



Toy-Related Deaths and Injuries Calendar Year 2016

Yongling Tu
Division of Hazard Analysis
Directorate for Epidemiology
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814
October 2017

CPSA 6(b)(1) CLEARED for PUBLIC

✓ NO MFRS/PRVTBLRS OR
PRODUCTS IDENTIFIED

EXCEPTED BY: PETITION
RULEMAKING ADMIN. PRCDG

WITH PORTIONS REMOVED: _____

Am
10/24/17

This analysis was prepared by CPSC staff. It has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.

CPSC Hotline: 1-800-638-CPSC (2772) CPSC's website: <http://www.cpsc.gov>

Table of Contents

Executive Summary	3
Introduction	4
Toy-Related Deaths	4
Table 1: Reported Toy-Related Deaths Among Children Younger than 15 Years of Age, 2014–2016	5
Table 2: Reported Toy-Related Deaths Among Children Younger than 15 Years of Age, 2016	6
Estimated Toy-Related Injuries	8
Table 3: Annual Toy-Related Emergency Department-Treated Injury Estimates, 2012–2016	8
Figure 1: Distribution of Toy-Related Injury Estimates by Body Regions Injured for All Ages, 2016	9
Figure 2: Distribution of Toy-Related Injury Estimates by Type of Injuries for All Ages, 2016	9
Table 4: Toy Categories Associated with the Largest Number of Estimated Emergency Department-Treated Injuries for Different Age Groups, 2016	10
Table 5: Nonmotorized Scooter-Related Emergency Department-Treated Injury Estimates for Children of Different Age Groups, 2012–2016	11
Table 6: Annual Emergency Department-Treated Injury Estimates Associated with Product Code, “Toys, Not Elsewhere Classified,” for Different Age Groups, 2012–2016	12
Table 7: Annual Emergency Department-Treated Injury Estimates Associated with Product Code, “Toys, Not Specified,” for Different Age Groups, 2012–2016	13
Table 8: Toy-Related Injury Estimates Adjusted for the Correction Factor for Different Age Groups and Toy Categories Associated with the Most Adjusted Estimated Injuries, 2016	14
Appendix A: Estimated Number of Toy-Related Injuries from 2002 through 2016	15
Table 9: Toy-Related Emergency Department-Treated Injury Estimates for Different Age Groups, 2002–2016	16
Figure 3: Toy-Related Emergency Department-Treated Injury Estimates for Different Age Groups, 2002–2016	17
Appendix B: NEISS Product Codes for Toys as of January 1, 2016	18

Executive Summary

In this report, U.S. Consumer Product Safety Commission (CPSC) staff presents the latest available statistics on deaths and emergency department-treated injuries associated with toys. For toy-related deaths and injuries, it is important to note that although a toy was associated with many of the incidents, the toy was not necessarily the cause of the death or injury. Additionally, due to delays in death certificate reporting, fatality information for 2014, 2015, and 2016 is not yet complete.

Reported Fatalities in Calendar Year 2016

- CPSC staff received seven reports of toy-related deaths that occurred in the 2016 calendar year among children younger than 15 years old. All seven victims were younger than 12 years of age.
- Riding toys were associated with three (43 percent) of the seven reported deaths in 2016. All of the riding toy deaths were due to motor vehicle involvement.

Emergency Department-Treated Injuries in Calendar Year 2016^{1,2}

- In 2016, there were an estimated 240,000 toy-related injuries treated in U.S. hospital emergency departments.
- There is not a statistically significant trend in the estimated number of toy-related injuries from 2012 to 2016, for all individuals, children younger than 15 years, children 12 years of age or younger, or children younger than 5 years.
- Thirty-nine percent of the estimated emergency department-treated injuries were classified as lacerations, contusions, or abrasions. Forty-five percent of the estimated injuries were to the head and face area, the most commonly affected area of the body.
- Males accounted for 139,000 (58 percent) of the estimated toy-related injuries in 2016.
- Ninety-six percent of the emergency department-treated, toy-related injury victims were treated and released.
- Of the 240,000 estimated toy-related, emergency department-treated injuries, an estimated 174,100 (73 percent) happened to children younger than 15 years of age; an estimated 166,300 (69 percent) occurred to children 12 years of age or younger; an estimated 85,200 (35 percent) happened to children younger than 5 years of age.
- For children 12 years of age or younger and children younger than 15 years old, nonmotorized scooters continued to be the category of toys associated with the most injuries (22 percent and 23 percent, respectively) in 2016. However, there is a statistically significant decreasing trend in the estimated number of injuries associated with nonmotorized scooters from 2012 to 2016 for children in these two age groups.

¹ To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

² The percentages are calculated from the actual injury estimates.

Introduction

This report provides updated summary information on toy-related fatalities for the years 2014 and 2015, and it gives detailed information on toy-related fatalities for 2016. These fatality counts are based on reports obtained by CPSC staff from the CPSC Injury and Potential Injury Incident file (IPII), Death Certificate File (DTHS), In-Depth Investigations (INDP), and the National Electronic Injury Surveillance System (NEISS). In addition, this report presents the estimated emergency department-treated injuries associated with toys for the 2016 calendar year and the injury estimates from 2012 to 2016, based on the NEISS. In Appendix A, historical estimated toy-related emergency department-treated injuries from 2002 to 2016 are given, along with their 95 percent confidence intervals. Appendix B lists the NEISS product codes used to generate this report.

Toy-Related Deaths³

Fatalities of children younger than 15 years of age from 2014 to 2016, as reported to CPSC staff, are summarized in Table 1. The reported death totals for each year are listed at the top of the table, with each year's reported deaths detailed by the type of toy with a parenthetical description of the hazard in the rows below. Due to delays in death certificate reporting, fatality information for 2014, 2015, and 2016 is not yet complete. The data from 2015 has been updated based on one new incident report received by CPSC staff during 2016. Thus, the data differ from the reported fatality tabulations detailed in the previous memorandum for the calendar year 2015.⁴ The one fatality that occurred in 2015, but was reported in 2016, involved a 2-year-old girl, and the toy involved was a marble. Toy types that are associated with more than one fatality between 2014 and 2016 are listed in Table 1 to highlight the toys (and associated hazards). For other types of toys associated with only one fatality across the given years, the information is summarized in the final row of Table 1. Fatalities are included where a toy was present and, based on statements by investigators, police, family members, or medical examiners, may have played a contributing role in the death.

³ These fatalities do not represent a sample of known probability of selection. They may not include all of the toy-related deaths that occurred during the time period, in part, because at the time of data extraction, death certificate reporting was 96 percent, 88 percent, and 40 percent complete for 2014, 2015, and 2016, respectively.

⁴ Y. Tu, "Toy-Related Deaths and Injuries, Calendar Year 2015," CPSC, November 2016.

**Table 1: Reported Toy-Related Deaths Among Children Younger Than 15 Years of Age
2014–2016⁵**

Type of Toy (Hazard)	2014		2015 ⁶		2016	
	Children 12 Years of Age or Younger	Children 13 and 14 Years of Age	Children 12 Years of Age or Younger	Children 13 and 14 Years of Age	Children 12 Years of Age or Younger	Children 13 and 14 Years of Age
TOTAL	16		12		7	
Sub Total	16	0	11	1	7	0
Nonmotorized scooters (motor vehicle involvement)	4		4			
Balloons/balloon strings (strangulation, asphyxia, choking, asphyxia/suffocation)	3		1		1	
Nonmotorized riding toys (motor vehicle involvement)	2		1		1	
Tricycles (drowning, motor vehicle involvement)	2				2	
Water guns (drowning)	1		2			
Rubber balls (airway obstruction, aspiration)	1				1	
Balls, other (drowning)			1		1	
Stuffed toys/doll/doll accessory/toy figure (hanging)	2					
Other toys with a single reported fatality in the year (airway obstruction, poisoning, asphyxiation, drowning)	1		2	1	1	

Source: INDP, IPII, DTHS, and NEISS from 1/1/2014 to 12/31/2016; CPSC. Data were extracted in August 2017.

⁵ Toy-related deaths among children 12 years of age or younger are presented to be consistent with the age definition for a children's product in the Consumer Product Safety Improvement Act of 2008 (CPSIA), 15 U.S.C. § 2052 (a)(2).

⁶ One new toy-related death was reported to CPSC staff occurring in the 2015 calendar year, increasing the number of reported deaths to 12 in 2015.

Table 2 details the fatalities associated with toys for children younger than 15 years of age in 2016 that were reported to CPSC staff. The toy types and associated hazards involved in these reported fatalities are presented in descending order of the frequency of reports. There is a toy (a water toy) in Table 2, which was associated with one death that is included in the last row of Table 1 with “other toys.” There are four other toys (*i.e.*, a balloon, a nonmotorized riding toy—wagon, a rubber ball, and a ball) that were each associated with a single death in 2016; however, because these toys were associated with other deaths in 2014 and/or 2015, they are presented in other rows of Table 1 to highlight the hazard.

As shown in Table 2, three of the seven reported fatalities (43 percent) of children younger than 15 years of age in 2016 were associated with riding toys, and the hazard was motor vehicle involvement. The riding toys involved were tricycles and a wagon.

**Table 2: Reported Toy-Related Deaths Among Children Younger Than 15 Years of Age
2016**

Type of Toys	Children 12 Years of Age or Younger ^y	Children 13 and 14 Years of Age
TOTAL	7	
Sub Total	7	0
Tricycles (motor vehicle involvement)	2	
Nonmotorized riding toy—wagon (motor vehicle involvement)	1	
Balloon (asphyxia/suffocation)	1	
Rubber ball (aspiration)	1	
Ball, other (drowning)	1	
Water toys (drowning)	1	

Source: INDP, IPII, DTHS, and NEISS from 1/1/2016 to 12/31/2016; CPSC. Data were extracted in August 2017.

^y Toy-related deaths among children 12 years of age or younger are presented to be consistent with the age definition for a children’s product in the Consumer Product Safety Improvement Act of 2008 (CPSIA), 15 U.S.C. § 2052 (a)(2).

In 2016, there were seven reported deaths related to toys involving children. Of the seven fatalities, one victim was female, and six were males. The age range for the seven reported deaths is 9 months to 9 years. The scenario-specific details of some of these incidents are described below.

Tricycles

Two boys—ages 3 years and 4 years—were struck and killed by motor vehicles while riding tricycles.

- A 3-year-old boy was riding his tricycle in the roadway with a group of children when he was struck by a truck. Medics responded to the scene and the victim was pronounced dead. The cause of death was blunt force.
- A 4-year-old boy and another boy were racing their bikes. The victim was on his tricycle coming down from a driveway at the end of a cul-de-sac. A tow truck driver had just dropped off a car at a nearby house and was rounding the corner. The tow truck driver did not see the victim and ran

him over. The accident happened just a few feet from the victim's home. The victim was pronounced dead at a hospital.

Nonmotorized Riding Toy—Wagon

A 2-year-old boy was in a wagon that was pulled by his mother along a highway. According to the state police, they were hit by a passing pickup truck when the truck driver lost control near a curve in the road. The victim and his mother were both taken to a hospital, where the victim was pronounced dead.

Balloon

An 8-year-old girl was discovered by her father with a large polyester film balloon over her head and tight around her neck in her bedroom. According to the police report, the balloon was torn open and the opening was large enough for a head to fit into. The victim's father pulled the balloon off and attempted CPR on the victim. The responding rescue personnel were unable to resuscitate the victim, and the victim was pronounced deceased at the scene. The cause of death was asphyxia by helium and suffocation with a polyester film balloon. The manner of death was accidental.

Rubber Ball

A 9-month-old baby boy choked on a 3.5 mm rubber ball and later died as a result. The victim had been playing with his two older sisters when he began to choke. The incident was unwitnessed. The responders to the scene were unable to remove the ball from the victim's airway. The victim was taken to a local emergency department where the ball was finally removed. The victim was then flown to a regional children's hospital for further treatment. The victim's condition continued to decline, and he was declared brain dead 2 days later.

Ball, Other

A 6-year-old boy was discovered unresponsive at the bottom of his apartment complex swimming pool. A ball was observed floating in the deep end of the pool as well. The victim was transported to a medical center where he was pronounced dead. According to the police and medical examiner's reports, a witness stated that he and the victim had played with the ball in the court yard and he left to answer a call just a few minutes before the incident. It is speculated that the victim had been playing with the ball, which went over the fence into the pool area, and he tried to recover it and fell into the pool.

Water Toys

A 9-year-old boy was found at the bottom of a residential in-ground swimming pool while attending a birthday party. According to the sheriff's and medical examiner's reports, the victim had been seen diving into the pool to retrieve dive toys from the bottom of the pool before the incident. CPR was started at the scene, and the victim was transported to a local hospital where he died the next day.

Estimated Toy-Related Injuries⁷

In 2016, there were an estimated 240,000 toy-related injuries for all ages treated in U.S. hospital emergency departments. These injuries were related to, but not necessarily caused by, toys. There is not a statistically significant trend in the estimated annual toy-related emergency department-treated injuries from 2012 to 2016, for all ages.^{8,9} Moreover, for children younger than 15 years of age, children 12 years of age or younger, and children younger than 5 years of age, there is not a statistically significant trend during the same time period. Table 3 displays the annual injury estimates across these four age groups from 2012 to 2016. For additional historical estimates, refer to the attached Appendix A.

**Table 3: Annual Toy-Related Emergency Department-Treated Injury Estimates
2012–2016[§]**

Calendar Year	All Ages	Younger Than 15 Years of Age	12 Years of Age or Younger [¶]	Younger Than 5 Years of Age
2012	253,500	187,300	178,000	89,300
2013	246,300	184,500	175,500	83,300
2014	240,900	179,700	170,300	84,000
2015	244,400	181,600	173,200	88,400
2016	240,000	174,100	166,300	85,200

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

[¶] Toy-related injury estimates among children 12 years of age or younger are presented to be consistent with the age definition for a children's product in the Consumer Product Safety Improvement Act of 2008 (CPSIA), 15 U.S.C. § 2052 (a)(2).

Of the 240,000 estimated emergency department-treated injuries associated with toys in 2016, 73 percent (174,100) were sustained by children younger than 15 years of age; 69 percent (166,300) were sustained by children 12 years or younger; and 35 percent (85,200) were sustained by children younger than 5 years of age. Males accounted for 58 percent (139,000) of the estimated treated injuries. Most of the victims (96 percent) were treated and released from the hospital. Three percent of the victims were admitted to the hospital or transferred to another hospital. The remaining 1 percent were held for observation or left without being seen by a doctor.

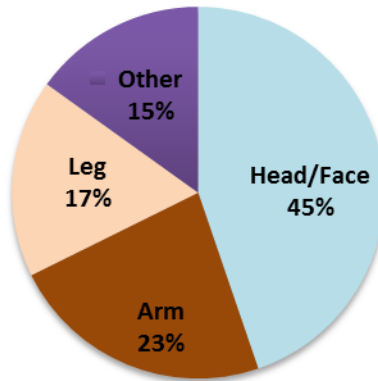
Figure 1 presents the distribution of the annual estimated toy-related, emergency department-treated injuries by the specific parts of the body injured. Forty-five percent of the estimated 240,000 injuries in 2016 (107,400), occurred to the head and face area (head, face, eye, mouth, and ear). The arm, from the shoulder to finger, accounted for 23 percent of the injuries (55,100). The leg (upper leg, lower leg, knee, ankle, foot, and toes) accounted for 17 percent (41,300). The remaining 15 percent of injuries were to other parts of the body not reported above. The individual body parts with the most estimated injuries overall were the face (42,100) and the head (34,700).

⁷ The source of these data is NEISS, which is based on a statistical sample of hospital emergency department-treated injuries. For a description of which cases are included in NEISS, how they're coded, and an alphabetical listing of products with current product codes, please see the NEISS Coding Manual at: <https://www.cpsc.gov/s3fs-public/2017NEISSCodingManualCPSCOnlyNontrauma.pdf>.

⁸ T. Schroeder, "Trend Analysis of NEISS Data," CPSC, 2000.

⁹ Throughout this report, a change (trend) in estimated injuries over the given years is determined to be statistically significant where the p-value for the statistic that tests for trend is less than 0.05.

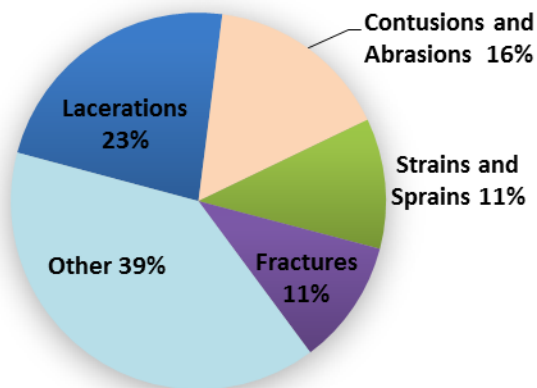
Figure 1: Distribution of Toy-Related Injury Estimates by Body Regions Injured for All Ages
2016
 (Total=240,000)



Source: NEISS, U.S. Consumer Product Safety Commission.

Figure 2 shows the distribution of the annual estimated toy-related emergency department-treated injuries by type of injury. In 2016, 23 percent of the estimated emergency department-treated injuries were diagnosed as lacerations, while an estimated 16 percent were diagnosed as contusions/abrasions. Fractures represented an estimated 11 percent of injuries, and strains/sprains also represented an estimated 11 percent. The remaining 39 percent of estimated injuries were spread across several other diagnoses, such as: internal injury, ingestion, dislocation, concussion, and puncture injuries, among others.

Figure 2: Distribution of Toy-Related Injury Estimates by Type of Injuries for All Ages
2016
 (Total=240,000)



Source: NEISS, U.S. Consumer Product Safety Commission.

In 2016, riding toys continued to be associated with more emergency department-treated injuries for all ages than any other category of toy.¹⁰ Riding toys were associated with 65,000 (27 percent) of the estimated injuries. Nonmotorized scooters accounted for 74 percent of the estimated injuries related to riding toys for all ages. As shown in Table 4, the top three specifically identified toys that were associated with the most estimated injuries for all ages in 2016 were: nonmotorized scooters (48,000, or 20 percent); toy balls (22,700, or 9 percent); and toy vehicles (15,000, or 6 percent).

**Table 4: Toy Categories Associated with the Largest Number of Estimated Emergency Department-Treated Injuries for Different Age Groups
2016**

Toy Category	Estimated Injuries (%)			
	All Ages	Younger Than 15 Years of Age	12 Years of Age or Younger [‡]	Younger Than 5 Years of Age
Nonmotorized Scooters	48,000 (20)	39,800 (23)	36,600 (22)	5,700 (7)
Toys, Not Specified	57,900 (24)	36,000 (21)	35,900 (22)	27,000 (32)
Toy Balls	22,700 (9)	16,600 (10)	15,000 (9)	5,300 (6)
Toy Vehicles	15,000 (6)	9,700 (6)	9,500 (6)	6,800 (8)

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[‡] Toy-related injury estimates among children 12 years of age or younger are presented to be consistent with the age definition for a children's product in the Consumer Product Safety Improvement Act of 2008 (CPSIA), 15 U.S.C. § 2052 (a)(2).

Patterns for children younger than 15 years of age and for children 12 years of age or younger in 2016 were generally similar to those for all individuals.

For children younger than 15 years of age, riding toys, with 55,400 injuries (32 percent), were also associated with more estimated injuries than any other category of toy. Nonmotorized scooters accounted for 72 percent of the estimated injuries related to riding toys. Table 4 shows that the top three specifically identified toys associated with the most estimated injuries for children younger than 15 years of age were: nonmotorized scooters (39,800, or 23 percent); toy balls (16,600, or 10 percent); and toy vehicles (9,700, or 6 percent).

For children 12 years of age or younger, riding toys, with 52,100 estimated injuries (31 percent), were associated with a larger number of estimated injuries than any other category of toy as well. Nonmotorized scooters accounted for 70 percent of the estimated injuries related to riding toys. Table 4 displays that the top three specifically identified toys associated with the most estimated injuries for children 12 years of age or younger were: nonmotorized scooters (36,600, or 22 percent); toy balls (15,000, or 9 percent); and toy vehicles (9,500, or 6 percent).

For children younger than 5 years of age, riding toys, with 17,100 estimated injuries (20 percent), were also associated with more injuries than any other specified category of toy in 2016. However, nonmotorized scooters accounted for only 33 percent of the riding toy-related injuries. As displayed in

¹⁰ Riding toys include these toy products: nonmotorized scooters; tricycles; unpowered nonwheeled riding toys; children's wagons; powered riding toys; unpowered wheeled riding toys; and unspecified riding toys (excluding bicycles and tricycles).

Table 4, the top three specifically identified toys associated with the most estimated injuries for children younger than 5 years of age in 2015 were: toy vehicles (6,800, or 8 percent); nonmotorized scooters (5,700, or 7 percent); and toy balls (5,300, or 6 percent). These data vary somewhat from what was observed for all ages, children younger than 15 years of age, and children 12 years of age or younger.

Table 5 displays the annual estimated emergency department-treated injuries associated with nonmotorized scooters from 2012 to 2016, for children younger than 15 years of age, children 12 years of age or younger, and for children younger than 5 years of age. This table also presents the injury estimates associated with all toys and the percentages of injury estimates related to nonmotorized scooters. In 2016, nonmotorized scooters continued to be the category of toys associated with the most injuries for children younger than 15 years of age and children 12 years of age or younger. However, there is a statistically significant decreasing trend in the estimated injuries related to nonmotorized scooters between 2012 and 2016 for these two age groups of children.

Table 5: Nonmotorized Scooter-Related Annual Emergency Department-Treated Injury Estimates for Children of Different Age Groups 2012–2016[§]

Calendar Year	Estimated Injuries					
	Younger Than 15 Years of Age		12 Years of Age or Younger		Younger Than 5 Years of Age	
	Injuries Associated with All Toys	Injuries (%) Associated with Nonmotorized Scooters	Injuries Associated with All Toys	Injuries (%) Associated with Nonmotorized Scooters	Injuries Associated with All Toys	Injuries (%) Associated with Nonmotorized Scooters
2012	187,300	52,400 (28)	178,000	47,500 (27)	89,300	8,300 (9)
2013	184,500	52,500 (28)	175,500	48,100 (27)	83,300	7,700 (9)
2014	179,700	47,400 (26)	170,300	42,900 (25)	84,000	7,200 (9)
2015	181,600	45,500 (25)	173,200	41,900 (24)	88,400	6,200 (7)
2016	174,100	39,800 (23)	166,300	36,600 (22)	85,200	5,700 (7)

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

Toys that are identified but that cannot be placed under already-established toy product codes are likely to be coded under the product code, “Toys, Not Elsewhere Classified.” Table 6 displays the estimated emergency department-treated injuries associated with this product code for all ages, children younger than 15 years of age, children 12 years of age or younger, and children younger than 5 years of age from 2012 to 2016. It shows that the proportions of the estimated injuries related to this product code were very similar across different age groups between 2012 and 2016. In addition, there is not a statistically significant trend in the estimated injuries associated with this product code from 2012 to 2016, in any of the four age groups presented in Table 6. Please note that the injury estimates related to

the product code, “Toys, Not Elsewhere Classified,” between 2012 and 2016, were not comparable to the estimates associated with this category of toys in 2009 or earlier.¹¹

**Table 6: Annual Emergency Department-Treated Injury Estimates Associated with Product Code, “Toys, Not Elsewhere Classified,” for Different Age Groups
2012–2016[§]**

Calendar Year	Estimated Injuries (%) Associated with “Toys, Not Elsewhere Classified”			
	All Ages	Younger Than 15 Years of Age	12 Years of Age or Younger	Younger Than 5 Years of Age
2012	6,500 (3)	5,200 (3)	4,900 (3)	2,700 (3)
2013	9,100 (4)	7,500 (4)	7,200 (4)	3,600 (4)
2014	7,600 (3)	6,200 (3)	5,800 (3)	2,800 (3)
2015	7,400 (3)	5,600 (3)	5,400 (3)	2,100 (2)
2016	7,700 (3)	6,400 (4)	6,200 (4)	2,300 (3)

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

The product code, “Toys, Not Specified,” was reinstated in 2010, to classify injuries that were associated with toys, but where the toys involved were not identified specifically in the NEISS injury narratives. Table 7 presents the annual estimated emergency department-treated injuries associated with this product code for all individuals, children younger than 15 years, children 12 years of age or younger, and children younger than 5 years from 2012 to 2016. Table 7 shows that the proportions of the estimated injuries related to this product code were very close between 2012 and 2016, for all four age groups. There is not a statistically significant trend in the estimated number of injuries associated with the product code, “Toys, Not Specified,” from 2012 to 2016, for any of the four age groups specified in Table 7.

¹¹ Y. Tu, “Toy-Related Deaths and Injuries, Calendar Year 2010,” CPSC, October 2011.

**Table 7: Annual Emergency Department-Treated Injury Estimates Associated with Product Code, “Toys, Not Specified,” for Different Age Groups
2012–2016[§]**

Calendar Year	Estimated Injuries (%) Associated with “Toys, Not Specified”			
	All Ages	Younger Than 15 Years of Age	12 Years of Age or Younger	Younger Than 5 Years of Age
2012	57,400 (23)	33,900 (18)	33,500 (19)	24,800 (28)
2013	56,200 (23)	35,400 (19)	34,800 (20)	24,000 (29)
2014	56,400 (23)	35,700 (20)	35,300 (21)	25,600 (30)
2015	58,400 (24)	38,600 (21)	38,200 (22)	28,800 (33)
2016	57,900 (24)	36,000 (21)	35,900 (22)	27,000 (32)

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

In 2010, CPSC staff conducted a special study of all injuries that were treated at the emergency departments of NEISS hospitals between July 1, 2010 and December 31, 2010, where the product involved was coded: “Toys, Not Specified.” The aim of this study was to identify the actual toys involved and to facilitate the characterization of toys with unknown classifications and the associated hazard patterns. All NEISS cases that were treated during that specific 6-month period and were associated with the product code, “Toys, Not Specified,” were assigned for telephone In-Depth Investigations. During the telephone investigations, telephone interviewers asked the injury victim (or the victim’s caregiver, if the victim was a minor) about the incident scenario, how the injury occurred, what type of toy was involved, the age of the toy, how the toy was obtained, and other questions regarding the characteristics of the toy. CPSC staff wrote a report to summarize the study design, telephone survey results, the estimating methods, and analysis results for this special study.¹²

The special study revealed that 19 percent of the estimated injuries that were associated with the product code, “Toys, Not Specified,” during the special study period, did not involve a toy. Therefore, a 0.81 correction factor was introduced to adjust the injury estimates related to this product code.¹² By using this correction factor, it is assumed that the percent of the estimated injuries that are associated with the product code, “Toys, Not Specified,” and that do not involve a toy, does not change from year to year. The validity of this assumption has not been verified. Applying this correction factor to the toy-related injury estimates in 2016, and further extrapolating the distribution of toys identified from the special study to the injury estimate associated with the product code, “Toys, Not Specified,” in 2016, the adjusted toy-related injury estimates and the toy categories that were associated with the largest number of adjusted estimated injuries in 2016 are presented in Table 8 for all ages, children younger than 15 years, children 12 years of age or younger, and children younger than 5 years.

¹² Y. Tu and S. Garland, “A NEISS Special Study, “Toys, Not Specified”: Analysis and Results,” CPSC, February 2012.

Table 8: Toy-Related Injury Estimates Adjusted for the Correction Factor for Different Age Groups and Toy Categories Associated with the Most Adjusted Estimated Injuries 2016[‡]

Toys	Adjusted Estimated Injuries (%)			
	All Ages	Younger Than 15 Years of Age	12 Years of Age or Younger	Younger Than 5 Years of Age
All Toys	229,200 (100)	167,400 (100)	159,600 (100)	80,100 (100)
Nonmotorized Scooters	48,600 (21)	40,200 (24)	37,000 (23)	6,000 (8)
Toy Vehicles	25,500 (11)	16,200 (10)	16,000 (10)	11,700 (15)
Toy Balls	23,300 (10)	17,000 (10)	15,500 (10)	5,600 (7)
Dolls, Plush Toys, and Action Figures	12,800 (6)	8,800 (5)	8,800 (6)	6,500 (8)

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are adjusted for correction factor and rounded to the nearest 100.

[‡] Building sets were associated with 9,100 (5 percent), 8,900 (6 percent), and 6,100 (8 percent) of the adjusted estimated toy-related injuries in 2016 for children younger than 15 years of age, children 12 years of age or younger, and children younger than 5 years of age, respectively.

Table 8 displays that the nonmotorized scooters, toy vehicles, and toy balls were associated with the most adjusted estimated injuries in 2016 for all individuals, children younger than 15 years of age, or children 12 years of age or younger. These three categories of toys accounted for over 40 percent of the adjusted estimated toy-related injuries for these three age groups. For children younger than 5 years of age, toy vehicles, “dolls, plush toys, and action figures,” and building sets were associated with the most adjusted estimated injuries, and they represented 30 percent¹³ of the adjusted toy-related injuries in 2016.

Notably, after applying the correction factor and extrapolating the 2010 special study results to the toy-related injury estimates in 2016, only 4 to 5 percent of the 2016 adjusted toy-related injuries were associated with the product code, “Toys, Not Elsewhere Classified,” for the four age groups specified in Table 8. As for the product code, “Toys, Not Specified,” just 2 to 4 percent of the adjusted estimated toy-related injuries in 2016 were related to this product code for the four age groups listed in Table 8. Therefore, more than 90 percent of the adjusted toy-related injuries in 2016 could be attributed to established specified toy product codes.

¹³ It may not equal to sum of the percentages presented in Table 8 due to rounding.

Appendix A

Estimated Number of Toy-Related Injuries from 2002 through 2016

Table 9 and Figure 3 display the annual emergency department-treated injury estimates associated with toys from 2002 through 2016. Statistically significant trends are observed in the data for all ages, children younger than 15 years of age, children 12 years or younger, and children younger than 5 years of age from 2002 to 2016.¹⁴

¹⁴ T. Schroeder, "Trend Analysis of NEISS Data," CPSC, 2000.

**Table 9: Toy-Related Emergency Department-Treated Injury Estimates for Different Age Groups
2002–2016[§]**

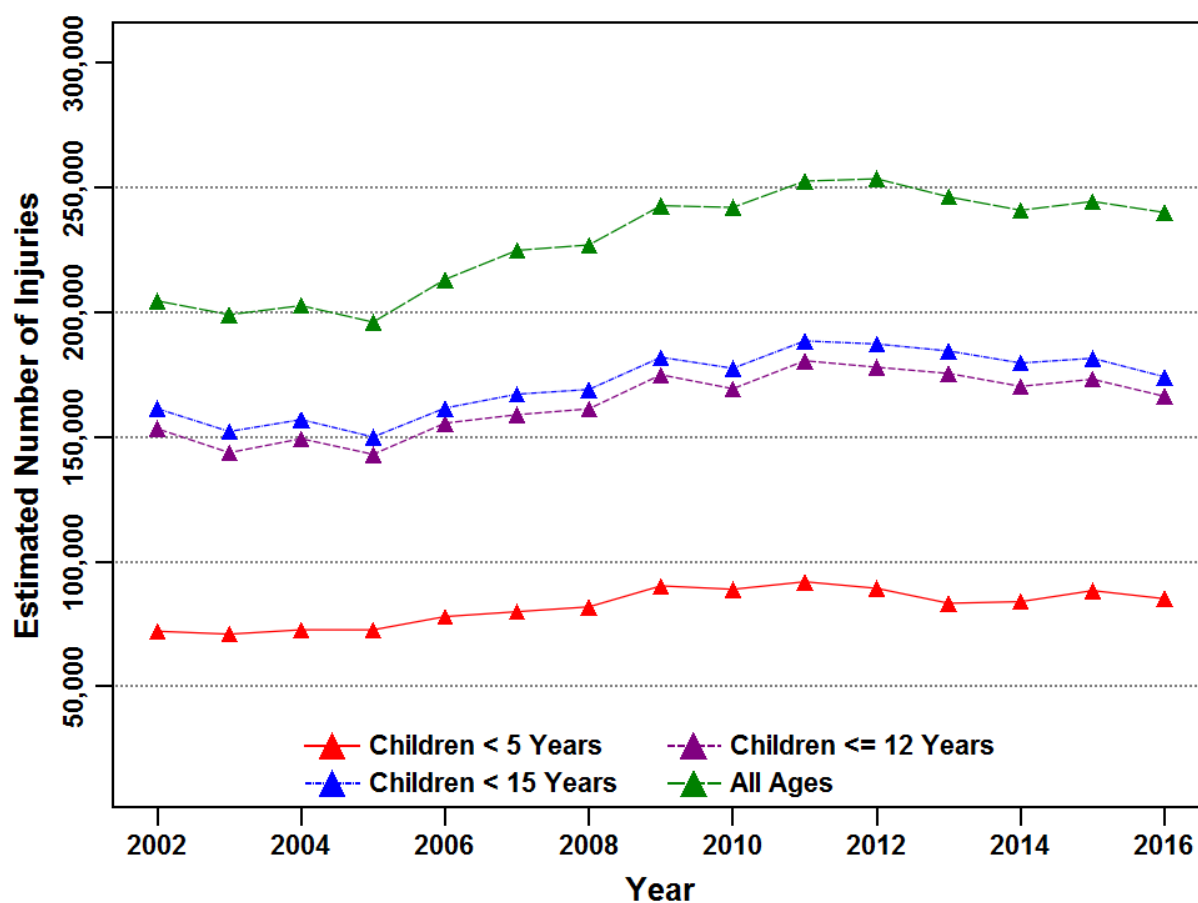
Calendar Year [*]	All Ages		Children Younger Than 15 Years of Age		Children 12 Years of Age or Younger		Children Younger Than 5 Years of Age	
	Injury Estimate	95% Confidence Interval	Injury Estimate	95% Confidence Interval	Injury Estimate	95% Confidence Interval	Injury Estimate	95% Confidence Interval
2002	204,600	175,500–233,600	161,400	136,100–186,700	153,300	129,500–177,100	72,100	59,700–84,500
2003	199,000	170,400–227,700	152,200	129,100–175,300	143,700	121,900–165,500	71,000	59,300–82,600
2004	202,700	173,200–232,200	157,000	132,300–181,700	149,300	125,800–172,800	72,700	61,200–84,200
2005	196,100	169,300–222,800	150,000	127,500–172,500	143,000	121,200–164,900	72,700	61,800–83,600
2006	213,200	183,500–242,800	161,600	136,900–186,300	155,600	131,900–179,200	78,000	66,100–89,900
2007	224,800	193,100–256,600	167,200	142,100–192,300	158,900	134,900–183,000	80,000	67,500–92,400
2008	227,000	195,200–258,800	169,100	143,700–194,400	161,300	136,900–185,700	81,900	68,800–95,000
2009	242,700	208,000–277,400	182,000	153,500–210,400	174,900	147,400–202,400	90,300	75,900–104,700
2010	242,000	207,400–276,700	177,500	149,000–206,000	169,300	142,200–196,500	88,900	73,700–104,100
2011	252,600	217,000–288,200	188,500	158,600–218,400	180,600	151,600–209,500	92,000	74,600–109,300
2012	253,500	218,200–288,800	187,300	157,200–217,400	178,000	149,200–206,700	89,300	73,000–105,600
2013	246,300	210,900–281,600	184,500	155,000–213,900	175,500	147,100–203,900	83,300	67,900–98,800
2014	240,900	201,300–280,500	179,700	145,900–213,400	170,300	138,100–202,500	84,000	65,500–102,500
2015	244,400	203,200–285,700	181,600	146,500–216,600	173,200	138,900–207,400	88,400	68,100–108,700
2016	240,000	195,500–284,500	174,100	135,600–212,600	166,300	128,800–203,800	85,200	63,500–106,800

Source: NEISS, U.S. Consumer Product Safety Commission. Estimates are rounded to the nearest 100.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

^{*}Tabulated estimates with confidence intervals for 2002–2016 were produced in August 2017.

**Figure 3: Toy-Related Emergency Department-Treated Injury Estimates for Different Age Groups
2002–2016[§]**



Source: NEISS, U.S. Consumer Product Safety Commission.

[§] To align with other toy-related injury statistics generated by CPSC, product code 5011 (book bags or back carriers) was removed from the NEISS product codes for toys for this report. Therefore, the toy-related injury estimates presented in this report are not comparable with the ones presented in the previous annual toy reports.

Appendix B

NEISS Product Codes for Toys as of January 1, 2016

Product Code	Toy Type
1301	Tricycles (Children's)
1309	Kites or Kite String
1310	Pogo Sticks
1314	Rocketry Sets
1319	Metal or Plastic Molding Sets
1322	Children's Play Tents, Play Tunnels, or Other Enclosures
1325	Inflatable Toys (Excluding Balls and Balloons)
1326	Blocks, Stacking Toys, or Pull Toys
1327	Nonwheeled Riding Toys, Unpowered
1328	Wagons (Children's)
1329	Scooters, Unpowered
1330	Powered Riding Toys
1338	Toy Bows or Arrows
1342	Costumes or Masks
1344	Toy Musical Instruments
1345	Building Sets
1346	Clacker Balls
1347	Balloons (Toy)
1349	Stilts
1350	Squeeze or Squeaker Toys
1352	Slingshots or Sling-Propelled Toys
1353	Toy Boxes or Chests
1354	Marbles
1362	Woodburning Kits
1365	Water Toys (Excluding Squeeze/Squeaker Toys and Inner Tubes or Similar Floating Equipment)
1376	Molding Compounds
1381	Toys, Not Elsewhere Classified
1389	Other Toy Weapons (Nonprojectile)
1390	Toy Guns, Not Specified

Product Code	Toy Type
1392	Toy Sports Equipment
1393	Chemistry Sets or Science Kits
1394	Dolls, Plush Toys, and Action Figures
1395	Toys, Not Specified
1398	Wheeled Riding Toys, Unpowered (Excluding Bicycles and Tricycles)
1399	Toy Guns With Projectiles
1550	Infant and Toddler Play Centers (Excluding Jumpers, Bouncers, and Exercisers)
5001	Other Toy Weapons (Projectile)
5005	Riding Toys (Excluding Bicycles and Tricycles), Not Specified
5006	Other Toy Guns
5007	Toy Weapons, Not Specified
5010	Crayons Or Chalk (Excluding Billiard or Pool Chalk)
5013	Toy Make-Up Kits or Cosmetics (Excluding Mirrors)
5015	Toy Caps, Cap Toys, or Cap Guns
5016	Balls, Other or Not Specified
5017	Flying Discs and Boomerangs
5018	Doll Houses and Other Play Scenes
5019	Games or Game Parts (Excluding Marbles and Computer Games)
5020	Pretend Electronics, Tools, Housewares, and Appliances
5021	Toy Vehicles (Excluding Riding Toys)