

# Anesthetic for depression? Study finds low-dose ketamine effective

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Low-dose intravenous infusions of ketamine, a general anesthetic used in minor surgeries, given over a long period are an effective treatment for depression, Mayo Clinic researchers found. The study is published in the *Journal of Psychopharmacology*.

About a decade ago researchers discovered that ketamine had the potential to alleviate [severe depression](#). However, ketamine also can have serious psychiatric side effects, so studies have been exploring the safest way to use it.

"It's surprising both that it works and how rapidly it has effects," says co-author Timothy Lineberry, M.D., a Mayo Clinic psychiatrist. "It sometimes can work in hours to reduce depressive symptoms and suicidal ideation. Our goal is to begin to determine how the drug can be administered safely in routine treatment."

The researchers studied 10 patients with a severe [depressive episode](#), either a [major depressive disorder](#) or a type of bipolar disorder, who had not found relief with at least two anti-depressant medications. The study shows that when ketamine infusions were given at the lower rate, they work as well as they do at higher infusion rates.

In the trial, patients were treated up to twice a week, up to four total treatments, with low-dose ketamine infusions (0.5 mg/kg total dose) given over 100 minutes until their depression lifted.

Researchers monitored side effects with two psychiatric scales, the Young Mania Rating Scale and the Brief Psychiatric Rating Scale. Eight of 10 patients showed at least 50 percent improvement. Five patients experienced complete remission of their depression, and four weeks after the study, two were still depression free.

In terms of side effects, one patient had brief and limited hallucinations, but others experienced only

drowsiness or dizziness during the infusions.

One significant question that must still be addressed is determining which patients will respond best to the treatment.

"While patients and clinicians are excited about ketamine's potential, we know that much more research lies ahead before we know which depressive conditions can be addressed with ketamine safely by clinicians in routine clinical practice," Dr. Lineberry says.

Provided by Mayo Clinic

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