

ADHD treatment associated with lower smoking rates

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

Treating attention deficit hyperactivity disorder (ADHD) with stimulant medication may reduce smoking risk, especially when medication is taken consistently, according to an analysis led by researchers at Duke Medicine.

The findings appear online May 12, 2014, in the journal *Pediatrics*.

"Given that individuals with ADHD are more likely to smoke, our study supports the use of stimulant treatment to reduce the likelihood of [smoking](#) in youth with ADHD," said senior author Scott Kollins, Ph.D., professor of psychiatry and behavioral sciences and director of the Duke ADHD Program. "The risk is further lowered when adherence to medication treatment is consistent, presumably since this increases the chances that symptoms are managed effectively."

ADHD is a common childhood disorder that can continue through adolescence and adulthood, and is characterized by hyperactivity, difficulty paying attention and impulsivity. It is most commonly treated with [stimulant medication](#) (such as Vyvanse or Concerta), as well as with behavior therapy or a combination of the two.

Individuals with ADHD smoke at rates significantly higher than the general population, and they often start earlier. Studies have shown that youth with ADHD are two to three times more likely to smoke cigarettes than their peers, and 40 percent of adults with ADHD smoke regularly, more than twice the rate among adults without ADHD.

Research on how stimulant medications influence smoking behaviors in individuals with ADHD has led to mixed results. Some studies suggest an increase in smoking among those treated with stimulant medications, while others showed no effect or a decrease in smoking.

"Nicotine operates on the same pathways in the brain as stimulant medications, and the relationship between stimulants and smoking has been controversial," said lead author Erin Schoenfelder, Ph.D., clinical associate and a psychologist in the Duke ADHD Program.

"It has been suggested that some people with ADHD 'self-medicate' their

attention deficits using nicotine," Schoenfelder said. "Our findings show that treating ADHD effectively with medication may prevent young people from picking up the habit."

The researchers examined 14 longitudinal studies of cigarette smoking and ADHD treatment, including a total of 2,360 individuals with ADHD, making this the largest meta-analysis on the issue to date.

Some of the studies used [nicotine dependence](#) to measure smoking behaviors, although nicotine dependence may not be found in adolescents who recently started smoking. In order to capture an accurate picture of smoking behaviors, the researchers expanded their criteria beyond nicotine dependence to include smoking frequency and whether participants currently smoked.

The analysis revealed a significant association between stimulant treatment and lower smoking rates. The effect was larger in those with more severe ADHD and when participants took stimulant medications continuously.

The researchers noted that based on the design of the study, they were able to identify an association but not a causal relationship between reduced smoking risk and stimulant treatment. Additional studies are needed to determine the recommended timing and duration of stimulant treatment to help lower smoking risk.

"This study may debunk the perception that stimulants will increase one's risk for smoking," Kollins said. "It gives us more confidence when we talk with parents to reassure them that consistent ADHD treatment won't increase their children's risk of smoking, and in fact, may actually do the opposite."

"My hope is that this research can help inform our efforts to prevent

negative outcomes for kids with ADHD, including cigarette smoking," Schoenfelder said. "This population hasn't been targeted for smoking prevention efforts, despite the well-known connection between ADHD and smoking."

Provided by Duke University Medical Center

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