

# Do antidepressants help chronic back pain and osteoarthritis?

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Antidepressants are commonly used worldwide to treat pain, however new research from the University of Sydney shows they offer little to no help for people suffering chronic back pain and osteoarthritis and may even cause harm.

Back [pain](#) and knee [osteoarthritis](#) affect millions of people globally and are leading causes of disability. When first-line pain medications such as paracetamol and ibuprofen fail to improve symptoms, many people are prescribed [antidepressants](#) for their pain. Most [clinical practice guidelines](#) recommend antidepressants for long term (chronic) back pain and hip and knee osteoarthritis, yet evidence supporting their use is uncertain.

Published today in the *BMJ* the study investigated the efficacy and safety of antidepressants for the treatment of back pain and osteoarthritis compared with placebo. The authors hope this study could help clinicians and patients make more informed decisions about whether to treat chronic back pain and osteoarthritis pain with antidepressants.

"The use of antidepressants to treat people with [chronic back pain](#) and osteoarthritis is increasing worldwide, but prior to our work, it was not clear whether antidepressants relieved pain or were safe," said lead author Dr. Giovanni Ferreira, postdoctoral research fellow at the Institute for Musculoskeletal Health at the University of Sydney and Sydney Local Health District and the University's Faculty of Medicine and Health.

"We conducted a review of all randomised clinical trials evaluating the efficacy of antidepressants for people with back pain or knee osteoarthritis and found that for back pain the antidepressants were either ineffective or provided a very small effect, which was unlikely to be perceived as worthwhile by most patients. For people with osteoarthritis, effects were still small, but could be potentially perceived as worthwhile by some patients," he said.

"It is concerning as some antidepressants significantly increase the risk of a person to experience adverse events. Many people are being treated with these medications that may not be helping their pain and may be doing them harm."

## About the study:

The study was a systematic review and meta-analysis that included 33 randomised controlled trials with more than 5,000 participants with low back or neck pain, sciatica, or hip or knee osteoarthritis.

The trials tested six classes of antidepressants including serotonin-noradrenaline reuptake inhibitors (SNRIs) and tricyclic antidepressants.

The study set a difference of 10 points on a 0-100 scale for pain as the smallest worthwhile difference between groups, which is a common threshold in studies of chronic pain.

Most [clinical trials](#) included in the review did not

include patients with pain and depression. The results apply to patients treated with these drugs for their pain condition, not depression in people living with pain.

### Key findings:

- SNRIs had a trivially small effect on back pain, reducing pain by just 5.3 points out of 100 on the pain scale compared with placebo after three months. This amount is unlikely to be considered clinically important by most patients.
- SNRIs had a slighter stronger effect on osteoarthritis pain after three months, with an average difference of 9.7 points on the pain scale compared with placebo. This amount is still small, but close to the 10 point difference needed for antidepressants to be considered worthwhile by some patients.
- Tricyclic antidepressants were ineffective for back pain and related disability—Tricyclic antidepressants and SNRIs might reduce pain in people with sciatica (pain down the leg associated with back pain), but the evidence was not certain enough to draw any firm conclusions.
- SNRI antidepressants significantly increased the risk of patients experiencing an adverse event; about two-thirds of patients taking this class of antidepressant had at least one adverse event such as nausea.

resolve uncertainties about the efficacy of antidepressants for sciatica and osteoarthritis highlighted by this review."

**More information:** Efficacy and safety of antidepressants for the treatment of back pain and osteoarthritis: systematic review and meta-analysis, *BMJ* (2021). [DOI: 10.1136/bmj.m4825](https://doi.org/10.1136/bmj.m4825)

Provided by University of Sydney

Professor Andrew McLachlan, Head of School and Dean of Pharmacy at the University of Sydney and co-author on the study, strongly advises those currently taking antidepressants for treating back pain and osteoarthritis not to abruptly cease treatment with antidepressant medicines but to consult with their doctor.

"This can lead to withdrawal effects which can be distressing and sometimes present as serious health issues. These withdrawal effects include dizziness, nausea, anxiety, agitation, tremor, sweating, confusion and sleep disturbance."

Dr. Ferreira added: "More research is needed to

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