

# If you are impulsive, take modafinil and count to 10

February 1 2013

---

Poor impulse control contributes to one's inability to control the consumption of rewarding substances, like food, alcohol, and other drugs. This can lead to the development of addiction. FDA-approved medications for alcoholism, like naltrexone (Revia) and disulfiram (Antabuse), are thought to reduce alcohol consumption by curbing cravings and creating unpleasant reactions to alcohol, effects which reduce the desire to drink alcohol.

New medications, however, might target the uncontrollable urges to consume drugs of abuse. The idea of treating problems of self-control by improving the ability to suppress impulses is not new. This approach is precisely what one is doing when counting to 10 before acting when one is upset. What is new, however, is the idea that medications might help with this process.

A new study by Lianne Schmaal at the University of Amsterdam and colleagues, published in *Biological Psychiatry*, suggests that [modafinil](#) (Provigil), a drug originally developed to increase wakefulness, may help some people to reduce drinking by improving their impulse control.

Although modafinil is formally approved solely for the treatment of several sleep disorders, it has been shown to enhance cognition. Such beneficial effects have been observed in healthy individuals and in patients with schizophrenia and attention-deficit/hyperactivity disorder. It has also been shown to reduce impulsivity in some individuals with addictions, but these effects had not yet been studied in non-stimulant

addictions like [alcohol dependence](#).

This background of potentially promising findings led Schmaal et al. to investigate the effects of modafinil on impulsivity in alcohol dependent patients and healthy controls. The researchers also measured participants' underlying [brain activity](#) while they completed a stop signal task designed to measure [impulsive behavior](#).

"This line of research adopts a strategy from the [attention deficit disorder](#) 'playbook'. Modafinil has effects that resemble amphetamine. This interesting new study suggests that, if you are impulsive, modafinil may help your self-control," commented Dr. John Krystal, Editor of [Biological Psychiatry](#).

They found that modafinil improved response inhibition in alcohol-dependent participants with initially poor response inhibition, but response inhibition was diminished in those who initially performed better. Modafinil also modulated brain activation in key brain regions directly involved response inhibition, but again, only in those patients with poor baseline response inhibition.

Schmaal explained further, "Most importantly, the study showed that modafinil had a positive effect in patients with high initial levels of impulsivity, whereas modafinil had a detrimental effect in patients with low initial levels of impulsivity. Positive effects of modafinil were associated with normalization of brain activation and connectivity patterns during the stop signal task."

These findings indicate that baseline levels of impulsivity should be taken into account when considering treatment with modafinil.

"The current observation of 'one size does not fit all' (i.e., that a pharmacotherapy may constitute a useful adjunct therapy for some

individuals but not for others) calls for caution when prescribing modafinil and strongly supports the potential of and the need for personalized medicine," added Schmaal.

**More information:** The article is "Effects of Modafinil on Neural Correlates of Response Inhibition in Alcohol-Dependent Patients" by Lianne Schmaal, Leen Joos, Marte Koeleman, Dick J. Veltman, Wim van den Brink, and Anna E. Goudriaan ([doi: 10.1016/j.biopsych.2012.06.032](https://doi.org/10.1016/j.biopsych.2012.06.032)). The article appears in *Biological Psychiatry*, Volume 73, Issue 3 (February 1, 2013)

Provided by Elsevier

Citation: If you are impulsive, take modafinil and count to 10 (2013, February 1) retrieved 26 April 2024 from <https://medicalxpress.com/news/2013-02-impulsive-modafinil.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>
--