

# Quitting smoking: Licensed medications are effective

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Nicotine replacement therapy and other licensed drugs can help people quit smoking, according to a new systematic review published in *The Cochrane Library*. The study, which is an overview of previous Cochrane reviews, supports the use of the smoking cessation medications that are already widely licensed internationally, and shows that another drug licensed in Russia could hold potential as an effective and affordable treatment.

In Europe and the US the only medications currently licensed for [smoking cessation](#) are nicotine replacement therapies (NRTs) such as nicotine patches and gums, the antidepressant [bupropion](#) and the drug varenicline, which blunts the effects of nicotine on [nicotine](#) receptors in the brain. In Russia and other parts of Eastern Europe cytisine, which is similar to varenicline, is also licensed for smoking cessation.

The authors combined the findings of existing Cochrane reviews on the subject, using all the available data from across the individual reviews. In total, they collected evidence from 267 studies, which together involved a total of 101,804 people. The studies covered a wide variety of licensed and unlicensed smoking cessation medications, comparing the treatments with placebo, and the three main treatments with each other. If a person stopped smoking for six months or longer, this was considered a successful quit attempt.

The three widely licensed medications and cytisine all improved smokers' chances of quitting. The odds of quitting were about 80% higher with single NRT or bupropion than with placebo, and between two and three times higher with varenicline than with placebo. However, Varenicline was about 50% more effective than any single formulation of NRT (patches, gum, sprays, lozenges and inhalers), but similar in efficacy to combining two types of NRT. Based on two recent trials, cytisine improved the chances of quitting nearly four-fold compared with placebo. Among other treatments tested,

[nortriptyline](#), another [antidepressant drug](#), was more effective than placebo but did not offer any additional improvement when combined with NRT.

"This review provides strong evidence that the three main treatments, [nicotine replacement therapy](#), bupropion and varenicline, can all help people to stop smoking," said lead researcher Kate Cahill of the Department of Primary Care Health Sciences at the University of Oxford in Oxford, UK. "Although cytisine is not currently licensed for smoking cessation in most of the world, these data suggest it has potential as an effective and affordable therapy."

The researchers also assessed the safety of different medications. Bupropion, which is known to trigger occasional seizures in vulnerable people, did not lead to an increase in the rate of seizures when used for smoking cessation in its slow-release version. Overall, NRT, bupropion and varenicline are considered low risk treatments, although the researchers say the results are currently less clear-cut for varenicline.

"Further research may be warranted into the safety of [varenicline](#)," said Cahill. "However, in the trials we looked at we did not detect evidence of any increase in neuropsychiatric, heart or circulatory problems."

**More information:** Cahill K, Stevens S, Perera R, Lancaster T. Pharmacological interventions for smoking cessation: an overview and network meta-analysis. *Cochrane Database of Systematic Reviews* 2013, Issue 5. Art. No.:CD009329. [DOI: 10.1002/14651858.CD009329.pub2](https://doi.org/10.1002/14651858.CD009329.pub2)

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