human, 1995). In severe rheumatoid arthritis not controlled by methotrexate, adding cyclosporine improved tender and swollen joint counts by 25% against placebo, with gains in pain, disability and global disease activity. **PMID 7791814**

Interactions

From the FDA label's drug-interaction section (Novartis. NEORAL (cyclosporine capsules, modified) US prescribing information, Clinical Pharmacology and Precautions, Drug Interactions. DailyMed version effective August 10, 2026, read October 5, 2026):

• With drugs that raise cyclosporine levels (for example diltiazem, verapamil, fluconazole, itraconazole, ketoconazole, azithromycin, clarithromycin, methylprednisolone, allopurinol, amiodarone): higher cyclosporine concentrations; monitor levels and adjust the dose (FDA label)

• With grapefruit and grapefruit juice: raise cyclosporine concentrations and should be avoided (FDA label)

• With drugs and supplements that lower cyclosporine levels (for example rifampin, carbamazepine, phenytoin, phenobarbital, St. John's wort, octreotide, orlistat, terbinafine): lower cyclosporine concentrations and possible loss of effect; monitor levels (FDA label)

• With drugs that may worsen kidney function (for example gentamicin, tobramycin, vancomycin, amphotericin B, ciprofloxacin, tacrolimus, NSAIDs such as diclofenac and naproxen): additive risk of kidney dysfunction; monitor closely (FDA label)

• With potassium-sparing diuretics, ACE inhibitors, angiotensin II receptor blockers and potassium-containing drugs: risk of high potassium; caution, and avoid potassium-sparing diuretics (FDA label)

• With digoxin, colchicine, statins, aliskiren, bosentan, dabigatran, repaglinide, sirolimus and etoposide: cyclosporine can raise their exposure; see the other drug's label (FDA label)

• 3 more in the Interaction Checker, https://greypeptides.com/tools/drug-interactions/

Side effects and cautions

Reported side effects	Contraindications and cautions
• Kidney function changes and high blood pressure, monitored through treatment • Adverse events comparable between the two oral formulations in the 1998 trial	• Boxed warning: to be prescribed by physicians experienced in immunosuppression; Sandimmune and Neoral are not interchangeable without monitoring • Kidney damage and high blood pressure • Serious infections and cancers, including lymphoma and skin cancer • Many drug interactions; grapefruit raises blood levels

Five questions to ask

1. Is Cyclosporine right for me, and is the labelled dose on this sheet right for my weight, age, kidney and liver function?

2. Here are the medicines and supplements I take. Do any of them interact with Cyclosporine? This sheet lists the interactions on record.
3. Which side effects should make me stop and call you, for example kidney function changes and high blood pressure?
4. Do any of the cautions on this sheet apply to me, such as: Boxed warning: to be prescribed by physicians experienced in immunosuppression?
5. What should we check before I start and while I am on it (blood tests, blood pressure, weight), and how often?

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