

# Cycloserine

Cycloserine (or D-Cycloserine) is an antibiotic that has been used in medicine for over 50 years.

At low doses, it enhances learning and brain growth (neuroplasticity), and has been used successfully to enhance the benefits of exposure-based psychotherapies. In these therapies, people gradually take on (or “expose” themselves) to situations that bring up anxiety. Examples include obsessional fears in OCD, phobias (including social phobia), panic attacks, and fears related to post-traumatic stress.

Exposure therapy changes the brain in ways that can lead to a sustained recovery from anxiety. It works best when exposure exercises are taken on daily. Cycloserine enhances learning mechanisms in the brain and can double the rate of response to exposure therapy. Cycloserine does not enhance other kinds of learning (such as memorization) and does not make people smarter.

A similar use is in transcranial magnetic stimulation (TMS) for depression, where taking cycloserine before the treatment improves outcomes.

At high doses, cycloserine has very different effects, blocking glutamate transmission much like the powerful antidepressant ketamine does. High doses (above 600 mg) can treat depression when other therapies do not work, but high doses have more side effects than low doses.

## How to take for exposure therapy

When using it for exposure therapy, it should be taken as you are finishing the exposure exercise; do not take it if not engaging in active exposure (otherwise a tolerance can develop). It

works better in low doses of 50-150mg, taken 1-2 hours before the exposure exercise.

For TMS, take 100 mg 1-2 hours before each TMS treatment for the first 2 weeks of treatment.

## How to take for depression

Higher doses are used for depression (it goes to different receptors at the higher dose). It can be taken all at once and the target dose is 1,000mg daily.

## Getting it at the pharmacy

Cycloserine is no longer used regularly as an antibiotic, so it is difficult to get at the pharmacy. It is manufactured by a non-profit research arm of Purdue University called the Chao Center:

The Chao Center  
3070 Kent Avenue  
West Lafayette, IN 47906-1075  
PHONE (765) 464-8414 or 1-877-930-2426  
FAX (765)464-8408  
info@thechaocenter.com

Cycloserine Blister Pack × 30 (NDC 13845-1202-2), Oral Capsule 250mg



Cycloserine is only available as 250 mg capsules, but you can create a lower dose (200 mg) through a compounding pharmacy. This also

brings significant cost savings. Search online for independent or compounding pharmacies. Alternatively, you can follow these directions to emulsify the medication into a liquid, allowing lower doses:

[chrisaikenmd.com/microdosing](http://chrisaikenmd.com/microdosing)

### **Side Effects**

Cycloserine is well tolerated in low dose. It has no weight gain and rarely causes fatigue, dizziness, ear ringing, tremor or headaches. Tremor improves by taking it with vitamin B6 (200 mg daily).

High doses are associated with rare cases of confusion, psychosis, seizures, and rare reports of congestive heart failure on high doses (1,000-1,500mg/day).

—Chris Aiken, MD, updated 7/21/2025