

October 29, 2006

# A Study Links Trucks Exhaust to Bronx Schoolchildren's Asthma

By **MANNY FERNANDEZ**

In New York City, air pollution levels have typically been monitored by inanimate objects, at more than a dozen locations around town. But in the South Bronx, from 2002 to 2005, air pollution monitors went mobile. They went to the playground, to the gritty sidewalks, even to the movies.

A group of schoolchildren carried the monitors everywhere they went. The instruments, attached to the backpacks of children with [asthma](#), allowed researchers at [New York University](#) to measure the pollution the children were exposed to, morning to night.

The South Bronx is home to miles of expressways, more than a dozen waste-transfer stations, a sewage-treatment plant and truck traffic from some of the busiest wholesale produce, meat and fish markets in the world.

It is also home to some of the highest asthma hospitalization rates for children in the city.

The N.Y.U. study found that the students were exposed to high levels of air pollutants in their neighborhoods and that children in the South Bronx were twice as likely to attend a school near a highway as were children in other parts of the city.

The findings paint a bleak picture of the air quality in one of the poorest sections of the city and have focused renewed attention from community groups and elected officials on curbing pollution from truck exhaust.

The levels did surprise me, said José E. Serrano, the Bronx representative whose district includes the South Bronx. They are really telling us that this is a very serious problem.

Mr. Serrano, who is a Democrat and who helped secure federal money for the study, and the researchers held a news conference this month about the findings.

Ten children from each of four public schools in the South Bronx P.S. 154, M.S. 302, M.S. 201 and Community School 152 took part in the study. They were given wheeled black and dark blue backpacks outfitted with a battery-powered pump and an air filter, along with other instruments.

You rolled it, so it wasn't really that heavy, said Derrick Reliford, one of the students.

The children, who were volunteers ages 10 to 12, each took part in the study for a month. They reported to researchers stationed at the schools twice a day and kept diaries on their asthma symptoms and daily activities.

Their lung function was tested, and the filters from their backpacks were regularly changed and analyzed. A van parked near the schools served as an air-monitoring lab.

Derrick, 14, took part in the study in 2002, when he was a student at Public School 154 on East 135th Street. The school is across the street from the Major Deegan Expressway.

His great-grandmother Evelyn Reliford, 70, said she never thought much about the air pollution in the Mott Haven neighborhood. I didn't really worry about it until they took the study, said Mrs. Reliford.

Airborne particles like dust, soot and smoke that are less than 2.5 micrometers in diameter are small enough to lodge themselves deep in the lungs. Studies have linked pollution of this sort to respiratory problems, decreased

lung function, nonfatal heart attacks and aggravated asthma, according to the United States [Environmental Protection Agency](#).

E.P.A. officials said these fine particles, a significant portion of which are produced by diesel engine emissions, lead to 15,000 premature deaths a year nationwide.

In the South Bronx study, of the 69 days for which measurements were taken over the three-year period, average daily exposure to fine-particle pollution for a group of 10 children exceeded the E.P.A.'s new standard on 18 days. The standard will be 35 micrograms per cubic meter in December.

I think it's an indicator that these kids are being exposed to very high fine-particle concentrations on a fairly regular basis, said George Thurston, associate professor of environmental medicine at the N.Y.U. School of Medicine, who was one of the study's principal researchers.

Walter Mugdan, director of environmental planning and protection for the E.P.A. region that includes New York, said he had not seen the detailed study, which was financed in large part by an E.P.A. grant. He cautioned that there were differences between the methods used by the agency and by researchers to gather data on air pollution. Bronx County is one of 10 counties in the state that exceed current federal air quality standards for fine-particle pollution. We know that this is an area that has air quality that isn't satisfactory, he said.

Four Bronx organizations that supported the study including the Point, a Hunts Point community group have asked pro bono lawyers to look into their legal options to get the E.P.A. and the state to improve air quality in the South Bronx.

Hopefully, this will ring the alarm bells a little louder, said Kellie N. Terry-Sepulveda, executive managing director of the Point.

New York State must submit a plan to the E.P.A. by April 2008 detailing how it will bring its fine-particle pollution levels into compliance. States that fail to submit or implement their plans risk losing federal highway money. All states must bring their levels of fine-particle pollution into compliance by 2010, though they can ask for an exemption seeking more time, E.P.A. officials said.

The State Department of Environmental Conservation said in a statement that the state plan is under development and will be released for public comment late next year. Fine-particle pollution levels are expected to decrease as a result of city, state and federal measures already in place, the statement said.

Gov. [George E. Pataki](#) signed a bill in August that requires that all diesel vehicles owned by the state or working on state projects use low-sulfur diesel fuel and be retrofitted with the best available technology to reduce emissions.

Dr. Thurston said the findings of the study, which will be published in a scientific journal next year, showed that only 5 to 10 percent of the fine particle pollution was soot from diesel exhaust, but it was that portion that seemed to be having the worst effect on the children's asthma. He said their symptoms, like wheezing, doubled on days when pollution from truck traffic was highest.

The study also examined the proximity of expressways to schools. Four expressways the Cross Bronx, Major Deegan, Bruckner and Sheridan and the Bronx River Parkway run through or around the South Bronx. About one-fifth of all students from prekindergarten to eighth grade in the area go to schools located within 500 feet, or about two blocks, of major highways, the study showed.

The research was conducted by the Institute for Civil Infrastructure Systems at the university's Wagner Graduate School of Public Service.

Asthma, which causes wheezing, coughing and shortness of breath, is the most common chronic disease among children. In the Bronx, the borough with the highest percentage of children, the asthma hospitalization rate for boys and girls under 14 is 9.3 per 1,000 children.

Of the 10 neighborhood areas in the city with the highest rates, five are in the Bronx. The highest is East Harlem, according to state health data. At the Children's Hospital at [Montefiore Medical Center](#), the Bronx, there were 7,000 admissions last year; of those, 1,200 were asthma related. It's definitely a crisis, Dr. Deepa Rastogi, director of the hospital's Asthma Center, said of the borough's asthma rates.

Dr. Rastogi and other Bronx asthma experts said air pollution was only one of the factors contributing to the problem. Asthma attacks can be triggered by secondhand smoke, dust mites, pets and mold, in addition to outdoor air pollution.

Dr. A. Hal Strelnick, a professor of family and social medicine at the Albert Einstein College of Medicine in the Bronx, said the borough's high rates stemmed from a high concentration of traffic in a densely populated area; poorly maintained housing in impoverished neighborhoods; a lack of access to medical care; and a large population of blacks and Hispanics, two groups with high rates of asthma.

He said his own asthma research and the N.Y.U. study showed that the old saying that we all breathe the same air may not necessarily be true in the South Bronx. We think it's the same air, but it's not really the same air, Dr. Strelnick said.