



STUDYDADDY

Get Homework Help From Expert Tutor

[Get Help](#)

USC study examines near-roadway air pollution as contributor to asthma



[\[/41834/usc-study-examines-near-roadway-air-pollution-as-contributor-to-asthma/\]](#) BY

Leslie Ridgeway [\[/author/leslie-ridgeway/\]](#)

SEPTEMBER 25, 2012

Research conducted at USC indicates that at least 8 percent of the more than 300,000 cases of childhood asthma in Los Angeles County can be attributed to traffic-related pollution at homes within 75 meters — a little less than 250 feet — of a busy roadway.

The study, which focused on the Los Angeles basin, also indicated that previous estimates of childhood asthma exacerbation related to air pollution may have underestimated the true burden of exposure on society.

The research, which was published online Sept. 24 in *Environmental Health Perspectives*, was conducted in collaboration with the Swiss Tropical and Public Health Institute and Sonoma Technology Inc.

“Our findings suggest that there are large and previously unappreciated public health consequences of air pollution in Los Angeles County and probably other metropolitan areas with large numbers of children living near major traffic corridors,” said Rob McConnell, professor of preventive medicine at the Keck School of Medicine of USC.



“Plans to reduce greenhouse gas emissions and combat climate change offer an opportunity to develop ‘win-win’ strategies,” said Rob McConnell, professor of preventive medicine at the Keck School. (Photo/Don Milici)

The USC study also looked at new state of California policies intended to cut back on vehicular greenhouse gas emissions that cause climate change. An important aim of these policies is to reduce vehicular emissions of greenhouse gases, both by improving fuel efficiency and reducing vehicle miles traveled by increasing use of public transportation.

As part of these policies, housing developers would be offered incentives, such as speeding up environmental review, to design projects located closer to transit stops with bus or rail service that will encourage use of fuel-efficient mass transit.

The investigators noted, however, that transit stops are often located on or near busy roads and that there has been little study of the impact of these policies on exposure to children living near major roadways.

The study concluded that better information is needed to develop the optimal mix of policies that reduce sprawl, encourage walking and use of mass transit to reduce vehicle miles traveled, greenhouse gases and regional air pollution, as well as to reduce children's near-roadway exposure to emissions from vehicles still traveling on roadways.

“Plans to reduce greenhouse gas emissions and combat climate change offer an opportunity to develop ‘win-win’ strategies that will maximize the health benefits from reduction both of greenhouse gases and of air pollutants that directly harm children,” McConnell said.

“There is also emerging evidence that other diseases may be caused or exacerbated by urban air pollution, including atherosclerosis, lung cancer, chronic obstructive pulmonary disease and neurological disorders,” he added. “Thus, policies to combat climate change may have near-term health benefits beyond reducing the burden of disease due to asthma.”

By using data from the Children's Health Study, a long-term study of effects of air pollution ongoing since 1993, the researchers estimated the effects of air pollution on children suffering from asthma.

Regional air pollution measurements from the U.S. Environmental Protection Agency and area maps were used to estimate exposure to near-roadway pollution in the Los Angeles area. This information was linked to population data.

Asthma exacerbation in this study was connected to regional pollutants, including nitrogen dioxide and ozone that cover large parts of the air basin, and to near-roadway

pollutants that are responsible for the development of asthma.

The researchers found that living near busy roads contributed disproportionately to the more serious exacerbations of asthma in children, including emergency room visits and hospitalizations.

In addition, a 20 percent reduction in children's near-roadway pollution exposure would result in an estimated 5,900 fewer cases of childhood asthma in Los Angeles County, according to the research, whereas a 20 percent increase in exposure would result in 5,900 more cases of asthma.

Funding for the research was provided by funds from British Petroleum as part of an air quality violations settlement agreement with the South Coast Air Quality Management District, a California state agency.

The study also was supported by a National Institute of Health grant, as well as grants from the Environmental Protection Agency and support from the Hastings Foundation.

Top stories on USC News

[Athletics](#) [/category/athletics/] [University](#) [/category/university/]

[/79117/usc-athletics-hits-its-highest-fundraising-total-ever/]

USC Athletics hits its highest fundraising total ever

With \$300 million raised, the department's Heritage Initiative meets its Campaign for USC goal.

[/79117/usc-athletics-hits-its-highest-fundraising-total-ever/]

[Arts](#) [/category/arts/]

[/79220/who-wouldnt-want-randy-newman-as-a-musical-mentor/]

Who wouldn't want Randy Newman as a musical mentor?

One lucky alum's 15-minute sit as part of a USC Thornton program turns into a melodious two-hour meeting.

[/79220/who-wouldnt-want-randy-newman-as-a-musical-mentor/]

[Science/Technology](#) [/category/science-technology/]

[/78876/organisms-defend-themselves-against-climate-change-to-a-point/]

Organisms defend themselves against environmental stress



STUDYDADDY

**Get Homework Help
From Expert Tutor**

Get Help