

# Best urban design for reducing road injuries

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City design combining more public transport and rail networks with smaller, low speed blocks are the best to reduce road transport injuries, according to a new global study co-authored by researchers at Columbia University Mailman School of Public Health. The findings are published in *The Lancet Planetary Health*.

The research identified the best and worst performing city designs with respect to [road](#) injuries. Researchers from Australia, Spain in addition to the United States compared maps of almost 1700 cities across the world with [injury](#) data to understand urban design factors that contribute to the most road injuries.

Cities were categorized into nine unique design types ranging from locations with highly organized road and rail network ('High Transit', 'Motor City' and 'Intense' types) to areas with almost no [public transport](#) and sparse urban design ('Sparse' and 'Informal' types).

Lead researcher Dr. Jason Thompson of the Melbourne School of Design said the research aims to highlight the importance of urban design and planning as a key factor in reducing transport related injuries across the world.

"The floor plans of our cities matter enormously for the health of residents. Designs that prioritize [motor vehicles](#) have huge costs, including more injuries and deaths due to crashes, whereas intelligent designs that promote public transportation can very substantially reduce this burden," said Christopher N. Morrison, Ph.D., assistant professor of epidemiology at Columbia Mailman School of Public Health.

The study found 'High Transit' cities with strong rail networks like Barcelona, Durban, Jerusalem and Toronto had the lowest rates of road injuries compared to 'Informal' type cities across India, China and Africa where poor urban design contributed to twice the injury rates.

"If reducing the road toll is your ultimate goal, it is better to invest in safer alternative transport options rather than continuing to focus on car-based safety interventions," Dr. Thompson said.

Australian cities like Perth, Adelaide, Newcastle and Melbourne fell

under the 'Motor City' category with extensive road networks and suburbs designed around the needs of drivers that create car dependency.

"Australia has successfully reduced road injuries through enforcement and public safety education in the past but a shift away from motor vehicles toward more compact city design and investment in safe, efficient public transport is key to reducing future road injury rates," Dr. Thompson noted.

The study also found that the income of a country did not necessarily relate to road injury rates. High-income countries like Saudi Arabia, the United States and United Arab Emirates were still experiencing high road injury rates due to [city](#) designs that encourage motor vehicle use.

The research was conducted at the University of Melbourne's Transport, Health and Urban Design Research Hub in collaboration with Barcelona Institute of Global Health and Columbia University's Mailman School of Public Health.

**More information:** Jason Thompson et al, A global analysis of urban design types and road transport injury: an image processing study, *The Lancet Planetary Health* (2020). [DOI: 10.1016/S2542-5196\(19\)30263-3](https://doi.org/10.1016/S2542-5196(19)30263-3)

Provided by Columbia University's Mailman School of Public Health

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