

Traffic Safety Facts

Crash • Stats



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A Brief Statistical Summary

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Not-in-Traffic Surveillance 2007 - Highlights

The Not-in-Traffic Surveillance (NiTS) system is a virtual data collection system designed to provide counts and details regarding fatalities and injuries that occur in nontraffic crashes and in non-crash incidents. The NiTS 2007 system produced an overall annual estimate of 1,747 fatalities and 841,000 injuries in nontraffic crashes and noncrash incidents. The NiTS 2007 system provided information about an estimated 1,159 fatalities and 98,000 injuries that occurred in nontraffic crashes such as single-vehicle crashes on private roads, collisions with pedestrians on driveways, and two-vehicle crashes in parking facilities. The NiTS 2007 system also provided information about an annual average of 588 fatalities and 743,000 injuries in noncrash incidents involving passenger vehicle occupants or otherwise involving passenger vehicles. More than half of the noncrash fatalities occurred when a vehicle fell on a person who was under it or from unintentional carbon monoxide poisoning. The most common types of noncrash injuries seen in emergency departments were injuries while entering or exiting a vehicle (estimated 164,000 per year), injuries from closing doors (estimated 148,000 per year) and injuries from over-exertion such as while unloading cargo or pushing a disabled vehicle (estimated 88,000 per year).

Data regarding fatalities and injuries that occur in nontraffic crashes and in noncrash incidents have not routinely been collected by the National Highway Traffic Safety Administration (NHTSA). Congress required NHTSA to begin collecting and maintaining information about fatalities and injuries in nontraffic and noncrash incidents in Public Law Number 109-59, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and in Public Law Number 110-189, the Cameron Gulbransen Kids Transportation Safety Act of 2007 (K.T. Safety Act). NHTSA designed and implemented the Not-in-Traffic Surveillance system to fulfill the requirements of SAFETEA-LU and the K.T. Safety Act. NHTSA considered several methods for collecting information about nontraffic crashes and noncrash incidents including police reports, trauma registries and hospital records, insurance company data, and newspaper stories. The assessment indicated that the most appropriate source of data depended upon whether the event was a nontraffic crash or noncrash incident and whether it was a fatality or nonfatal injury. Therefore, the NiTS system was developed as a virtual system comprised of four major components. One component is a database of fatalities and injuries in nontraffic crashes based predominantly on police reports. A second component is a database of noncrash fatalities based upon death certificate information. The third component is a database of noncrash injuries based upon a nationally representative sample of emergency department records. The fourth component, which is not covered in this issue of Crash•Stats, is a collection of detailed investigations of particular types of incidents conducted by NHTSA's Special Crash Investigations (SCI) program. (For more information about the NiTS SCI

cases, please see www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.m.3525b237b7215dd24ec86e10dba046a0/.)

Fatalities and Injuries in Nontraffic Crashes

The nontraffic crash fatality and injury component was based predominantly upon police reports received by NHTSA during 2007 through our existing crash data collection infrastructure. However, NHTSA is aware that NiTS does not have a complete count of all nontraffic crash fatalities from all States or of all non-traffic crash injuries from our statistical sample of police jurisdictions. Because of these limitations, NHTSA derived adjustment factors to account for the incompleteness of the NiTS system. The adjustment factor for nontraffic crash fatalities accounts for the difference between the expected number of fatalities, based upon death certificates, and the number of fatalities received in NiTS. For nontraffic injuries, NHTSA turned to its State Data System and used information from three States that collect information on both nontraffic and traffic injury crashes. The information from these States was then used to adjust for the difference between the expected number of nontraffic crash injuries and the number received. Table 1 summarizes the fatalities and injuries in non-traffic crashes using the adjustment factors to produce national estimates. Table 1 indicates that about half (614 of 1,159) of the nontraffic crash fatalities and about a third (34,000 of 98,000) of the nontraffic crash injuries involved nonoccupants such as pedestrians or bicyclists. Backovers, where drivers reverse into and injure or kill nonoccupants, accounted for 19 percent of the nontraffic crash fatalities and 14 percent of the injuries. Occupant fatalities in nontraffic crashes overwhelmingly occurred in single-vehicle crashes while occupant injuries were more likely to occur in multiple-vehicle crashes.

Table 1: Nontraffic Crash Fatalities and Injuries

	Fatalities	Injuries
Nonoccupant in Nontraffic Backover Crash	221	14,000
Other Nonoccupant in Nontraffic Crash	393	20,000
Occupant in Nontraffic Single-Vehicle Crash	496	29,000
Occupant in Nontraffic Multiple-Vehicle Crash	49	35,000
Total	1,159	98,000

Source: NiTS 2007

Fatalities in Noncrash Incidents

The noncrash fatality component was based upon mortality data from death certificates contained in special mortality data files obtained from the Centers for Disease Control and Prevention's National Vital Statistics System for 2003 and 2004. The narrative sections of the accidental deaths that did not involve a transport accident were searched for indication of the involvement of passenger vehicles. Deaths that occurred inside vehicles,

while exiting or falling from vehicles or where the vehicles were otherwise a factor in the deaths were assigned incident types. Table 2 summarizes the noncrash deaths by incident type. About 29 percent (168 of 588) of the noncrash fatalities involved people who were pinned or trapped under vehicles, usually while working on passenger vehicles that fell from their supports. Another 25 percent (147 of 588) of the noncrash fatalities occurred from unintentional carbon monoxide poisoning, usually involving people inside passenger vehicles that were running inside enclosed spaces. Incidents of hyperthermia, which usually involved children, accounted for an annual average of 37 fatalities. Vehicle window asphyxia, which also usually involved children, accounted for an annual average of five fatalities per year and occurred from the closing of power windows as well as from partially open (stationary) windows.

Table 2: Annual Average Noncrash Fatalities by Incident Type

Struck by Falling Vehicle	168
Carbon Monoxide Poisoning From Vehicle Exhaust	147
Fall From Vehicle	88
Vehicle Fire	57
Struck by Object	44
Hyperthermia (excessive heat)	37
Hypothermia (excessive cold)	14
Poisoning in Vehicle From Other Source	9
Exploding Tire	7
Vehicle Window Asphyxia (lack of oxygen due to mechanical strangulation)	5
Electrocution	4
Drowning	3
Closed in Trunk	3
Radiator Fluid Burns	2

Source: National Vital Statistics System special mortality file, 2003-2004

Injuries in Noncrash Incidents

The noncrash injury component was based upon emergency department records contained in the Consumer Product Safety Commission's (CPSC) National Electronic Injury Surveillance System All Injury Program (NEISS-AIP) from 2003 through 2006. Possible noncrash injuries involving passenger vehicles were assigned incident types based upon the cause of the injury, the diagnosis, a search of key words in the narrative, and (in some cases) individual review of the narratives. NEISS-AIP is a nationally representative statistical sample of emergency department visits and provides sample weights for calculating national estimates. Per CPSC's recommendation, national estimates could not be made for incidents that account for fewer than 20 cases out of the 43,000 possible cases. Table 3 highlights the 10 most common noncrash injuries involving passenger vehicles as well as several other incidents that have been the focus of past NHTSA research. Boarding (entering) or alighting (exiting) a vehicle accounted for 22 percent (164,000 of 743,000) of the injuries and occurred in three situations: falls (84,000), striking a door or door frame (36,000), and in other situations such as sprains or strains while exiting the

vehicles (44,000). Injuries from closing doors, such as doors closed on fingers or hands, accounted for 20 percent (148,000 of 743,000) of the noncrash injuries seen in emergency departments. Overexertion accounted for 12 percent (88,000 of 743,000) of the noncrash injuries and often occurred when cargo was unloaded from the backs of pickups or trunks, or while pushing disabled vehicles. Incidents involving jacks or hoists accounted for about 10,000 injuries seen in emergency departments per year and frequently occurred while repairing vehicles or changing tires. Radiator and antifreeze burns accounted for an estimated 9,000 noncrash injuries per year and often occurred while removing hot radiator caps or while repairing vehicles. Hyperthermia injuries in vehicles accounted for less than 1,000 injuries seen in emergency departments per year, but the relatively small sample size (35 of a possible 42,958 incidents) did not allow calculation of a more precise estimate. While Table 3 is not a complete list, the incident types represent 87 percent of the noncrash injuries.

Table 3: Annual Estimate of Noncrash Injuries by Incident Type

Injured by Closing Door	148,000
Overexertion	88,000
Boarding or Alighting: Falls	84,000
Struck or Struck by Other Vehicle Part (not door, hood or trunk)	74,000
Cut by Part of Vehicle	68,000
Boarding or Alighting: Other Injuries (such as strains or sprains)	44,000
Boarding or Alighting: Door Injury	36,000
Fall Against Vehicle	28,000
Fall From Vehicle (not boarding or alighting)	28,000
Struck by Other Product (usually cargo)	20,000
Radiator/Antifreeze Burns	9,000
Other Hoist/Jack Incident (not involving a tire)	8,000
Vehicle Fire Incident	3,000
Muffler/Exhaust Pipe Burns	3,000
Closing of Vehicle Window	2,000
Carbon Monoxide From Vehicle Exhaust	2,000
Hoist/Jack Incident With Tire	2,000
Tire Explosion	1,000
Battery Acid Burn	1,000
Hyperthermia in Vehicle (excessive heat)	<1,000

Source: National Electronic Injury Surveillance System All Injury Program, 2003-2006

The NiTS system provides information about fatalities and injuries in nontraffic crashes and in noncrash incidents that has not routinely been collected by NHTSA in the past. The nontraffic crash database contains information about the individual crashes and an adjustment factor for calculating national averages and is available in a Microsoft Excel file and a SAS analysis file. The noncrash fatality database and the noncrash injury database contain aggregate information about the age of the victims, the injury mechanisms, and the locations of the incidents, and the databases are available in Microsoft Excel files. Additional information about these databases can be found in the reports "NiTS 2007: Nontraffic Crash Database User's Manual," "NiTS 2007: Noncrash Fatality Database User's Manual," and "NiTS 2007: Noncrash Injury Database User's Manual." All files and documents are available through the NHTSA Web site.



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