

# Codeine could increase users' sensitivity to pain

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Using large and frequent doses of the pain-killer codeine may actually produce heightened sensitivity to pain, without the same level of relief offered by morphine, according to new research from the University of Adelaide.

Researchers in the Discipline of Pharmacology have conducted what is believed to be the world's first experimental study comparing the pain relieving and pain worsening effects of both [codeine](#) and morphine.

The University's Professor Paul Rolan, who is also a headache specialist at the Royal Adelaide Hospital, says codeine has been widely used as [pain relief](#) for more than 100 years but its effectiveness has not been tested in this way before.

"In the clinical setting, patients have complained that their headaches became worse after using regular codeine, not better," Professor Rolan says.

"Codeine use is not controlled in the same way as morphine, and as it is the most widely used strong [pain reliever](#) medication in the world, we thought it was about time we looked into how effective it really is."

In laboratory studies, University of Adelaide PhD student Jacinta Johnson found that codeine provided much less pain relief than morphine, but resulted in the same level of increased sensitivity to pain.

"Pain sensitivity is a major issue for users of [opioid drugs](#) because the more you take, the more the drug can increase your sensitivity to pain, so you may never quite get the level of relief you need. In the long term it has the effect of worsening the problem rather than making it better. We think that this is a particular problem in headache patients, who seem more sensitive to this effect," Ms Johnson says.

"Both codeine and morphine are opioids but codeine is a kind of 'Trojan horse' drug - 10% of it is converted to morphine, which is how it helps to provide pain relief. However, despite not offering the same level of pain relief, we found that codeine increased [pain sensitivity](#) just as much as [morphine](#)."

Professor Rolan says while more research is needed, these laboratory findings suggest a potential problem for anyone suffering from chronic pain who needs ongoing medication.

"People who take codeine every now and then should have nothing to worry about, but heavy and ongoing codeine use could be detrimental for those patients who have chronic pain and headache," Professor Rolan says. "This can be a very difficult issue for many people experiencing pain, and it creates difficulties for clinicians who are trying to find strategies to improve people's pain."

Ms Johnson presented this research at the 2013 International Headache Congress in the United States, and her work is featured in this month's issue of *Neurology Reviews*.

**More information:** [www.neurologyreviews.com/the-p...bed15156f33e46c.html](http://www.neurologyreviews.com/the-p...bed15156f33e46c.html)

Provided by University of Adelaide

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