Using Airbags Without Seat Belts Increases Risk of Spinal Cord Injury

The National Safety Council reports that significant cervical spine injuries can result from car crashes occurring at speeds as low as 5 miles an hour and that result in little or no damage to the car itself. According to a recent study conducted by the University of Pittsburgh, the risk of injury increases when airbags are deployed during a crash and the driver and passengers aren’t wearing seat belts.

The cervical spine is the seven vertebrae of the spinal cord that comprise the neck. It can be damaged when it is compressed against the shoulders during a collision or when the head is violently jerked either backwards or forwards, causing injuries to the muscles and ligaments of the neck. The resulting neck sprain is commonly referred to as whiplash.

The research team, lead by Dr. William F. Donaldson III, used data gathered from a Pennsylvania trauma database to identify crashes resulting in spinal cord injuries from 1990 to 2002. They examined approximately 12,700 spinal injury patient records and of these, 5,500 were identified as either drivers or passengers who experienced fractures of the cervical spine.

After studying the cervical spine injury records, researchers found that drivers who were not wearing a seatbelt had a 54 percent rate of cervical spine fractures. However, drivers who used both an airbag and seatbelt had only a 42 percent rate of injury. After adjusting for other factors, the relative risk of cervical spine fracture was 70 percent higher for drivers using an airbag alone compared to drivers who used an airbag and seat belt.

The risk of cervical fracture was approximately seven times higher for passengers who used only an airbag. For both drivers and passengers, men were more likely than women to be injured when using an airbag alone.

Another important discovery the researchers made was that drivers and passengers who used an airbag alone were more severely injured than those who used both. They also spent more time in the intensive care unit and more total time in the hospital.

The results of the study indicate that drivers and passengers who use airbags without seatbelts have a higher rate of cervical spine fractures and have more severe injuries, including injuries to the chest, abdomen, and head. Dr. Donaldson and his team concluded that using a seatbelt with an airbag and maintaining at least 10 inches between the steering column and the sternum may decrease the severity of injuries in general, in addition to reducing the instances of airbag induced cervical spine injuries.