Association between side-impact airbag deployment and risk of injury: A matched cohort study using the CIREN and the NASS-CDS.

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Title: Association between side-impact airbag deployment and risk of injury: A matched cohort study using the CIREN and the NASS-CDS.

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Abstract

BACKGROUND: Side-impact airbags (SABs) are designed to protect the head and thorax during a side-impact motor vehicle collision (MVC). Research on the effectiveness of SAB deployment has been limited. The objective of this study was to assess the effectiveness of deployed SABs in reducing head and thoracic injuries during side-impact MVCs.

METHODS: The 2000-2009 National Automotive Sampling System-Crashworthiness Data System and the Crash Injury Research Engineering Network databases were used to evaluate front seat occupants involved in side-impact MVCs using a matched cohort study design. The risk of serious head and thoracic injuries for occupants with and without deployed SABs were compared.

RESULTS: Occupants in vehicles with a deployed SAB designed to protect the head had a 30% lower risk of head injuries with an Abbreviated Injury Scale score of 2+ (relative risk [RR], 0.70; 95% confidence interval [CI], 0.51-0.97). Regarding thoracic injury, occupants in vehicles with a deployed SAB designed to protect the torso had a risk of injury similar to that of occupants without a deployed SAB (RR, 0.99; 95% CI, 0.79-1.24), although the risk increased for occupants 50 years and older (RR, 1.27; 95% 0.84-1.93).

CONCLUSION: The results of the current suggest that although SABs protect occupants from head injury, the protective effect for thoracic injury is
limited. Future research should focus on whether the association with thoracic injury is modified by occupant seating posture.

**LEVEL OF EVIDENCE:** Prognostic study, level III.

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