

**Title:** BICYCLE INJURIES: A MATTER OF MECHANISM AND AGE

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**Abstract:**

Bicycle riding is a popular form of recreation with positive health and environmental effects. These road users are vulnerable to serious injuries, especially when motor vehicles are involved. The goal of this study was to characterize cyclist-related injuries according to motor vehicle involvement for adults versus children.

A retrospective study was carried out using data from 11 trauma centers in the Israeli National Trauma Registry (2001-2007). Injuries were classified according to whether a motor vehicle was involved, and differences in injury characteristics were assessed for adults (18+ years) versus children (1-17 years).

A total of 5529 patients were hospitalized for bicycle injuries, of whom 1765 were adults and 3764 were children. Thirty percent (n=1662) of all bicycle injuries involved motor vehicles, and adults were 1.3 times more likely to be involved in a motor vehicle-related bicycle crash than children (95% CI 1.16-1.49). Injury characteristics and hospital resource utilization differed substantially by age group. Cyclists struck by a motor vehicle presented with more severe injuries than those not involved with motor vehicles. The interaction effect between motor vehicle involvement and age was significant for torso injuries and need for medical imaging. We found that injury characteristics, hospital resource utilization and health-related outcomes for bicycle injuries are highly dependent on patient's age and mechanism of injury. Effect modification of motor vehicle involvement by age may in part reflect physicians' attitudes toward pediatric imaging.