

# **Cannabis does not improve breathlessness during exercise in patients with advanced COPD**

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Cannabis neither improves nor worsens breathlessness in people with advanced COPD. Credit: ATS

Inhaled vaporized cannabis does not appear to improve or worsen exercise performance and activity-related breathlessness in patients with advanced chronic obstructive pulmonary disease (COPD), according to a randomized controlled trial published online in the *Annals of the American Thoracic Society*.

In "Effect of Vaporized Cannabis on Exertional Breathlessness and Exercise Endurance in Advanced COPD: A Randomized Controlled Trial," Sara J. Abdallah, a Ph.D. candidate in exercise physiology at McGill University, and co-authors report that the trial did not find a difference between vaporized cannabis and placebo on lung volumes or heart rate at rest or during exercise. Nor did the study find that cannabis affected cognitive function, mood or psycho-activity.

The burden of breathlessness in patients with COPD is high. Even when on optimal medication for their lung disease, many patients with COPD continue to suffer from disabling breathlessness at rest and while performing basic activities of daily living.

"We first became aware of the therapeutic potential of cannabis in managing COPD symptoms from patients themselves," Ms. Abdallah said. "We decided to pursue this study because patients were reporting symptomatic relief of their COPD symptoms after cannabis use."

In the 1970s, controlled studies reported that smoking cannabis opened the airways of adults with and without asthma. More recently, a large

observational study found a positive association between cannabis use and forced expiratory volume (the amount of air that can be forcefully exhaled in one second) and forced vital capacity (the total amount of air that can be exhaled after taking a deep breath).

In the current crossover study of 16 patients with advanced COPD, all the patients were taking optimal medication for their lung disease: dual or triple inhalation therapy (long-acting muscarinic antagonist and long-acting beta2-agonist bronchodilator with or without an inhaled corticosteroid).

Participants were randomly selected to inhale a single dose of vaporized cannabis or a placebo before exercising on a stationary bike. Participants then "crossed over" to the other arm of the trial. Neither the researchers nor the patients knew when they were receiving the vaporized cannabis or the placebo.

Although the study did not find a clinically meaningful negative or positive effect of vaporized cannabis on breathlessness during exercise or on [exercise performance](#), the researchers noted variability in responsiveness to the cannabis.

After inhaling vaporized cannabis, breathlessness during exercise improved in 4 of the 16 patients. In the remaining 12 patients, breathlessness during exercise did not change, or worsened.

Senior study author Dennis Jensen, Ph.D., associate professor of kinesiology and physical education and a scientist in the Translational Research in Respiratory Diseases Program at McGill University, said that trial results may not be generalizable because the number of participants was small and represented a relatively homogenous group of patients with stable, but advanced, COPD.

In addition to the fact that all the participants were on optimal COPD therapy, Dr. Jensen, who is also director of the McGill Research Centre for Physical Activity and Health, suggested a number of factors that may have limited the therapeutic benefit of cannabis in the study, including the dose of cannabis used, that it was inhaled rather than taken orally and that it was administered only once and not repeated.

"Future clinical trials are warranted and should evaluate the therapeutic potential of various doses of vaporized and oral cannabis, including oils and pills, administered over longer periods of time in patients with mild to moderate COPD," he said.

**More information:** *Annals of the American Thoracic Society*.  
[www.thoracic.org/about/newsroom...anuscript\\_annals.pdf](http://www.thoracic.org/about/newsroom...anuscript_annals.pdf)

Provided by American Thoracic Society

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