

# City Kids May Breathe Easier in the Country

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Children with asthma have an easier time breathing if they spend even a few days in the country, safeguarded from urban air pollution, a study led by Giovanni Piedimonte, M.D., professor and chairman of the Department of Pediatrics at the West Virginia University School of Medicine, finds.

The study, published in the March issue of the journal *Pediatrics*, shows for the first time that limiting allergic [children](#)'s exposure to outdoor air pollutants can improve lung function while reducing inflammation of the airways.

“This finding is significant because inflammation creates health risks for children with chronic respiratory problems,” Dr. Piedimonte explains. “Now we know that simply providing a cleaner environment in terms of [air quality](#) helps provide relief fairly rapidly for children with [asthma](#).”

He adds, “This study suggests that possibly we could manage asthmatic children with much less medication if the air they breathed was cleaner.”

Researchers from the [United States](#) and Italy studied 37 Italian children with allergies and mild but persistent asthma, transporting them to a relatively pristine countryside setting - with lower levels of pollution - for a week.

Children recruited for the study were patients ages 7 to 14 at an asthma clinic in Pescara, Italy. For the rural part of the study, the children stayed in a hotel during a school camp in Ovindoli, Italy. They remained

medicine-free and treatment-free for the duration of the study so the researchers could make correlations between the environmental air quality and the biomarkers that signal inflammation.

[Air pollution](#), pollen counts and meteorological conditions were monitored at both sites.

“A whole host of pollutants in the air of cities in economically developed countries has contributed to a worldwide rise in asthma rates among children,” says Piedimonte, who is also physician in chief of WVU Children's Hospital and director of the WVU Pediatric Research Institute. “Even knowing that, I was surprised to see how much better the children’s lung functions were after just a few days of cleaner air.”

Some of the problem pollutants in the air of industrialized countries are ozone, carbon monoxide and benzene - all of which can trigger emergency room visits and hospitalizations of asthmatic children. “In addition, we have new data suggesting that ultrafine particles may be especially toxic to the airways of children with asthma,” Piedimonte says.

The Health Statistics Center of the West Virginia Department of Health and Human Resources reports that 31,000 children in West Virginia have asthma. Until 2003, hospitalization rates for asthma were higher in the United States than in West Virginia. Now the opposite is true.

“West Virginia is experiencing an epidemic of asthma worse than in the rest of the United States,” Piedimonte says. “Among the contributing risk factors are high levels of air pollution plus low socioeconomic status and high rates of obesity and smoking.”

The United Health Foundation’s recent health rankings gave West Virginia a rank of 39 among the states for overall health, and it named

high levels of air pollution as one of the state's top challenges. "Our study shows how vital air quality is in terms of triggering asthma and allergies in children," Piedimonte says. "It's something to evaluate carefully before considering government cutbacks in regulatory agencies that affect the air we breathe and set limits on industrial pollution."

Provided by West Virginia University Health Sciences Center

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