

# Steadier Traffic Flow Improves Health of Local Infants, Researchers Say

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Research suggests stop-and-go traffic poses greater health risks than flowing traffic.

(PhysOrg.com) -- The creation of E-ZPass lanes over the past 15 years has significantly improved the health of newborn babies living near highways in the Northeast, according to a Columbia study. The researchers found that reductions in traffic congestion generated by E-ZPass lanes reduced premature birthrates by 10.8 percent and low birth weight by 11.8 percent among infants born within 2 kilometers of toll plazas. The net effect has led to hundreds of millions of dollars in saved medical costs.

The study, published last month as a working paper for the National Bureau of Economic Research, underscores the health risks of

automobile emissions. “A lot of people who live by busy roads suspect it might be bad for them, and this study confirms it,” says lead author Janet Currie, the Sami Mnaymneh Professor of Economics, noting that some of the busiest interstate systems in the country are surrounded by residential housing.

For pregnant women, exposure to carbon monoxide reduces the availability of oxygen to be transported to the fetus. There is increasing evidence that poor fetal health affects long-term outcomes. [Low birth weight](#), for example, has been linked to future health problems and lower education.

Currie and co-author Reed Walker, a graduate student in economics, studied infants born to mothers living near toll plazas before and after the creation of nearby E-ZPass lanes, comparing their birth weights and prematurity rates. The researchers analyzed U.S. Bureau of Transportation data from 1994 to through 2003, when several E-ZPass lanes were opened in New York, New Jersey and Pennsylvania, and health data from Vital Statistics Natality records. The authors also measured the health of infants born near busy roadways but away from toll plazas, as a comparison group. They also controlled for race, education and smoking habits of mothers.

The study supports previous findings that stop-and-go traffic is more harmful than flowing traffic. “Internal combustion engines have optimal fuel-burning speeds, and much emissions pollution is generated when cars accelerate or decelerate,” says Currie.

The study also has significant economic implications. A recent Institute of Medicine report on premature birth estimated that the societal cost was \$51,600 per infant. Currie and Walker found that there was a drop in premature births and low birth weights among 138,315 infants born near E-ZPass toll plazas during one three-year period; they therefore

posit that a 10.8 percent reduction in prematurity saved approximately \$77 million in medical costs during that period.

Currie explains that examining fetal health is an ideal way to study pollution: adults have been exposed to numerous toxins over the course of their lifetimes, which could confuse the results of controlled studies.

Currie's previous work has helped shape policy for federal children's programs, like the State Children's [Health](#) Insurance Program and Head Start. She suggests that more steps could be taken by policymakers to eliminate stop-and-go traffic in residential neighborhoods.

Provided by The Earth Institute at Columbia University ([news](#) : [web](#))

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