

## **Survival in Fatal Road Crashes: Body Mass Index, Gender, and Safety Belt Use**

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*Traffic Injury Prevention*, 2010, vol. 11, pp. 66-68

### **Abstract**

**Background:** This study evaluated the associations of body mass index (BMI), gender, and use of safety belts with the survival of drivers involved in fatal road crashes.

**Method:** The census data of all U.S. fatal crashes that did not involve pedestrians, bicyclists, or motorcyclists were examined for an 11-year period.

**Results:** If involved in a crash with one or more fatalities, the odds of female drivers being among the fatalities are 1.28 times higher than those of male drivers, and the odds of unbelted drivers being among the fatalities are 5.43 times higher than those of belted drivers. The relationship of survivability to BMI depends on the gender and safety belt use of the driver.

**Conclusions:** For male drivers, increased BMI appears beneficial when safety belts are used but detrimental when not used. For belted female drivers, normal BMI is associated with the lowest odds of being killed, and both increased and decreased BMIs increase the odds. For unbelted female drivers, no reliable trends were present among the BMI categories.

**Keywords:** Fatal road crashes; Body mass index; Gender; Safety belt use