

Antidepressants can lead to reductions in behavioral and neural responses to pain empathy

18 June 2019



Credit: Pietro Jeng/pexels.com

Depression is a disorder that often comes along with strong impairments of social functioning. Until recently, researchers assumed that acute episodes of depression also impair empathy, an essential skill for successful social interactions and understanding others. However, previous research had been mostly carried out in groups of patients who were on antidepressant medication. Novel insights of an interdisciplinary collaboration involving social neuroscientists, neuroimaging experts, and psychiatrists from the University of Vienna and the Medical University of Vienna show that antidepressant treatment can lead to impaired empathy regarding perception of pain, and not just the state of depression itself. The results of this study have been published in the scientific journal *Translational Psychiatry*.

An interdisciplinary research team set out to disentangle effects of acute depressive episodes and antidepressant treatment on empathy. The researchers recruited unmedicated patients with acute depression, and tested their empathic responses to the pain of others twice: first, during

an acute depressive episode, i.e., before they had received any medication. Second, after three months of psychopharmacological treatment with antidepressants (mostly selective serotonin reuptake inhibitors).

In both sessions, patients underwent [functional magnetic resonance](#) imaging while watching videos of people undergoing painful medical procedures. Their [brain activity](#) and self-reported empathy were compared to those of a group of healthy controls. Before treatment, patients and controls responded in a comparable way. After three months of [antidepressant treatment](#), the research revealed relevant differences: patients reported their level of empathy to be lower, and brain activation was reduced in areas previously associated with empathy.

First author Markus Rütgen says that reduced empathic responses were not caused by a general dampening of negative emotions: "The lowered emotional impact of negative events in a social context possibly allows patients to recover more easily. Nevertheless, the actual impact of reduced empathy on patients' social behavior remains to be explored."

More information: Markus Rütgen et al. Antidepressant treatment, not depression, leads to reductions in behavioral and neural responses to pain empathy, *Translational Psychiatry* (2019). [DOI: 10.1038/s41398-019-0496-4](https://doi.org/10.1038/s41398-019-0496-4)

Provided by University of Vienna

APA citation: Antidepressants can lead to reductions in behavioral and neural responses to pain empathy (2019, June 18) retrieved 12 November 2019 from <https://medicalxpress.com/news/2019-06-antidepressants-reductions-behavioral-neural-responses.html>

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