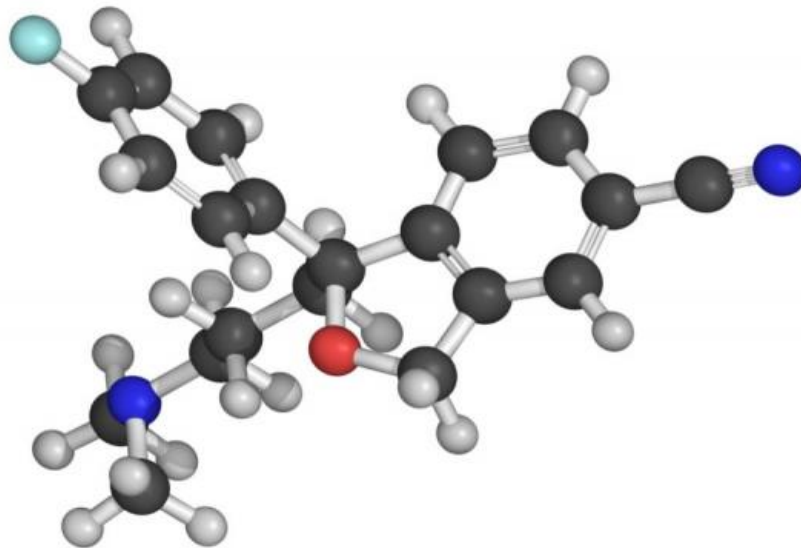


Anti-depressant drugs enhance feelings of control in depression

June 10 2016, by Tom Calver, Oxford Science Blog



Credit: Oxford Science Blog

It can take some time before anti-depressant drugs have an effect on people. Yet, the chemical changes that they cause in the brain happen quite rapidly. Understanding this paradox could enable us to create more effective treatments for depression.

However, new research from a group of scientists at Oxford, Harvard and Limerick universities has shown that the way the drugs affect learning about control and helplessness may explain both why anti-

depressant effects take time and why their effectiveness differs across individuals.

The team's study saw them administer a commonly prescribed dosage of an anti-depressant [drug](#) for 7 days to [people](#) who were depressed or not depressed. The drug, escitalopram, increases levels of the [neurotransmitter serotonin](#) in the central nervous system.

After 7 days of either taking the drug or a placebo, volunteers took part in a computer-based [game](#) designed to test learning ability. They were required to learn about how their actions could control events occurring in the game. Volunteers tested the effectiveness of their actions on numerous occasions (using keyboard presses) to check if they could control a sound turning on. The researchers had ensured that, in all cases, the volunteers actually had no control over these events in the game.

In these situations, healthy people who are not experiencing depression tend to perceive that they are 'in control', whereas people with depression report little control or so-called helplessness. In this study, published in the *Neurobiology of Learning and Memory*, the team found that the anti-depressant drug affected how people behaved in the game, and importantly how they learned about their own control over events in relation to events randomly occurring in the environment.

People with depression who were taking the placebo tended to interact less with the game and feel that the environment was more in control of events than they were. After taking the drug for 7 days, depressed volunteers interacted more with the game, testing whether their actions controlled the situation on more occasions, and the environment was judged as less controlling than for participants on the placebo. In other words, the drug influenced depressions' effects on learning about control.

Professor Robin Murphy said: 'Other research from members of our group has emphasized the effects these drugs have on processing of emotions, here we focussed on our sense of agency, on how we learn to be 'in control'. In addition to the direct chemical effect, the drug seems to contribute to learning to be in [control](#), less constrained by the environment, and perhaps this might be a link to how these drugs contribute to the alleviation of depression.'

More information: Rachel M. Msetfi et al. SSRI enhances sensitivity to background outcomes and modulates response rates: A randomized double blind study of instrumental action and depression, *Neurobiology of Learning and Memory* (2016). [DOI: 10.1016/j.nlm.2016.03.004](https://doi.org/10.1016/j.nlm.2016.03.004)

Provided by University of Oxford

Citation: Anti-depressant drugs enhance feelings of control in depression (2016, June 10)
retrieved 19 April 2024 from
<https://medicalxpress.com/news/2016-06-anti-depressant-drugs-depression.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--