

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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