(Abstract)

Changing the built environment is a sound, but often underutilized approach to injury control. The authors reviewed the literature and conducted a meta-analysis to synthesize the evidence on the association of roadway characteristics with risk of pediatric pedestrian injury. To synthesize the data, they converted results to odds ratios based on direct results or abstracted outcomes and used Bayesian meta-analytic approaches by modeling outcomes as the logit of a normally distributed set of outcomes with vague prior distributions for the central measure of effect and its variance. On the basis of 10 studies of roadway features restricted exclusively to pediatric populations, the synthesized effect estimate for the association of roadway characteristics with pedestrian injury risk was 2.5 (95% credible interval: 1.8, 3.2). The probability of a new study showing an association between the built roadway and pediatric pedestrian injury was nearly 100%.

The authors concluded that the built environment is directly related to the risk of pedestrian injury. This review and meta-analysis suggests that even modest interventions to the built roadway environment may result in meaningful reductions in the risk of pediatric pedestrian injury.