

NYC pedestrian traffic makes for safer street crossings: Google street view study

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Researchers at Columbia University's Mailman School of Public Health have developed a novel method to assess how the streetscape affects the chances pedestrians will be injured by drivers. Using Google Street View the researchers assessed the pedestrian environment at more than 500 New York City street intersections. Findings show that using Google's images instead of visiting collision sites in person resulted in substantial efficiency gains in conducting research on pedestrian safety. The study is published online in the *American Journal of Public Health*.

"Using Google Street View to assess intersection characteristics works as well as, if not better than visiting sites in person, at much lower cost and with fewer logistical headaches," said Stephen Mooney, a graduate student in Epidemiology and co-author. Comparing environment characteristics to the frequency of injury-causing collisions captured by Google Street View over five years showed that intersections with more pedestrians had lower risk of injury per pedestrian. The researchers also found that more injuries occurred in contexts with visual distractions such as billboards and [bus stops](#).

"The Google Street View approach to conduct 'virtual' neighborhood inspections does away with the need for field teams to conduct in-person audits," said Andrew Rundle, DrPH, associate professor of Epidemiology, who led the research team. "To our knowledge, virtual audits have not previously been used to assess risk factors for pedestrian injury."

An earlier in-person assessment of 850 intersections in California and Washington State required site visits that would have taken one person three years to complete. Rundle and Mooney estimate their method would have taken one person about a month to complete data collection for the same 850 intersections.

Consistent with prior research incorporating site visits, the new study found that, compared to other intersections, injury incidence per pedestrian was lower at intersections with heavy pedestrian traffic. Marked crosswalks (80-percent increase), pedestrian signals (156-percent increase), bus stops (120-percent increase), and billboards (42 percent increase) were associated with increased risk. "Our finding that marked crosswalks are associated with elevated risk is concordant with previous findings, though the reasons for this somewhat counterintuitive association are not well established. " said Mooney.

The researchers point out that investments in pedestrian safety infrastructure, such as improving lighting, adding speed bumps, or maintaining pavement markings can substantially improve pedestrian safety and may be a particularly cost-effective way to improve population health. Recently, several major cities, including New York City, have developed high-profile plans to improve [pedestrian safety](#) city-wide. New York alone has installed 1,500 pedestrian signals and re-engineered dozens of roads and intersections.

"The large burden of injury coupled with the sparse empirical literature justifies more research into risk factors for pedestrian injury and into the effectiveness of interventions," noted Rundle. "We are looking to undertake additional research applying this virtual neighborhood inspection methodology to study [pedestrian](#) injury risk in other cities. "

Provided by Columbia University's Mailman School of Public Health

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