

Combining treatments boosts some smokers' ability to quit

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Combining two smoking cessation therapies is more effective than using just one for male and highly nicotine-dependent smokers who weren't initially helped by the nicotine patch, according to researchers at Duke Medicine.

The findings, published online June 17, 2014, in the *American Journal of Psychiatry*, also support using an adaptive treatment model to determine which [smokers](#) are likely to succeed in quitting with nicotine replacement alone before trying additional therapies.

"The findings offer a potential practical treatment approach that can identify smokers who don't respond to a single conventional treatment, but may benefit enormously from a combination of treatments," said Jed Rose, Ph.D., director of the Duke Center for Smoking Cessation and the study's lead author.

Rose and his colleagues have developed adaptive models for [smoking cessation](#) that tailor treatment regimens based on a person's likelihood of successfully quitting. Smokers start using a nicotine patch prior to quitting, and based on their reduction in smoking, researchers then determine who is likely to successfully quit with or without additional treatments.

"Using a safe and inexpensive nicotine patch, we can predict a smoker's success or failure," Rose said. "If a smoker has a low likelihood of succeeding, we can avert failure before it happens using a step-by-step

algorithm to switch a smoker to a treatment that's more likely to help."

Current smoking cessation treatments – including [nicotine replacement](#), bupropion (sold under the brand name Zyban) and varenicline (sold as Chantix) – have modest long-term success rates. Research has shown that less than 25 percent of smokers remain abstinent a year after treatment.

"It's clear that we need to improve success rates for smoking cessation, and it is thought that combining treatments could add to the efficacy," Rose said. "Combining two therapies, especially if they act by different mechanisms, may address different aspects of the addiction."

To measure the benefit of combining treatments, the researchers enrolled 349 adults who reported smoking 10 or more cigarettes a day. A six-item questionnaire measured the smokers' level of nicotine dependence. All participants were given [nicotine patches](#) prior to quitting.

After a week on the nicotine patch, the 222 participants who did not cut their smoking by 50 percent while on the patch were randomly assigned to take either varenicline and a placebo or a combination of varenicline and bupropion.

The participants took the assigned treatments for 12 weeks, and were followed periodically for six months. The varenicline and bupropion were generally well tolerated, with side effects including headache, dry mouth, irritability, insomnia, vivid dreams and changes in taste.

The researchers observed an overall benefit of adding bupropion to varenicline, with 39.8 percent of participants on the combination treatment abstaining from smoking at weeks 8-11 after the target quit date, versus 25.9 percent taking varenicline alone.

The combined treatment had a much greater effect on male smokers and those highly dependent on nicotine, while no significant difference was seen in female smokers or those with lower levels of [nicotine dependence](#).

Smokers who were both male and highly dependent saw the greatest benefit of the combination of treatments.

"Highly dependent male smokers had a boost in quit rates from 14 percent on [varenicline](#) alone to 61 percent with the combination treatment, which is a dramatic increase," Rose said.

"While there may be some drawbacks to prescribing two smoking cessation treatments, such as cost or possible side effects, this study gives us a simple strategy to find those who would benefit the most from combined treatment, and spare others who may not benefit."

The researchers said additional studies are needed to investigate the mechanisms that may account for the differences in treatment responses across genders and other populations of smokers.

Provided by Duke University Medical Center

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