



Toy-Related Deaths and Injuries Calendar Year 2007

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Executive Summary

In this report, the U.S. Consumer Product Safety Commission (CPSC) staff presents the latest available statistics on deaths and injuries associated with toys.

- CPSC staff has received reports of 18 toy-related deaths that occurred in 2007 among children under age 15.
- Riding toys, including non-motorized scooters, and small toy balls were associated with most of the deaths.
- Most of these deaths were associated with airway obstruction from small toys, drowning, or motor vehicle accidents during play.
- In 2007, there were an estimated 232,900 toy-related injuries, among all ages, treated in U.S. hospital emergency departments. The annual average for 2005-2007 is estimated to be 218,700 injuries.
- There was a statistically significant increasing trend observed in toy-related injury estimates from 2003 to 2007. However, the increase in estimated injuries from 2006 to 2007 was not statistically significant.
- Most of the 232,900 injuries were lacerations, contusions, and abrasions; the head and face area was the most frequently affected area.
- An estimated 170,100 (73 percent) of the injuries were among children under 15 and an estimated 80,200 (34 percent) of the injuries were among children under five years of age. The annual average for 2005-2007 among children under 15 is estimated to be 162,500 injuries, while the same three-year annual average among children under five is estimated to be 77,100 injuries.
- Among children under 15 years of age, riding toys (including non-motorized scooters) continued to be the known category of toys that was associated with the most injuries (25 percent).
- Among children under 15 years of age, 44 percent of the injuries were associated with toys that were not specifically classified.
- Data collection for future analysis is underway to facilitate the characterization of toys that are not classified and the identification of the associated hazard patterns.

For toy-related deaths and injuries, it is important to note that many of the incidents were associated with a toy but not necessarily caused by the toy.

Introduction

This memorandum provides updated summary information on toy-related deaths occurring in 2005 and 2006 as well as detailed information on toy-related deaths occurring in 2007 that were reported to the U.S. Consumer Product Safety Commission (CPSC) staff. In addition, the memorandum provides estimated emergency department treated injuries for the 2007 calendar year and provides historic injury estimates in an appendix.

Toy-Related Deaths¹

Table 1 presents toy-related fatalities among children under 15 years of age as reported to CPSC staff from 2005 to 2007. These fatalities were related to, but not necessarily caused by, toys. The data for 2005 and 2006 have been updated with new incident reports received by CPSC staff since the release of the previous memo and may not agree with the tabulations in the original memos for those years². Toys that were associated with two or more fatalities in at least one of the three years (2005-2007) are specifically listed in the rows of the table so as to highlight the toys (and the associated hazards) that have historically posed a greater danger to children. The last row of Table 1 records the number of other toys with a single reported fatality in the given year; this allows for the summing of the rows to produce the total number of reported fatalities for a given year.

Table 1: Toy-Related Deaths among Children under 15 by Type of Toy Involved; 2005 - 2007

Type of Toy (Hazard)	2005	2006	2007
TOTAL	26	27	18
Rubber balls/beads (airway obstruction, aspiration)	9	4	4
Tricycles (drowning, motor vehicle involvement, fall)	4	4	5
Non-motorized scooters (motor vehicle involvement)	3	3	2
Balloons (airway obstruction, aspiration, strangulation from ribbon)	2	3	2
Stuffed toys (suffocation)		2	1
Other balls (blunt force, motor vehicle involvement, drowning when retrieving toy)		2	
Toy nails/pegs (airway obstruction)		3	
Powered riding toys (motor vehicle involvement, drowning, strangulation from clothing articles getting caught in toy)	1	3	1
Other toys with a single reported fatality in the year	7	3	3

Source: In-Depth Investigations (INDP), Injury and Potential Injury Incidents (IPII), Death Certificates (DTHS), and the National Electronic Injury Surveillance System (NEISS) from 1/1/2007 to 12/31/2007; CPSC. Data was extracted in Aug, 2008.

Table 2 characterizes the number of reported fatalities in 2007 that were received by CPSC staff. The toy types and associated hazards involved in these reported fatalities are presented in descending order of the frequency of reports. There are three toys, each associated with a single reported death, which were classified as "Other toys" in the last row of Table 1. The other two toys, also associated with a single reported death each, are listed in other rows of Table 1 since they were also involved with multiple deaths in 2006.

¹ These fatalities do not represent a sample of known probability of selection. They may not include all the toy-related deaths that occurred during the time period, in part because at the time of data extraction, death certificate reporting was 99%, 85%, and 35% complete for 2005, 2006, and 2007, respectively.

² J. McDonald, "Toy-Related Deaths and Injuries, Calendar Year 2005", CPSC, October 2006.
R. Chowdhury, "Toy-Related Deaths and Injuries, Calendar Year 2006", CPSC, December, 2007.

Table 2: Reported Toy-Related Deaths among Children under 15 in Calendar Year 2007

Type of Toy	Deaths
TOTAL	18
Tricycles (1 motor vehicle involvement, 1 fall, 3 drowning)	5
Rubber balls (airway obstruction)	4
Non-motorized scooters (motor vehicle involvement)	2
Balloons (airway obstruction)	2
Powered riding toys: toy four-wheeler (drowning)	1
Stuffed toys (suffocation)	1
Inflatable water toy (drowning)	1
Rubber dart (aspiration)	1
Toy boat (drowning)	1

Source: INDP, IPII, DTHS, and NEISS from 1/1/2007 to 12/31/2007; CPSC. Data was extracted in Aug, 2008.

Victims of the 18 fatal incidents in 2007 ranged in age from six months to nine years. Fourteen of the victims were males. Some of the scenario specific details in these fatalities are discussed below.

Tricycles

There were five fatalities involving tricycles. An 18 month old male, a two year old male, and a three year old male all fell into their respective family's swimming pool while riding their tricycles and drowned. One three year old male is reported to have fallen from his tricycle and died of head injuries. Another three year old male was struck and killed by a motor vehicle while he was riding his tricycle.

Rubber Balls

Four children died from airway obstruction from toy balls. Two males, aged 17 months and six months, and two females, both two years old, choked on plastic or rubber balls placed in the mouth.

Non-Motorized Scooters

Two children, a seven year old male and a nine year old male, died when hit by an automobile as they were riding on non-motorized scooters.

Balloons

Two deaths resulted from upper airway obstruction caused by un-inflated balloons. One child was an eight month old female and the other was a five year old male.

Powered Riding Toys

There was one fatality involving a powered riding toy. A three year old boy was riding a battery-powered toy four-wheeler and fell into a swimming pool. He died a few days later from complications of asphyxia due to near-drowning.

Stuffed Toys

A six month old boy fell off of a bed onto a stuffed toy and suffocated to death.

Inflatable Water Toy

A seven year old girl drowned when an inflatable toy teeter-totter she and her brother were playing on was blown across a lake into open waters by extremely high winds.

Rubber Dart

A nine year old boy died from aspirating a rubber dart. He may have been chewing on the projectile rubber suction dart from a toy gun and inadvertently swallowed it. It got lodged in his right bronchus.

Toy Boat

A three year old male was found submerged in an in-ground pool; the child was reported to have been playing with a toy boat at the side of the pool. He died of asphyxia due to drowning.

Estimated Toy-Related Injuries³

In 2007 there were an estimated 232,900 toy-related injuries treated in U.S. hospital emergency departments. These injuries were related to, but not necessarily caused by, toys. The estimated injuries increased from 2006 to 2007 but the increase was not statistically significant (p-value = 0.1792). However, there was a statistically significant increasing trend observed in the injury estimates from 2003-2007 (p-value = 0.0404). These estimates are presented in Table 3. For more historical data, see the attached Appendix.

Table 3: Toy-Related Emergency Department Treated Injury Estimates; 2003 - 2007

Calendar Year	Estimated Injuries		
	All Ages	Under 15	Under 5
2003	206,500	155,400	71,200
2004	210,300	161,100	72,800
2005	202,300	152,400	72,800
2006	220,500	165,100	78,400
2007	232,900	170,100	80,200
2005-2007 Annual Average	218,600	162,500	77,100

Source: NEISS, CPSC. Estimates rounded to nearest 100.

Seventy-three percent (170,100) of the injuries for 2007 were to children under 15 years of age and 34 percent (80,200) were to children under five. Overall, males were involved in 58 percent of the toy-related injury incidents. Most of the victims (97 percent) were treated and released from the hospital.

³ The source of these data is the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System (NEISS), which is based on a statistical sample of hospital emergency department treated injuries.

Forty-five percent of the total estimated emergency department treated injuries (103,700) occurred to the head and face area, which includes head, face, eyeball, mouth, and ear. Arms, from shoulder to finger, accounted for 25 percent of the injuries (57,800), while the leg and foot area accounted for 18 percent (42,700). The remaining 12 percent of the injuries (28,700) were distributed across other body parts or the body part was not reported. The individual body parts having the most estimated injuries overall were the face (45,900) and the head (28,900). Among the most frequent diagnoses, 27 percent of the total estimated emergency department injuries were diagnosed to be lacerations and 20 percent were contusions / abrasions. Fractures and sprains / strains each accounted for 13 percent of the injuries. The remaining 27 percent of the injuries were characterized by a host of other diagnoses such as foreign body, internal injury, ingestion, dislocation, concussion, and puncture injuries, among others.

In 2007, riding toys (including non-motorized scooters) continued to be associated with more emergency department treated injuries among all ages (59,100 or 25 percent) than any other category of toy. Non-motorized scooters were associated with 49,800 (84 percent) of the riding toy-related injuries. The toy category with the next highest number of injuries (11,000 or five percent) was flying toys.

Table 4 presents the emergency department treated injury estimates among children less than 15 years of age. Along with total injuries, the percentage of estimated injuries associated with non-motorized scooters - the single toy associated with the most injuries - is also presented. In addition, the percentage of estimated injuries associated with a product category titled "Toys, Not Elsewhere Classified" is also shown. The increase in total estimated injuries among children under 15 years from 2006 to 2007 was not statistically significant (p-value = 0.5000). There was no evidence of a significant trend from 2003 to 2007 in the total estimated injuries (p-value = 0.1068) or in the estimated injuries associated with non-motorized scooters (p-value = 0.6424) among this age group. However, the estimated injuries associated with "Toys, Not Elsewhere Classified" indicate a significantly increasing trend from 2003 through 2007 (p-value = 0.0397).

Many toys that cannot be placed under already established toy product codes are likely to be coded under the category titled "Toys, Not Elsewhere Classified". CPSC staff has undertaken a data collection effort for future analysis in order to gain further insight into the toys that are currently in this category. Analysis to date has revealed that about 50% of the toys placed in this category could be classified through existing product codes, the re-instatement of a few discontinued product codes, or the creation of a few new product codes. The remaining 50% of the toy products lack any type of specificity. The future analysis will facilitate the characterization of these unspecified toys and the hazard patterns associated with the related injuries.

**Table 4: Toy-Related Emergency Department Treated Injury Estimates
Children under 15; 2003 - 2007**

Year	Estimated Injuries Among Children under 15 Years	Estimated Injuries (%) Associated with Non-Motorized Scooters	Estimated Injuries (%) Associated with "Toys, Not Elsewhere Classified"
2003	155,400	43,900 (28%)	61,000 (39%)
2004	161,100	43,100 (27%)	67,000 (42%)
2005	152,400	33,300 (22%)	70,700 (46%)
2006	165,100	37,600 (23%)	75,600 (46%)
2007	170,100	41,900 (25%)	75,100 (44%)

Source: NEISS, CPSC. Estimates rounded to nearest 100.

Appendix

The emergency department treated injury estimates since 1993 are presented in the table and chart below. Statistically significant upward trends were observed in the data for the 15 year period 1993 - 2007 (p-value = 0.0017). This was brought about by a dramatic increase of incidents related to non-motorized scooters since 2000. This increasing trend was not statistically significant for the 10 year period 1998 - 2007 (p-value = 0.1410) but, as previously noted, was significant in the overall injury estimates over the last five years.

The increase in injuries from 1999 to 2000 was attributed primarily to a rise in injuries associated with non-motorized scooters (from 3,300 injuries in 1999 to 42,500 injuries in 2000)⁴. The same trend continued in 2001; the increase in overall injuries from 2000 to 2001 was directly correlated to the increase in injuries associated with non-motorized scooters (from 42,500 in 2000 to 99,800 in 2001)⁵. Since 2002, the proportion of injuries associated with non-motorized scooters has been decreasing. However, injuries associated with “Toys, Not Elsewhere Classified” have increased in proportion.

Toy-Related Emergency Department Treated Injury Estimates; 1993 - 2007

Calendar Year*	Estimated Injuries	95% Confidence Interval
1993	152,800	124,900 – 180,600
1994	152,700	123,600 – 181,900
1995	138,700	111,200 – 166,200
1996	130,000	104,700 – 155,300
1997	141,300	125,100 – 157,600
1998	153,400	134,400 – 172,400
1999	152,600	133,370 – 171,900
2000	191,000	161,500 – 220,500
2001	255,100	221,100 – 289,100
2002	212,400	182,900 – 242,000
2003	206,700	177,600 – 235,800
2004	210,300	179,800 – 240,700
2005	202,300	175,100 – 229,500
2006	220,500	190,300 – 250,800
2007	232,900	200,000 – 265,700

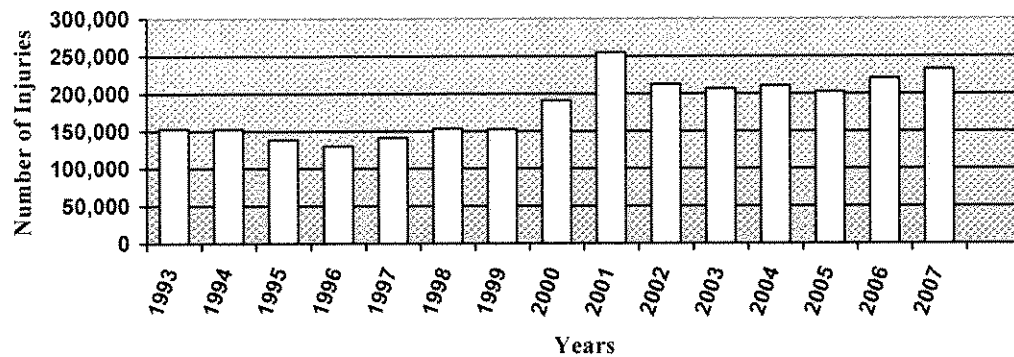
Source: NEISS, CPSC. Estimates rounded to nearest 100.

*Tabulated estimates with confidence intervals for 1993-2006 were produced in November 2007, and for 2007 in August 2008. The estimates for 1993-1995 are slightly lower than those previously reported while the estimate for 2003 is slightly higher than previously reported.

⁴ J. McDonald, “Toy-Related Deaths and Injuries, Calendar Year 2000”, CPSC, November 2001.

⁵ J. McDonald, “Toy-Related Deaths and Injuries, Calendar Year 2001”, CPSC, October 2002.

Toy-Related Emergency Department Treated Injury Estimates 1993 - 2007



Source: NEISS, CPSC. Estimates rounded to nearest 100.