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**Decrease in Air Pollution Associated With Decrease in Respiratory Symptoms Among Children in Southern California**

Decreases in ambient air pollution levels over the past 20 years in Southern California were associated with significant reductions in bronchitic symptoms in children with and without asthma, according to a study appearing in the April 12 issue of *JAMA.*

Childhood bronchitic symptoms are significant public and clinical health problems that produce a substantial burden of disease. Ambient air pollutants are important determinants of bronchitis occurrence. Since 1992, significant improvements in air quality have been observed across Southern California due to a broad range of air pollution reduction policies and strategies. Kiros Berhane, Ph.D., of the University of Southern California, Los Angeles, and colleagues examined whether improvements in ambient air quality in Southern California were associated with reductions in bronchitic symptoms in children. The study involved children (age range, 5-18 years) from 3 groups, and was conducted during the 1993-2001, 1996-2004, and 2003-2012 years in 8 Southern California communities.

A model was used to estimate the association of changes in pollution levels with bronchitic symptoms. The primary measured outcome among children was annual age-specific prevalence of bronchitic symptoms during the previous 12 months based on the parent's or child's report of a daily cough for 3 months in a row, congestion or phlegm other than when accompanied by a cold, or bronchitis.

The 3 cohorts included a total of 4,602 children (average age at baseline, 8 years; 49 percent girls; 45 percent Hispanic white) who had data from 2 or more annual questionnaires. Among these children, 19 percent had asthma at age 10 years. The authors found that decreases in ambient concentrations of nitrogen dioxide, ozone, and particulate matter with an aerodynamic diameter less than 10 µm (PM10) and less than 2.5 µm (PM2.5) were associated with significant decreases in bronchitic symptoms in children with and without asthma. The reductions were proportionally larger in children with asthma and remained similar when examined at 10, 13, and 15 years of age during the follow-up period. Among patients with asthma, the reductions in bronchitic symptoms tended to be larger in boys and among children from households with dogs.

“While the study design does not establish causality, the findings support potential benefit of air pollution reduction on asthma control,” the authors write.

(doi:10.1001/jama.2016.3444; this study is available pre-embargo at the For The Media [website](http://media.jamanetwork.com/).)

**Editor’s Note**: Please see the article for additional information, including other authors, author contributions and affiliations, financial disclosures, funding and support, etc.

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