

# Improved air quality linked to fewer pediatric ear infections

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A new study by researchers at UCLA and Brigham and Women's Hospital in Boston suggests that improvements in air quality over the past decade have resulted in fewer cases of ear infections in children.

Ear infections are one of the most common illnesses among children, with annual direct and indirect costs of \$3 billion to \$5 billion in the United States.

"We believe these findings, which demonstrate a direct correlation between [air quality](#) and [ear infections](#), have both medical and political significance," said study co-author Dr. Nina Shapiro, director of pediatric otolaryngology at Mattel Children's Hospital UCLA and an associate professor of surgery at the David Geffen School of Medicine at UCLA. "The results validate the benefits of the revised Clean Air Act of 1990, which gave the Environmental Protection Agency more authority to implement and enforce regulations reducing air-pollutant emissions. It also shows that the improvements may have direct benefit on health-quality measures."

The research appears in the February issue of *Otolaryngology-Head and Neck Surgery*, the official peer-reviewed publication of the American Academy of Otolaryngology-Head and Neck Surgery Foundation.

The researchers reviewed National Health Interview Survey data for 120,060 children between the years of 1997 and 2006 and measured the number of instances of three disease conditions for each year —

frequent ear infections (three or more within a year), respiratory allergy and [seizure activity](#), which is not influenced by air quality but was included as a control condition.

These numbers were then cross-referenced with the EPA's air-quality data on pollutants, including carbon monoxide, nitrous dioxide, sulfur dioxide and particulate matter, for the same time period. The study authors discovered that as air quality steadily improved, the number of cases of frequent ear infections significantly decreased.

The results also showed that there was not an association between improved air quality and improved rates of pediatric respiratory allergy, possibly due to the fact that allergens are not pollutants.

Provided by University of California - Los Angeles

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