

Raising pay can reduce smoking rates

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Smoking harms nearly every organ in the body and causes many diseases. Credit: CDC/Debra Cartagena

In addition to restricting when and where tobacco is used at work, UC Davis Health System research shows that employers can do something else to reduce smoking: raise wages.

Published in the August issue of the *Annals of Epidemiology*, the study found that a 10 percent increase in [wages](#) leads to about a 5 percent drop in [smoking rates](#) among workers who are male or who have high school

educations or less and improves their overall chances of [quitting smoking](#) from 17 to 20 percent.

"Our findings are especially important as inflation-adjusted wages for low-income jobs have been dropping for decades and the percentage of workers in low-paying jobs has been growing nationwide," said study senior author Paul Leigh, professor of public health sciences and researcher with the Center for Healthcare Policy and Research at UC Davis. "Increasing the [minimum wage](#) could have a big impact on a significant health threat."

Smoking rates are declining in the U.S., but it remains the leading cause of preventable deaths from illnesses such as heart disease, stroke, chronic [obstructive pulmonary disease](#) and lung cancer. Leigh and lead author Juan Du, who received her doctoral degree at UC Davis, wanted to know if wage changes could leverage a further reduction in the number of people who smoke.

The team evaluated data on wages, [smoking status](#) and state of residence for full-time employees aged 21 to 65 years from the 1999 to 2009 Panel Study of Income Dynamics. They excluded those under 21, since wage variation is small for this age group. They also excluded those who never smoked, as the goal was to evaluate influences on quitting rather than starting smoking.

"We assume that people begin smoking for reasons other than wages," said Leigh. "About 90 percent of smokers in the United States started smoking before age 20, so the data captured a sample of most full-time workers who have ever smoked."

Leigh and Du used a statistical model in their evaluation that is traditionally applied in economics called instrumental variables analysis. The technique is designed to mimic a randomized, controlled medical

study to determine the effectiveness of a particular treatment. Changes in the "treatment," which in this case was wages, were measured for each year and then compared to smoking rates in the subsequent year, revealing the role of wage increases on reducing smoking among men and the less educated. Smoking prevalence was lower overall in states with higher minimum wages or higher rates of unionization.

The researchers also found that smoking rates for women were not influenced by wages, and that smoking rates for men were not influenced by additional household income. They speculate that men may be more apt to tie self-worth to pay, increasing the likelihood of risky health behaviors among men in lower-paying jobs.

"Our findings add to the existing body of epidemiological literature showing that lower income predicts [poor health habits](#)," Leigh said. "They also show that higher minimum wages could reduce the prevalence of [smoking](#)."

More information: The study, titled "Effects of Wages on Smoking Decisions of Current and Past Smokers," is available at dx.doi.org/10.1016/j.annepidem.2015.03.016

Provided by UC Davis

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