

PM_{2.5} exposure linked to asthma rescue medication use

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(HealthDay)—For individuals with asthma, increased fine particulate matter (PM_{2.5}) exposure is associated with increased weekly rescue inhaler use, according to a study published online Nov. 26 in the

Proceedings of the National Academy of Sciences.

Austin M. Williams, from the University of Wisconsin-Madison, and colleagues used a nationwide panel dataset tracking the use of rescue medications among 2,874 individuals with asthma and their exposure to PM_{2.5} concentration between 2012 and 2017. The sample consisted of individuals using an asthma digital health platform, which made use of a wireless sensor to track the place and time of inhaler use and nonevent location and time indicators.

The researchers found that a 1 µg/m³ (12 percent) increase in weekly exposure to PM_{2.5} was correlated with a 0.82 percent increase in weekly inhaler use. They observed seasonal, regional, and income-based heterogeneity in the response. A reduction of 1 µg/m³ in particulate matter concentration nationwide would yield [economic benefits](#) of nearly \$350 million annually based on response prediction and estimates from the literature on willingness to pay to avoid asthma symptoms.

"Initiatives that seek health and productivity improvements via [pollution reductions](#) are likely to generate ecological benefits simultaneously, while also pushing human capital and wealth toward levels where [environmental sustainability](#) becomes important for broader sets of reasons," the authors write.

One author disclosed financial ties to Propeller Health, which distributes the asthma management platform on which the data are based.

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