Injury risks between first- and second-generation airbags in frontal motor vehicle collisions.

BACKGROUND: Airbags in vehicles manufactured after 1997 were depowered to decrease injury risks for infants/children and small adults. It is possible that compared to earlier airbags second-generation airbags provide less injury protection due to their depowered nature.

METHODS: A cohort study was conducted using 1995-2004 national data. Risk ratios (RRs) and 95% confidence intervals (CIs) compared injury risks for occupants involved in frontal collisions in vehicles wherein a first- or second-generation airbag deployed by body region and injury severity using the Abbreviated Injury Scale (AIS). Associations were adjusted for crash severity, seatbelt use, seat position, occupant location, and vehicle curb weight.

RESULTS: For upper extremity injuries reduced RRs were observed for AIS 1 or greater (RR=0.76, CI 0.67-0.86), AIS 2 or greater (RR=0.76, CI 0.58-1.00) and AIS 3 (RR=0.81, CI 0.64-1.03). Elevated risks were observed for AIS 5 thoracic injuries (RR=1.46, CI 1.04-2.07) but were made null when differences in age and gender were adjusted for.

CONCLUSIONS: Vehicles equipped with first- and second-generation airbags appear to offer similar protection for front-seated occupants. The observed decreased risks for upper extremity injury and increased risks for severe thoracic injuries warrant further attention.