

Researchers testing vaccine to help people quit smoking

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In a unique twist to a decades-old health crisis, Michigan State University researchers are testing a new vaccine to help people quit smoking and avoid relapses.

Using a [vaccine](#) - as opposed to patches or gums, which attempt to wean people off nicotine - is a novel approach to the addiction that results in more than \$192 billion in health care costs each year, according to federal estimates.

The vaccine, called NicVAX, is being developed and manufactured by Nabi Biopharmaceuticals of Rockville, Md. It will be tested at 25 sites nationwide.

Jonathan Henry, an associate professor with MSU's Department of Psychiatry and the Clinical and Translational Sciences Institute, is leading the clinical trial at MSU.

"Using a vaccine to treat [nicotine dependence](#) is one of the most unique approaches to battling addiction," Henry said. "We are very hopeful this strategy will help smokers kick the habit."

The vaccine works by preventing a smoker from "feeling good" while smoking. When nicotine enters the bloodstream, it quickly crosses the blood-brain barrier, triggering the release of stimulants such as [dopamine](#) that provide the smoker with a positive sensation, eventually leading to addiction.

NicVAX stimulates the immune system to produce antibodies that bind with and prevent [nicotine](#) from crossing the blood-brain barrier, essentially preventing the highly-addictive pleasure sensation experienced by smokers.

Vaccine developers hope that prevention helps people quit [smoking](#), and because the antibodies remain in the bloodstream for several months, the vaccine could be effective in preventing relapse. With current smoking-cessation therapies, relapse rates can be as high as 90 percent in the first year after a smoker quits.

During the clinical trial, participants will receive the vaccine several times throughout a 12-month period. Results from the placebo-controlled study are expected to be available in early 2012. If the clinical trial proves successful, Nabi Biopharmaceuticals will Food and Drug Administration approval shortly thereafter.

At MSU, about 50 people will take part in the clinical trial, which nationwide will test 1,000 participants. Henry and his team of researchers, from the departments of Psychiatry and Family Medicine and the Clinical and Translational Sciences Institute, are seeking subjects for the trial.

Participants must be smokers ages 18 to 65 who smoke at least 10 cigarettes per day and are motivated to quit.

Provided by Michigan State University

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