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Child and Youth Injury in Review 2009 Edition



Spotlight
on **Consumer**
Product Safety

To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.

Public Health Agency of Canada

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About the Injury and Child Maltreatment Section, Public Health Agency of Canada

The Injury and Child Maltreatment Section manages national surveillance programs for child health including unintentional injury. Collaboration with partners, such as those below, supports injury-related research and provides information on injuries and their risk factors for evidence-based injury prevention and safety promotion.

For more information on the Injury and Child Maltreatment Section, please visit: www.phac-aspc.gc.ca/injury-bles

Current injury surveillance data is available from the Injury Surveillance On-Line (ISOL) Website which hosts Canadian injury statistics. Users can customize their queries by province and territory, by age group, and over time. Please visit: dsol-smed.phac-aspc.gc.ca/dsol-smed/is-sb

About Consumer Product Safety, Health Canada

Consumer Product Safety helps protect the Canadian public by researching, assessing and collaborating in the management of the health risks and safety hazards associated with the many consumer and cosmetic products that Canadians use every day.

Consumer Product Safety is actively involved in injury prevention through promoting safety and the safe use of products to consumers, providing industry with hazard and technical information, and enforcing legislation by conducting investigations and inspections, and initiating corrective action.

For more information:

Please visit the Consumer Product Safety Website for more information for consumers and professionals: www.healthcanada.gc.ca/cps

For a listing of Consumer Product Recalls, visit: www.healthcanada.gc.ca/cps-recalls

To report a consumer complaint, or if you have an inquiry, please contact: 1-866-662-0666 or 613-952-1014 or by email: CPS-SPC@hc-sc.gc.ca

About Safe Kids Canada

Serious childhood injuries can be prevented. Safe Kids Canada collaborates with partners across the country to conduct research, raise awareness, educate families, and advocate for safer environments to protect children from injury. As a national leader, Safe Kids Canada promotes effective strategies to prevent unintentional injuries. By building partnerships and using a comprehensive approach, Safe Kids Canada advances safety and reduces the burden of injury to Canada's children and youth.

Call 1-888-SAFE-TIP (723-3847) or visit the website at: www.safekidscanada.ca

Safe Kids Canada is the national injury prevention program of The Hospital for Sick Children. It is generously funded by corporate sponsors who support the goal of keeping kids safe. Safe Kids Canada is part of Safe Kids Worldwide, a global movement to prevent childhood injury.

Table of Contents

Acknowledgements	2
Foreword	4
Introduction	5
Executive Summary	7

Injury Overview

1. Unintentional Injury Deaths	9
2. Unintentional Injury Hospitalizations	13
3. Emergency Department Visits: Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP)	17

Spotlight on Consumer Product Safety

4. Consumer Product-Related Injuries	19
5. Bunk Beds	23
6. Magnets	27
7. Baby Walkers	30
8. Other Household Products	34

Appendices

A. External Cause of Injury Groupings	43
B. Report Methodology	44

Foreword

Message from Canada's Chief Public Health Officer



I am pleased to introduce *Child and Youth Injury in Review, 2009 Edition – Spotlight on Consumer Product Safety*. This report presents national surveillance and prevention information on unintentional injuries to children and youth in Canada, with a focus on some important consumer product-related injuries. The document is a collaborative effort of the Public Health Agency of Canada, Health Canada and Safe Kids Canada.

Child and youth injuries are a major public health challenge for Canada. While the rates of death and hospitalization due to unintentional injury have declined considerably over the past two decades, there is more work to be done. We hope that this report will contribute to effective injury prevention and safety promotion policies, programs and activities for Canada's children and youth.

This report also contains important information and tips for parents, caregivers, and anyone interested in helping to prevent injury among children and youth.

A handwritten signature in black ink, reading "David Butler-Jones".

Dr. David Butler-Jones
Chief Public Health Officer
Public Health Agency of Canada

Introduction

Unintentional injuries are the leading cause of death for Canadian children and youth from one to 19 years of age¹. Infants under one year are excluded from this statistic due to distinct patterns of mortality for this age group. The most common cause of death for infants under one year is immaturity, followed by congenital anomalies²; however, injury-related deaths among infants are also of concern. In 2005, a total of 720 Canadians under the age of 20 years died as a result of injury³. Furthermore, there were 29,142 injury hospitalizations for this age group in the year spanning 2005/06. Injuries were the third leading cause of hospitalizations among all children and youth, behind respiratory and digestive disease⁴. Many non-fatal injuries result in impairments and disabilities such as blindness, spinal cord injury and intellectual deficit due to brain injury. The economic burden of unintentional and intentional

injuries combined, for Canadians of all ages in 2004, is estimated to be \$19.7 billion, including both direct and indirect costs⁵.

This report, *Child and Youth Injury in Review*, is presented in two parts. *Injury Overview* contains information based on Public Health Agency of Canada analysis of the most current national data available from Statistics Canada (mortality data, 2005) and the Canadian Institute for Health Information (hospitalization data, 2005/06). Deaths and hospitalizations from injury and poisoning are assigned an external cause of injury code based on the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)⁶. For the purposes of this report, only unintentional injury data were analyzed. The following external cause of injury code groupings were used:

- **All unintentional injuries, excluding adverse events (EAE):**
 - **Motor vehicle traffic (MVT-All):** Collisions occurring on a public highway or street, which can be further subdivided into:
 - *MVT – Occupant: A driver or passenger of a motor vehicle injured in a collision.*
 - *MVT – Pedal cyclist: A pedal cyclist injured in collision with a motor vehicle.*
 - *MVT – Pedestrian: A pedestrian injured in collision with a motor vehicle.*
 - **Falls**
 - **Poisonings**
 - **Suffocation**
 - **Fire/Hot object/substance (e.g. house fire, burned by a stove or hot liquid)**
 - **Drowning**
 - **Struck by/Against (e.g. hit by a puck, collision with a person)**

Information on emergency department visits collected through the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) are also presented. Analysis focuses primarily on Canadians 19 years of age and younger.

The second half of the report, *Spotlight on Consumer Product Safety*, increases the resolution of the information using the high level of detail from CHIRPP, related to consumer products. The CHIRPP injury reports and profiles are generally descriptive in nature and provide preliminary data to inform prevention efforts, as well as for hypothesis generation and further study. Safe Kids Canada is raising awareness of

consumer product safety for children by focusing on this topic in their 2009 Safe Kids Week campaign. Opportunities for action from a consumer perspective, as well as regulatory, compliance and enforcement activities are discussed for each consumer product.

Injury prevention is a complex issue. This report will contribute to our knowledge by providing both an overview of all unintentional injuries, and detailed CHIRPP profiles focused on a specific group of injuries related to selected consumer products. Understanding the magnitude, trends and nature of injury is a critical first step on the road to a safer Canada.

See Appendix A for all external cause of injury ICD-10 groupings, and Appendix B for full details on the methodology (including abbreviations).

References

1. Public Health Agency of Canada. *Facts on Injury [Online]*. Ottawa. [cited 2009 Feb 19]. Available from: www.phac-aspc.gc.ca/injury-bles/facts-eng.php
2. Public Health Agency of Canada. *Canadian Perinatal Health Report, 2008 Edition*. Ottawa, 2008.
3. *Injury and Child Maltreatment Section analysis of Statistics Canada mortality data*. Public Health Agency of Canada, Ottawa, Ontario, Canada. January 2009.
4. *Injury and Child Maltreatment Section analysis of Canadian Institute for Health Information hospitalization data*. Public Health Agency of Canada, Ottawa, Ontario, Canada. January 2009.
5. SmartRisk. *The Economic Burden of Injury in Canada*, in press 2009.
6. World Health Organization. *International Statistical Classification of Diseases and Related Health Problems, 10th rev*. Geneva, World Health Organization; 1996.

Executive Summary

Background

This report is intended to provide an overview of unintentional injuries among young Canadians, with a specific focus in the second half of the report placed on injuries associated with consumer products.

The data presented are based on Public Health Agency of Canada analysis of the most current national data available from Statistics Canada (mortality, 2005), the Canadian Institute for Health Information (hospitalizations, 2005/06) and emergency department data collected (1990-2007) through the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP).

Collaboration with Safe Kids Canada and Health Canada provided injury prevention guidelines for consumers, as well as background on regulatory, compliance and enforcement activities underway in Canada.

An overview of child and youth injury in Canada:

- Unintentional injuries are the leading cause of death among Canadian children and youth, from one to 19 years of age.
- In 2005, 720 young Canadians (19 years and younger) died as a result of injuries: a reduction of just over 40% since 1990, due primarily to the decline in motor vehicle traffic collision deaths.
- In 2005/06, there were 29,142 hospitalizations for treatment of injuries (19 years and younger): a reduction of almost 40% since 1994/95.
- Between 1990 and 2007 more than 1.6 million injuries were treated in the emergency departments of the 16 hospitals participating in CHIRPP (19 years and younger).
 - In recent years, almost half of these emergency department visits involved consumer products (e.g. furniture, window coverings, toys).

Consumer product-related injuries

CHIRPP data were analyzed to profile multiple types of consumer product-related injuries in children and youth. Details on the circumstances surrounding injuries associated with bunk beds, magnets, baby walkers and other household products were reported.

Bunk Beds

- Bunk beds present numerous hazards to young children resulting in injuries such as falls and strangulations.
- Between 1990 and 2007, 5,403 cases of injuries associated with bunk beds were identified.

- Patients who sustained injuries involving a top bunk were almost twice as likely to be admitted to the hospital compared to the CHIRPP average (10.8% vs. 6.8%).

Magnets

- Magnet-related injuries have increased sharply in recent years.
- Between 1993 and 2007 there were 328 cases of children aged 13 years or younger who sustained an injury associated with magnets.
- Just over half of these incidents involved ingestion of a magnet.
- About 60% of the magnets were associated with a toy and about one-quarter involved jewellery.

Baby Walkers

- In April 2004, Health Canada acted to ban the sale, advertisement and importation of baby walkers in Canada.
- Between 1990 and 2007 there were 2,192 baby walker-related injuries among children aged 5-14 months, accounting for 2.6% of all injury events among this age group.
- Of the children in baby walkers who fell down stairs or fell from a height, 88.8% sustained head injuries and 8.2% required admission to hospital.

Other Household Products

- There are numerous hazards in and around the home which present an injury risk to children and youth.
- Trampoline-related injuries have become increasingly common in recent years due to the availability of relatively low-cost backyard models. Falls from the trampoline involving impact with the ground are the most severe, generating almost two-thirds of all fractures and one in five patients being admitted to hospital.
- Drownings and near-drownings can occur in association with bath seats, in particular when a child is left unattended.
- Children playing around dangling blind or curtain cords are exposed to a strangulation hazard.
- Furniture, televisions and large appliances are frequently associated with injuries sustained in the home. Injury mechanism varies by furniture type.
- Between 1990 and 2007 injury events involving furniture, televisions and large appliances averaged about 9,000 cases per year, 71% of which involved children less than 5 years of age.

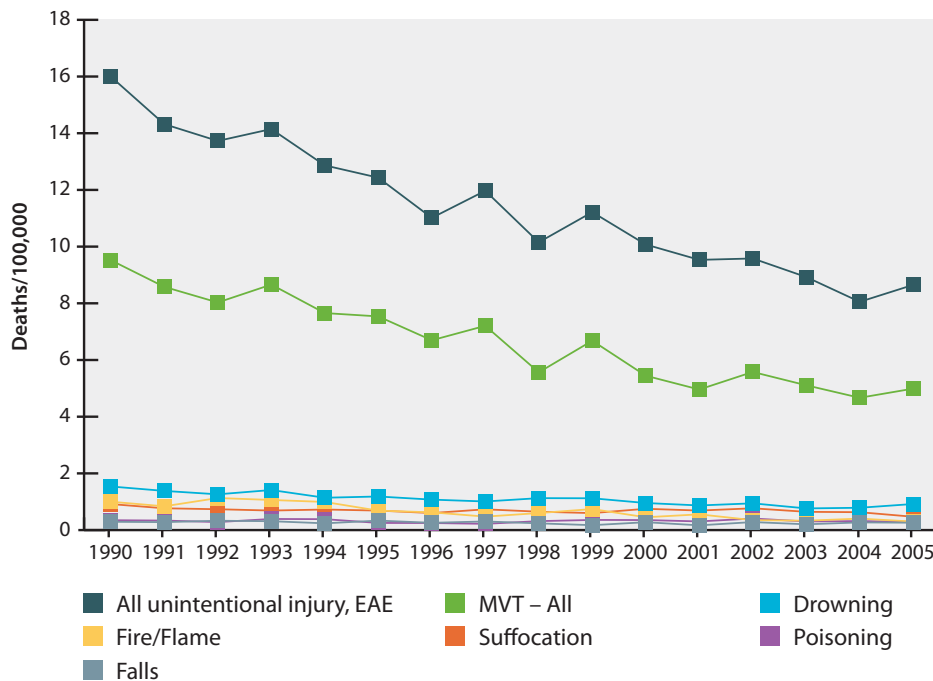
1 ■ Unintentional Injury Deaths

Injury deaths over time, by cause (1990-2005)

In 2005, 720 children and youth died as a result of unintentional injury, up since 2004, during which 664 deaths were reported; however, this is a one year increase only and not sufficient to establish a trend. Overall, unintentional injury deaths decreased by 46% between 1990 and 2005 with an average annual percentage decrease of 4.1% (95% CI -4.6, -3.5), due primarily to the decrease in *Motor Vehicle Traffic* (MVT-All) collision deaths (-4.5%, 95% CI -5.3, -3.7) (see Figure 1).

The rate of *Motor Vehicle Traffic* deaths occurred on a magnitude almost six times greater than any other unintentional injury group.

Figure 1. Unintentional injury deaths in Canada, 1990-2005, by selected causes, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada 1991)

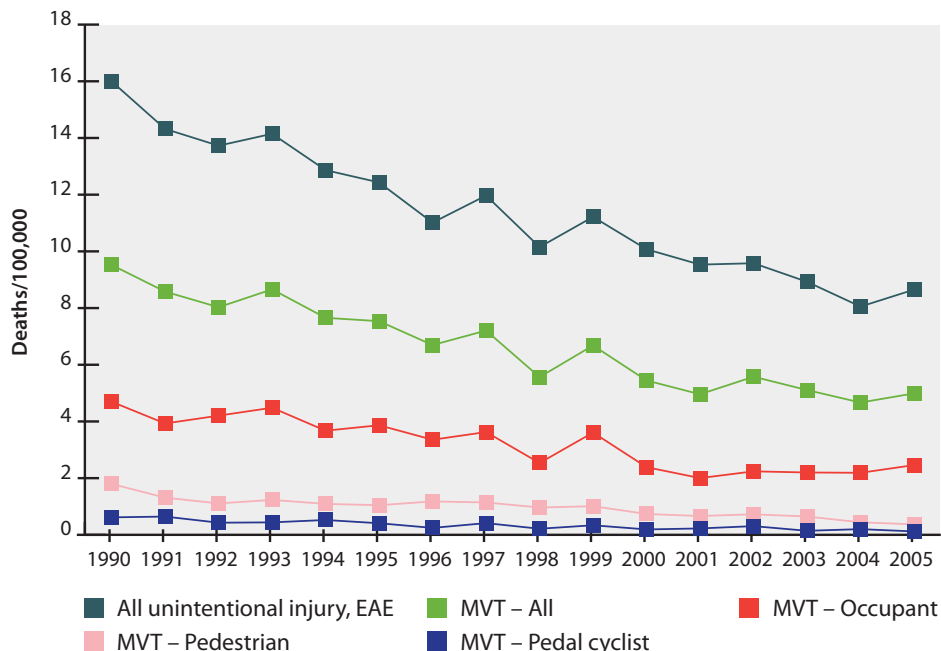


Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Figure 2 illustrates unintentional deaths associated with all *Motor Vehicle Traffic* collisions, and expands this category to highlight the three major sub-groups:

- MVT – Occupant
Average annual percentage decrease of 5.4% (95% CI -6.9, -3.9)
- MVT – Pedestrian
Average annual percentage decrease of 7.7% (95% CI -9.5, -5.9)
- MVT – Pedal cyclist
Average annual percentage decrease of 9.1% (95% CI -11.7, -6.5)

Figure 2. Unintentional injury deaths in Canada, and unintentional deaths associated with motor vehicle traffic, 1990-2005, by cause, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada 1991)



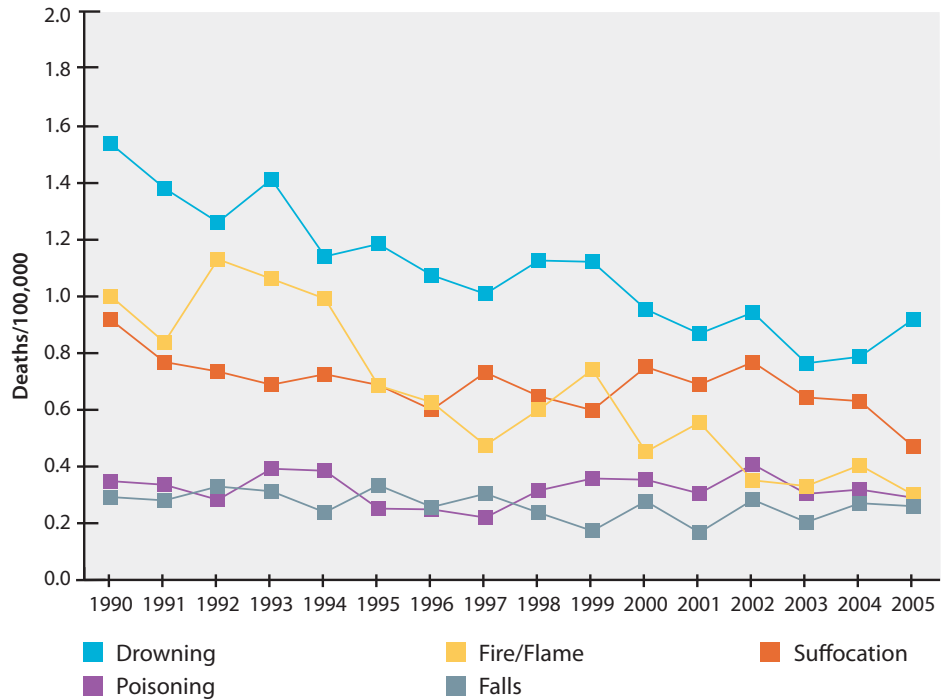
Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Figure 3 shows that between 1990 and 2005, progress has been achieved in lowering mortality rates associated with *Suffocation*, *Drowning* and *Fire/Flame* injuries, all of which displayed significant decreases over time:

- Suffocation
Average annual percentage decrease of 1.9% (95% CI -3.2, -0.6)
- Drowning
Average annual percentage decrease of 3.9% (95% CI -4.8, -3.0)
- Fire/Flame
Average annual percentage decrease of 8.0% (95% CI -9.9, -5.9)

Mortality rates associated with *Poisoning* and *Falls* displayed no significant change during this time frame.

Figure 3. Unintentional injury deaths in Canada, 1990-2005, by selected causes, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada 1991)



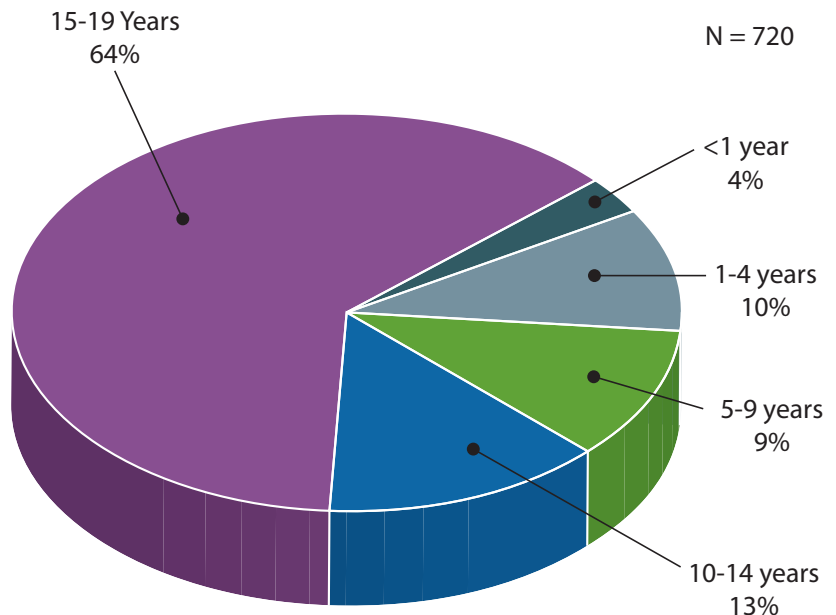
Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Injury deaths by age and sex, 2005

Figure 4 demonstrates that 15 to 19 year olds accounted for almost two-thirds of injury deaths in 2005. There were 29 infants (less than one year) who died as a result of injury in 2005.

Infants (less than one year of age, males and females combined) experienced unintentional injury mortality at a crude rate of 8.5/100,000 persons in 2005, second only to the 15 to 19 year olds at 21.0/100,000 persons (males and females combined).

Figure 4. Unintentional injury deaths in Canada, 2005, by age group, both sexes combined (0-19 years)

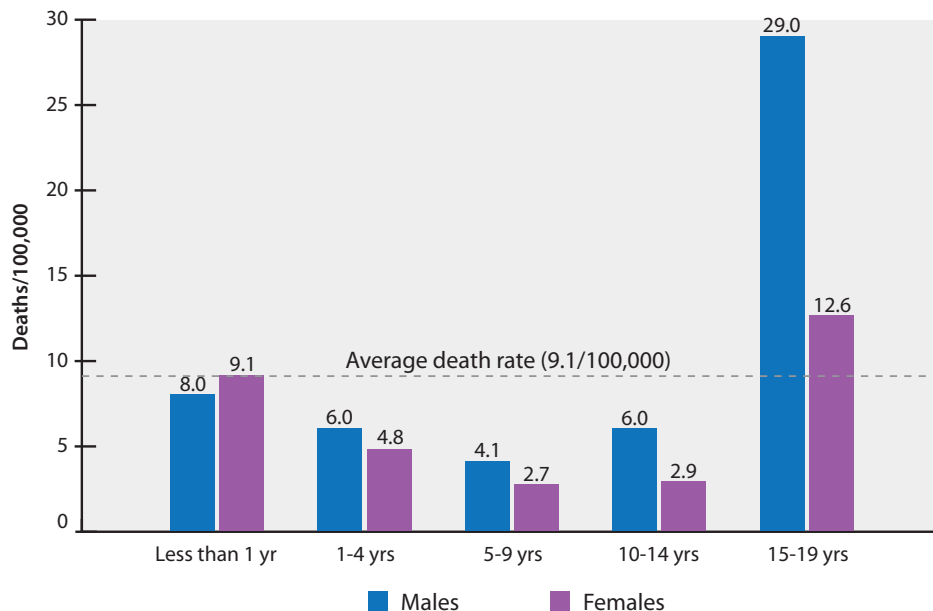


Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Figure 5 illustrates that 15 to 19 year old males had the highest crude death rates at 29.0/100,000 persons, almost three times the rate of females in this age group (12.6/100,000 persons). Infant females (less than one year of age) demonstrated the second highest rate of 9.1/100,000 persons.

Among all children and youth (0-19 years), males experienced unintentional injury deaths at a higher crude rate than females during 2005; 12.0/100,000 persons versus 6.1/100,000 persons, respectively.

Figure 5. Unintentional injury deaths in Canada, 2005, by age group and sex, crude rates/100,000 persons (0-19 years)

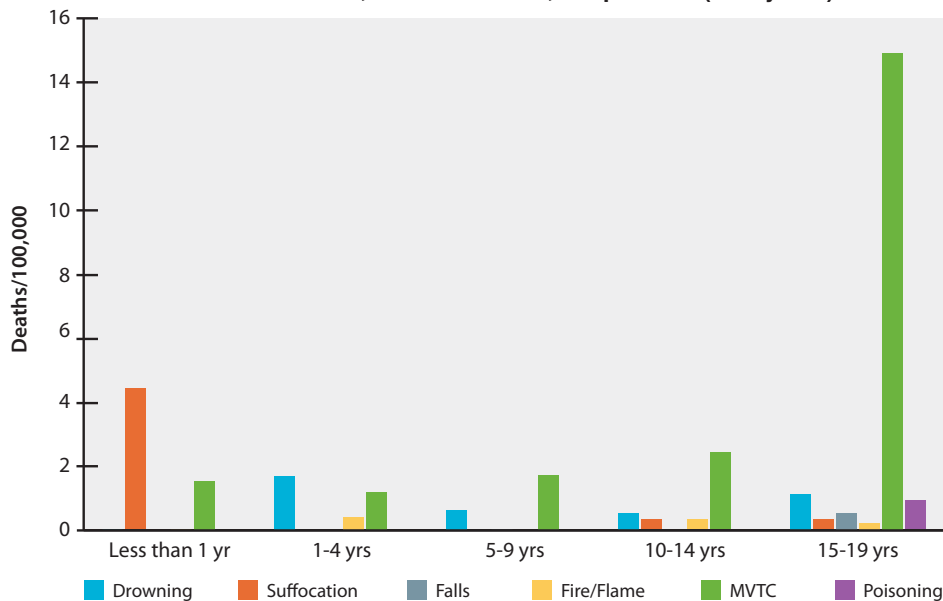


Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Injury deaths by age and cause, 2005

The leading cause of injury deaths among children and youth in 2005 were *Motor Vehicle Traffic* collisions, followed by *Drowning* and *Suffocation* (see Table 1). Figure 6 illustrates unintentional injury crude death rates by age group and cause for both males and females combined in 2005. The leading causes of injuries change as children grow into youth, and reflects their patterns of development.¹ Suffocation rates among infants (e.g. choking on food, strangulation in blind cords) were reported at a rate of 4.4/100,000 persons, which is more than 10 times the rate for children and youth overall. *Motor Vehicle Traffic* collision deaths among 15 to 19 year olds reached 14.9/100,000 persons as youth learn to drive, compared with a rate of 5.4/100,000 persons for all children and youth combined. Within the 15 to 19 year age group, males were the victims of *Motor Vehicle Traffic* deaths at nearly twice the rate of females, 19.3/100,000 persons compared to 10.2/100,000 persons.

Figure 6. Unintentional injury deaths in Canada, 2005, by age group and cause, both sexes combined, crude rates/100,000 persons (0-19 years)*



* Bars related to very low injury counts were not shown.

Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

Leading Causes of Death, 2005

Table 1. Unintentional injury deaths in Canada, 2005, by external cause, 0-19 years, both sexes combined, crude rates/100,000 persons

Cause	0-19 Years, Both Sexes	
	Deaths/100,000 persons	% Males
All unintentional injury, excluding adverse events (EAE)*	9.1	67.4
Motor vehicle traffic (MVT – All)	5.4	64.4
MVT – Occupant	2.7	66.5
MVT – Pedestrian	0.4	53.0
MVT – Pedal cyclist	0.1	80.0
Drowning	0.9	70.8
Suffocation	0.4	71.4
Fire/Flame	0.3	43.5
Poisoning	0.3	56.0
Falls	0.3	80.9

* Crude death rate for other and undetermined injuries was 1.5/100,000 persons.

Summary by age group and sex:

Less than one year: For both males and females, *Suffocation* was the leading cause, followed by *Motor Vehicle Traffic* collisions.

One to four years: *Drowning*, followed by *Motor Vehicle Traffic* collisions were the leading causes for both males and females.

Five to nine years: *Motor Vehicle Traffic* collisions were the leading cause for both males and females, but the second leading cause for males was *Drowning* and for females it was *Fire/Flame*.

10 to 14 years: *Motor Vehicle Traffic* collisions were the leading cause, followed by *Drowning*, for both males and females.

15 to 19 years: For both males and females the primary cause was *Motor Vehicle Traffic* collisions. For males, the second leading cause was *Drowning* and for females it was *Poisoning*.

It should be noted than among adolescents where poisoning was ranked among the leading causes of death, in some cases these may be misclassifications of completed suicides.²

Source: Public Health Agency of Canada analysis of Statistics Canada (mortality) data.

References

1. Safe Kids Canada. *Child & Youth Unintentional Injury: Ten Years in Review 1994-2003*; 2007.
2. O'Carroll PW. A consideration of the validity and reliability of suicide mortality data. *Suicide Life Threat Behav.* 1989 Spring;19(1):1-16.

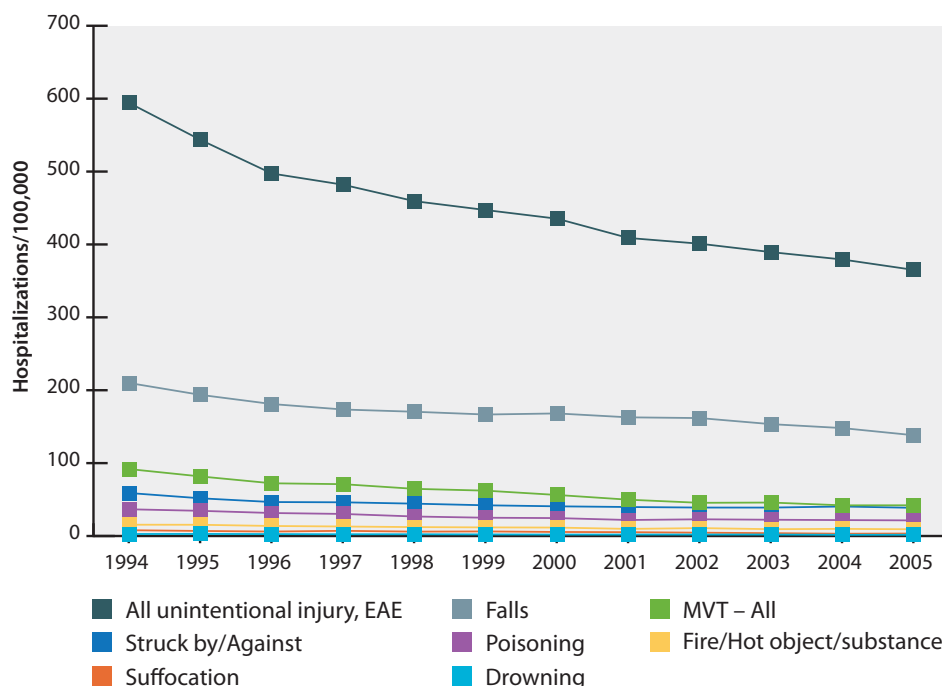
2 ■ Unintentional Injury Hospitalizations

Injury hospitalizations over time, by cause (1994/95-2005/06)

There were 29,142 hospitalizations in 2005/06 for treatment of unintentional injuries among Canadian children and youth. See Figure 7 for trends in hospitalization rates overall, and for major causes.

Over time, standardized hospitalization rates associated with unintentional injuries in this age group have decreased by almost 40.0% overall, from 594/100,000 persons in 1994/95 to 365/100,000 persons in 2005/06, or by an average annual percentage decrease of 4.0% (95% CI -4.5, -3.4).

Figure 7. Unintentional injury hospitalizations in Canada, 1994/95-2005/06, by selected causes, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada 1991)



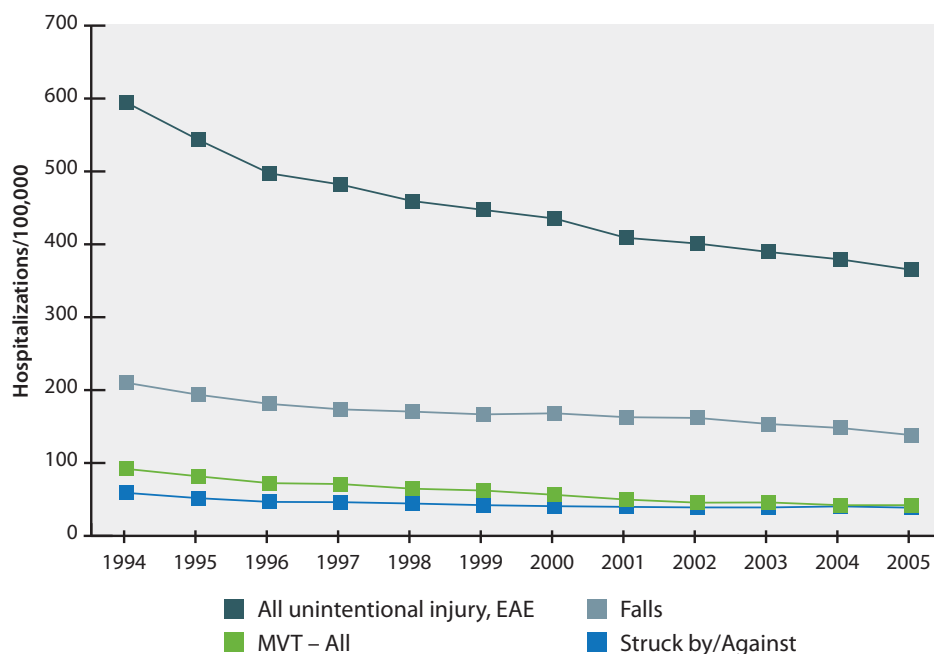
Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Figure 8 examines trends for the three leading causes of unintentional injury hospitalizations:

- Motor vehicle traffic (MVT – All)
Average annual percentage decrease of 7.1% (95% CI -7.8, -6.3)
- Struck by/Against
Average annual percentage decrease of 3.3% (95% CI -4.3, -2.1)
- Falls
Average annual percentage decrease of 3.0% (95% CI -3.5, -2.4)

All the major external causes of injury hospitalizations demonstrated statistically significant average annual percentage reductions between 1994/95 and 2005/06.

Figure 8. Unintentional injury hospitalizations in Canada, 1994/95-2005/06, by selected causes, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada 1991)



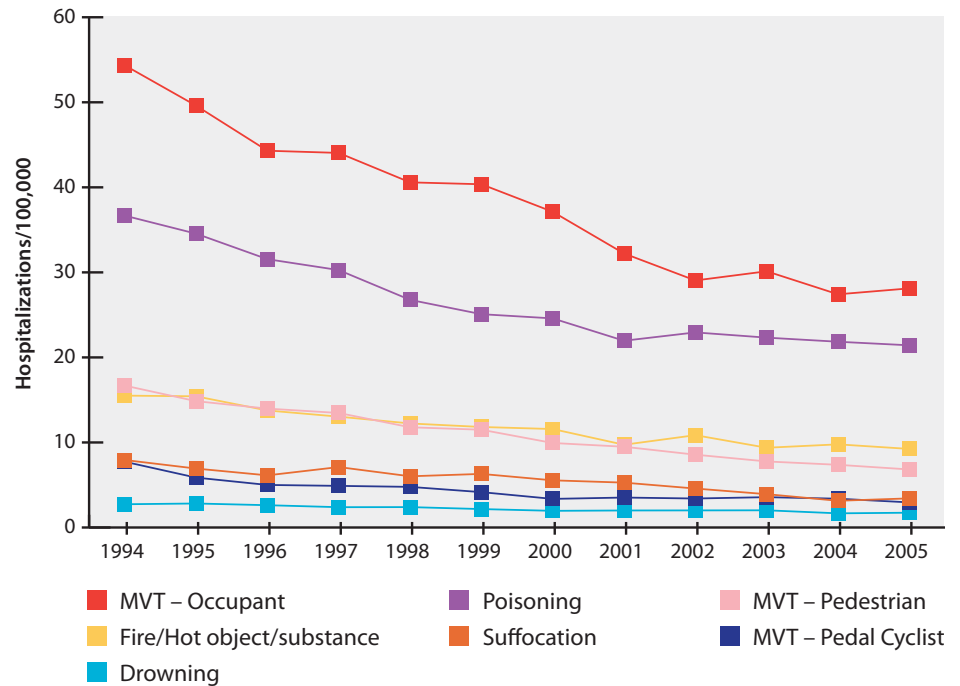
Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Figure 9 illustrates the trends for other external cause of injury groups; the following exhibited the strongest declines:

- MVT – Pedestrian
Average annual percentage decrease of 7.8% (95% CI -8.2, -7.4)
- Suffocation
Average annual percentage decrease of 7.4% (95% CI -9.2, -5.7)
- MVT – Occupant
Average annual percentage decrease of 6.2% (95% CI -7.0, -5.4)
- Poisoning
Average annual percentage decrease of 5.0% (95% CI -6.0, -4.0)

A secondary factor contributing to the downward trend may be the changing hospital admission policies implemented in past years¹.

Figure 9. Unintentional injury hospitalizations in Canada, 1994/95-2005/06, by selected causes, 0-19 years, both sexes combined, standardized rates/100,000 persons (Canada, 1991)

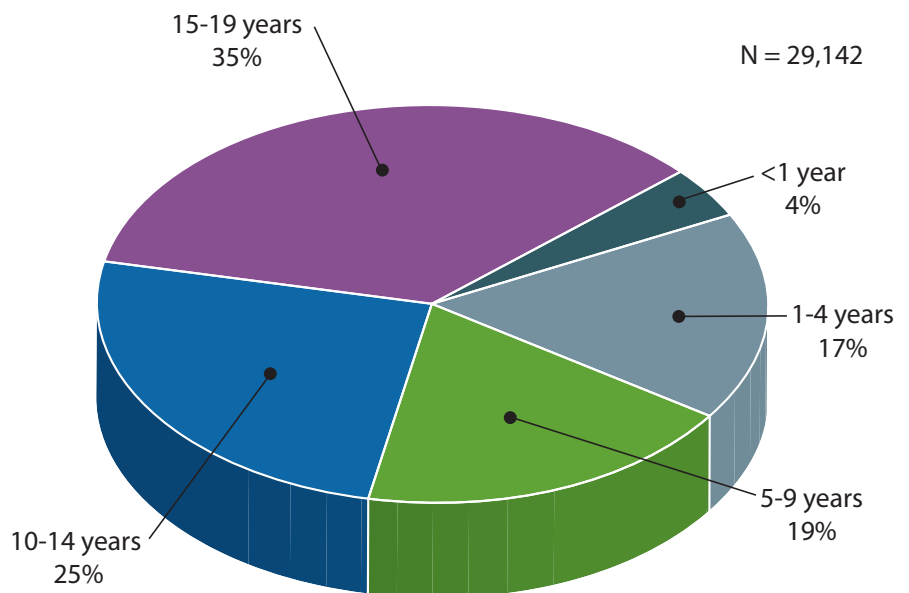


Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Injury hospitalizations by age and sex, 2005/06

Figure 10 illustrates that youth 15 to 19 years of age accounted for just over one-third of injury hospitalizations in 2005/06. For infants (less than one year), there were 1,237 injury hospitalizations.

Figure 10. Unintentional injury hospitalizations in Canada, 2005/06, by age group, both sexes combined (0-19 years)

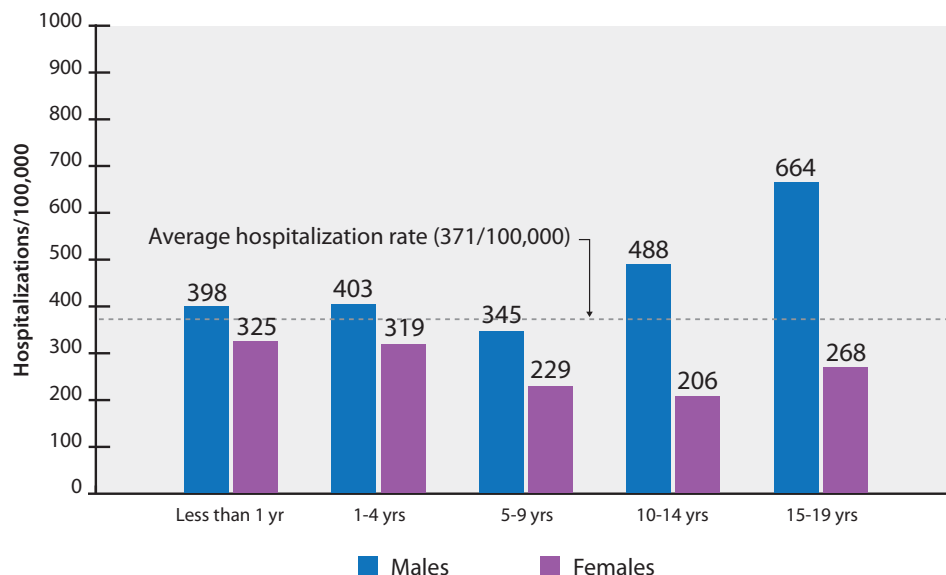


Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Figure 11 examines unintentional injury crude hospitalization rates by age group and sex and demonstrates that in all age groups rates were higher for males than females. The lowest rate was in 10 to 14 year old females, 206/100,000 persons. The male to female difference was smallest for infants less than one year with a male to female ratio of 10:8 and increased consistently with age. The male to female ratio for 15 to 19 year olds was 10:4.

Males in the 15 to 19 year age group had a crude hospitalization rate for unintentional injuries of 664/100,000 persons in 2005/06 – 2.5 times that of females in this age group.

Figure 11. Unintentional injury hospitalizations in Canada, 2005/06, by age group and sex, crude rates/100,000 persons (0-19 years)

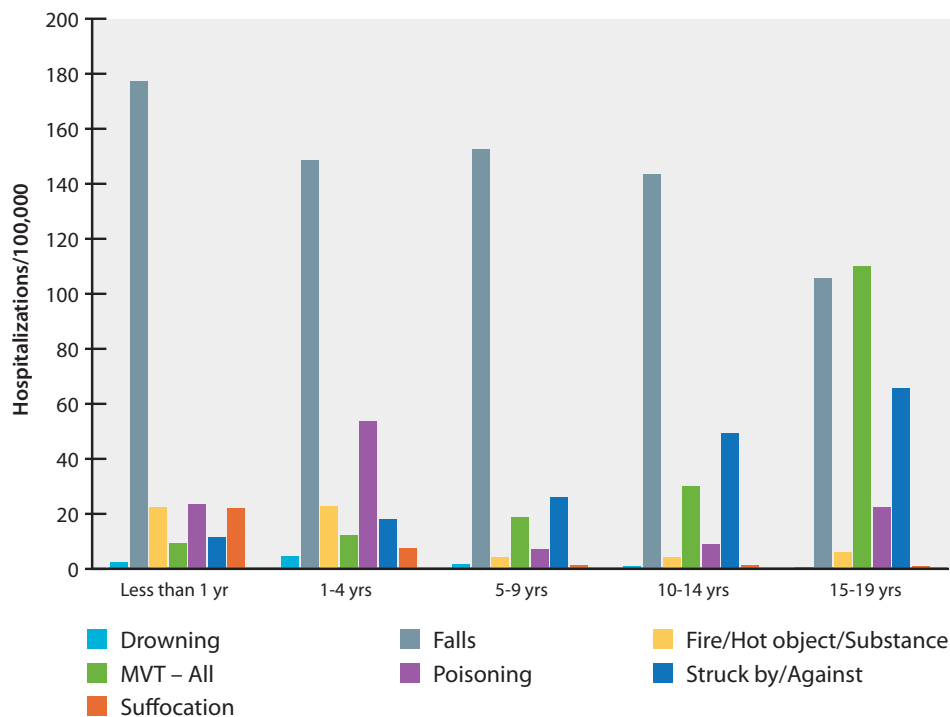


Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Injury hospitalizations by age and cause, 2005/06

Falls was the leading cause of injury hospitalizations for children of all ages and both sexes combined (see Table 2), a pattern which is consistent among each age group, with the exception of 15 to 19 year olds. Among 15 to 19 year olds, *Motor Vehicle Traffic* collisions and *Falls* were the two main causes of injury hospitalizations at 110/100,000 persons and 106/100,000 persons, respectively. These patterns are illustrated in Figure 12.

Figure 12. Unintentional injury hospitalizations in Canada, 2005/06, both sexes combined, crude rates/100,000 persons (0-19 years)



Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

Leading Causes of Hospitalization, 2005/06

Table 2. Unintentional injury hospitalizations in Canada, 2005/06, by external cause, 0-19 years, both sexes combined, crude rates/100,000 persons

Cause	0-19 Years, Both Sexes	
	Hospitalizations/100,000 persons	% Males
All unintentional injury, excluding adverse events (EAE)*	371	66.7
Falls	138	64.3
Motor vehicle traffic (MVT – All)	45	63.0
<i>MVT – Occupant</i>	30	59.6
<i>MVT – Pedestrian</i>	7	59.5
<i>MVT – Pedal cyclist</i>	3	77.6
Struck by/Against	41	79.6
Poisoning	20	52.3
Fire/Hot object/substance	9	64.9
Suffocation	3	60.1
Drowning	2	62.2

* Crude hospitalization rate for other and undetermined injuries was 113/100,000 persons.

Summary by age group and sex:

Less than one year: For both males and females, *Falls* was the leading cause, followed by *Poisoning* in males and *Fire/Hot object/substance* for females.

One to four years: *Falls*, followed by *Poisoning* were the leading causes for both males and females.

Five to nine years: *Falls* followed by *Struck by/Against* were the leading causes for both males and females.

10 to 14 years: *Falls* remained the leading cause for both males and females, but the second leading cause for males was *Struck by/Against*, and for females it was *Motor Vehicle Traffic* collisions.

15 to 19 years: For males the leading cause was *Falls*, followed by *Motor Vehicle Traffic* collisions. In females, the causes were reversed; *Motor Vehicle Traffic* collisions was the leading cause, followed by *Falls*.

Source: Public Health Agency of Canada analysis of Canadian Institute for Health Information (hospitalization) data.

References

1. Canadian Institute for Health Information. Trends in Acute Inpatient Hospitalizations and Day Surgery Visits in Canada, 1995-1996 to 2005-2006 [Online]. Ottawa. [cited 2008 December 20]. Available from: secure.cihi.ca/cihiweb/disPage.jsp?cw_page=bl_hmdb_3jan2007_e

3 ■ Emergency Department Visits: CHIRPP

CHIRPP Overview

Information on emergency department visits in this report is based on data from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). The CHIRPP database is a unique national database collecting detailed information on the circumstances of injuries that result in visits to hospital emergency departments. Information in the CHIRPP database does not represent all injuries in Canada – only those seen at the emergency departments of the current 15 hospitals in the CHIRPP network. Since most of the data come from the paediatric hospitals, which are located in major cities, injuries suffered by the following people are under-represented in the CHIRPP database: older teenagers and adults, who are seen at general hospitals; and people who live in rural and Northern areas including First Nations, Métis and Inuit people. Fatal injuries are also under-represented in the CHIRPP database because many victims die at the scene and are not transported to hospital. CHIRPP only records fatalities for victims who are dead on arrival, or die during treatment in the emergency department.

The CHIRPP database is uniquely able to serve as both a national surveillance system, as well as a community-level system. Numerous studies using the CHIRPP data, both methodological and context-specific, have been published¹⁻³⁰. The results of methodological studies aid in the evolution of the database as well as helping to increase data quality

and capture. Studies on specific injury mechanisms provide detailed data to inform injury prevention and mitigation efforts.

Between 1990 and 2007, there were almost 2 million visits to the emergency departments participating in CHIRPP. The majority of these (84% or about 1.6 million) involved children and youth under 20 years of age.

Table 3 illustrates the proportion of these cases that were classified as serious injuries, based on one or both of the following indicators:

- **Treatment received in the emergency department:** Patient was either kept for prolonged observation or admitted to hospital.
- **Nature of injury:** The patient was diagnosed with a closed head injury or a fracture.

Children under five years old represent about one-third of all cases and have a higher proportion of closed head injuries but a lower proportion of fractures, compared to other age groups. Teenagers 15 to 19 years old represent the smallest proportion of cases but they are more frequently admitted to hospital or held for prolonged observation in the emergency department.

CHIRPP

Injuries are the most significant threat to the health of Canadian children and a leading cause of death and disability for people of all ages. Canadians are increasingly aware of the magnitude of this problem and this has led to greater interest in injury prevention. Concerned groups and individuals have been working together to formulate new and creative ways of reducing injuries. Those involved in promoting safe environments and behaviours have formed partnerships and networks, and regularly share data and strategies. CHIRPP is part of this growing partnership – an invaluable resource for those who need to know how, why, and to whom injuries are happening. By providing such information, CHIRPP is fulfilling its aim: to contribute to the reduction in the number and severity of injuries in Canada.

Table 3. Age and sex distribution, hospital admissions, closed head injury and fracture proportions, CHIRPP, 0-19 years, both sexes combined, 1990-2007

Age group	Number of cases (%)	% Male	% Observed /Admitted ^a	% Closed Head Injuries ^b	% Fractures
0-4 years	527,456 (32.7)	56.5	6.7	14.2	12.0
5-9 years	391,389 (24.3)	58.4	7.9	8.8	24.2
10-14 years	487,859 (30.2)	61.4	7.2	6.6	28.1
15-19 years	206,499 (12.8)	63.2	9.1	6.2	19.0
Total	1,613,203 (100.0)	59.3	7.5	9.6	20.7

a. Patients held in emergency for prolonged observation or admitted to hospital.

b. Closed Head Injury (CHI); includes minor closed head injuries, concussions and intracranial injuries.

References

1. Josse JM, MacKay M, Osmond MH, MacPherson AK. School Injury Among Ottawa-Area Children: A Population-Based Study. *J Sch Health*. 2009;79:45-50.
2. Pless, B. Surveillance alone is not the answer. *Inj Prev*. 2008;14(4):220-2.
3. Macpherson AK, White HL, Mongeon S, et al. Examining the sensitivity of an injury surveillance program using population-based estimates. *Inj Prev*. 2008;14(4):262-5.
4. Swaine BR, Tremblay C, Platt RW, Grimard G, Zhang X, Pless IB. Previous head injury is a risk factor for subsequent head injury in children: a longitudinal cohort study. *Pediatrics*. 2007;119(4):749-58.
5. Babul S, Nolan S, Nolan M, Rajabali F. An analysis of sport-related injuries: British Columbia children's hospital Emergency Department 1999 – 2003. *Int J Inj Contr Saf Promot*. 2007;14(3):192-5.
6. Yanchar NL, Kennedy R, Russell C. ATVs: motorized toys or vehicles for children? *Inj Prev*. 2006;12(1):30-4.
7. Keays G, Swaine B, Ehrmann-Feldman D. Association between severity of musculoskeletal injury and risk of subsequent injury in children and adolescents on the basis of parental recall. *Arch Pediatr Adolesc Med*. 2006;160(8):812-6.
8. Flavin MP, Dostaler SM, Simpson K, Brison RJ, Pickett W. Stages of development and injury patterns in the early years: a population-based analysis. *BMC Public Health*. 2006;6:187-96.
9. Simpson K, Brison RJ, Pickett W, Isaacs C, McFaul S, Herbert M. *Profile of Sport and Recreation-Related Neurotrauma*. Prepared for the Ontario Neurotrauma Foundation. 2005.
10. Lipskie T, Breslin FC. A descriptive analysis of Canadian youth treated in emergency departments for work-related injuries. *Chronic Dis Can*. 2005;26(4):107-13.
11. Kostylova A, Swaine B, Feldman D. Concordance between childhood injury diagnoses from two sources: an injury surveillance system and a physician billing claims database. *Inj Prev*. 2005;11(3):186-90.
12. Fiissel D, Pattison G, Howard A. Severity of playground fractures: play equipment versus standing height falls. *Inj Prev*. 2005;11(6):337-9.
13. Herbert M, Mackenzie SG. Injury surveillance in paediatric hospitals: The Canadian experience. *Paediatr Child Health*. 2004;9(5):306-8.
14. Pickett W, Streight S, Simpson K, Brison RJ. Injuries experienced by infant children: a population-based epidemiological analysis. *Pediatrics*. 2003;111(4 Pt 1):e365-70.
15. Winston FK, Weiss HB, Nance ML, et al. Estimates of the Incidence and Costs Associated with Handlebar-Related Injuries in Children. *Arch Pediatr Adolesc Med*. 2002;156:922-28.
16. Pickett W, Ardern C, Brison RJ. A population-based study of potential brain injuries requiring emergency care. *Cmaj*. 2001;165(3):288-92.
17. Pickett W, Brison RJ, Mackenzie SG, et al. Youth injury data in the Canadian Hospitals Injury Reporting and Prevention Program: do they represent the Canadian experience? *Inj Prev*. 2000;6(1):9-15.
18. Faelker T, Pickett W, Brison RJ. Socioeconomic differences in childhood injury: a population based epidemiologic study in Ontario, Canada. *Inj Prev*. 2000;6(3):203-8.
19. Mackenzie SG, Pless IB. CHIRPP: Canada's principal injury surveillance program. Canadian Hospitals Injury Reporting and Prevention Program. *Inj Prev*. 1999;5(3):208-13.
20. Macarthur C, Pless IB. Evaluation of the quality of an injury surveillance system. *Am J Epidemiol*. 1999;149(6):586-92.
21. Macarthur C, Pless IB. Sensitivity and representativeness of a childhood injury surveillance system. *Inj Prev*. 1999; 5(3): 214-6.
22. Mowat DL, Wang F, Pickett W, Brison RJ. A case-control study of risk factors for playground injuries among children in Kingston and area. *Inj Prev*. 1998;4(1):39-43.
23. Pickett W, Hartling L, Brison RJ. A population-based study of hospitalized injuries in Kingston, Ontario, identified via the Canadian Hospitals Injury Reporting and Prevention Program. *Chronic Dis Can*. 1997;18(2):61-9.
24. Macarthur C, Dougherty G, Pless IB. Reliability and validity of proxy respondent information about childhood injury: an assessment of a Canadian surveillance system. *Am J Epidemiol*. 1997;145(9):834-41.
25. Lillis KA, Jaffe DM. Playground injuries in children. *Pediatr Emerg Care*. 1997;13(2):149-53.
26. Beaulne G, ed. *For the Safety of Canadian Children and Youth: From Injury Data to Preventive Measures*. 1st ed. Ottawa: Health Canada;1997.
27. Bienefeld M, Pickett W, Carr PA. A descriptive study of childhood injuries in Kingston, Ontario, using data from a computerized injury surveillance system. *Chronic Dis Can*. 1996;17(1):21-7.
28. Mackenzie SG. Work-related injuries among children. *Canadian Journal of Pediatrics*. 1993;5:301-7.
29. Mackenzie SG. Childhood injuries. *Cmaj*. 1992;146(10):1692.
30. Blair GK, Macnab AJ, Smith D. Garage door injuries in children. *Cmaj*. 1992;147(8):1187-9.

4 ■ Consumer Product-Related Injuries

The injury profiles in the following sections are based on information from the *Canadian Hospitals Injury Reporting and Prevention Program* (CHIRPP). CHIRPP reports are generated from the data and are updated upon request or when there is reason to believe the injuries or circumstances surrounding the injuries have changed over time.

CHIRPP data support injury prevention initiatives of injury prevention centres, safety organizations, consumer organizations, and government departments engaged in injury prevention activities across the country. CHIRPP data are also frequently used to provide evidence in support of improved product regulations, standards and compliance, and enforcement policies.

Health Canada is one of the primary users of CHIRPP information to help protect the Canadian public by assessing and managing health risks and safety hazards associated with consumer products. Specifically, within Health Canada, Consumer Product Safety is responsible for consumer products under the *Hazardous Product Act* (HPA) and related Regulations. Under the HPA, industries are obligated to ensure that they do not sell a product that is banned in Canada and must ensure that the products that they import, sell or advertise are safe and meet all regulatory requirements. In addition, Health Canada will negotiate voluntary actions with companies that offer products that pose a health or safety risk to the consumer, even if they are not subject to Regulations.

Safe Kids Canada also utilizes CHIRPP injury data as a key component of their evidence-based unintentional injury prevention program development.

The following sections will provide an overview of consumer product-related injuries in CHIRPP, followed by reports on specific products. Each of these reports will contain:

- Detailed analysis of CHIRPP data, including statistics on the circumstances and types of injuries.
- Recommendations for injury prevention.
- Overview of current compliance and enforcement activities and regulatory initiatives.

What the data show

Between 1990 and 1996, the proportion of product-related injuries in CHIRPP (19 years and younger) varied from 22 to 38%. During this time period, five general hospitals were added to the system and the factor coding was modified slightly during later years. From 1997 onward, the proportion of consumer product-related injuries has remained relatively stable at about 46%.

Overview and Definitions

The United States Consumer Product Safety Commission (U.S. CPSC) tracks consumer product-related injuries and events primarily through the National Electronic Injury Surveillance System (NEISS)¹⁻⁴. In Canada, CHIRPP has a similar role to the NEISS. Since its inception in 1990, CHIRPP has collected information on the circumstances of injuries involving consumer products. The CHIRPP database contains a very large number of coding categories for products and is especially interested in including codes for products that fall under the mandate of Health Canada (under the scope of the *Hazardous Products Act*). Since the definition of a consumer product can vary, a listing follows of the consumer product categories used in this report.

Classification Categories for Consumer Products in CHIRPP*

Inclusions:

Home furnishings and accessories	Cleaning devices	Toothbrushes and oral hygiene products	Workshop items	Hydrocarbon fuels and storage containers
Floor coverings	Waste containers and equipment	Hair products and accessories	Hardware	Containers
Window coverings	Home safety devices	Eyewear and accessories	Adhesives	Animal equipment and supplies
Lights and lamps	Outdoor barbecues and accessories	Safety gear and protective devices	Electrical cords for appliances and lamps	Cycles, scooters and accessories
Linen/bedding	Outdoor/patio furniture	Therapeutic devices	Extension cords	Off-road vehicles, non-motorized boats, jet skis
Furniture and beds	Swimming pools (private) and accessories	Guns and other weapons, ammunition and explosives	Welding and soldering supplies and equipment	Automobile accessories and products
Stoves/ranges and ovens	Lawn mowers	Audio or audio visual equipment and accessories	Office/lab/school equipment and supplies	Carts
Other major kitchen appliances	Snow blowers and snow or ice removal equipment	Optical equipment	Sporting equipment (excluding specialized equipment)	Batteries
Tableware and cookware	Other garden equipment	Arts and crafts supplies	Aerobic exercise machines	Camping equipment
Knives and scissors	Garden accessories and products	Sewing equipment and accessories and fabrics	Darts	Filters
Kitchen gadgets and accessories	Baby articles and nursery products	Smoking and smoking accessories	Inline skates	Keys, key rings and chains
Small kitchen appliances	Toys	Paint and painting equipment	Skateboards	Magnets
Laundry/clothing care appliances and equipment	Playground equipment	Ladders	Snowboards	Paper products
Water heaters and water treatment equipment	Clothing	Power tools	Sleds/toboggans	Rope or string, bungee cords
Home heating equipment and accessories	Clothing/fashion accessories	Manual tools	Skis	Foam, sponge
Air cooling and air treatment equipment	Skin care products, cosmetics and accessories		Trampolines	Styrofoam products
Cleaning products			General classes of chemicals	
			Specific chemicals	

Exclusions:

Incinerators, waste compactors, garbage chutes	Dental devices and accessories	Industrial tools and equipment	Generators or power plants	Public use items
Garbage, rubbish, litter	Health and medical devices/apparatus	Logging equipment	Structural elements	Road vehicles and parts; motor homes and trailers
Public swimming pools	Medications/drugs	Electrical outlets/receptacles	Structures	Trains, aircraft, ships
Amusement rides and structures	Alcohol, street drugs, other abused products	Electrical wires and wiring systems	Building materials	Orphaned pieces of material of unknown product origin
Food	Farm equipment and produce	Circuit breakers/ground fault circuit interrupters	Plumbing	
Dentures			Windows	
Orthodontic braces			Doors	
			Animals	

* Note that not all products listed here fall under the jurisdiction of Health Canada.

The Hazardous Products Act (HPA)

The HPA prohibits the advertising, sale and importation of hazardous products. Of the consumer products profiled in this report, only blind cords and baby walkers are regulated under the HPA. Magnets as a stand alone product are unregulated; however, small parts (such as magnets) in toys are regulated. Please visit the following websites for more information on the HPA:

- www.healthcanada.gc.ca/cps
- laws.justice.gc.ca

Overview of product-related injuries

Table 4 illustrates the age and sex distribution and the CHIRPP injury severity indicators for product-related and non-product-related incidents. Children sustaining product-related injuries were younger (median age 6.9 years, IQR: 2.9-11.9) compared to children with other types of injuries (non-product; median age 9.4 years, IQR: 4.0-13.4).

Table 4. Age and sex distribution and CHIRPP injury severity indicators, CHIRPP, 0-19 years, both sexes combined, 1990-2007

Variable	Product-related (N = 543,596)		Other (non-product) (N = 1,069,607)		Overall (N = 1,613,203)	
	males	females	males	females	males	females
Median age (years)	7.4	6.3	9.7	9.0	8.9	8.1
Interquartile range (IQR)(years) ^a	3.1 - 12.4	2.7 - 11.1	4.3 - 13.6	3.6 - 13.1	3.8 - 13.3	3.3 - 12.5
% obs/admit ^b	7.4	6.3	7.9	7.4	7.7	7.1
% fractures	21.0	20.6	22.0	18.9	21.6	19.4
% CHI ^c	10.6	10.6	9.6	8.4	9.9	9.1

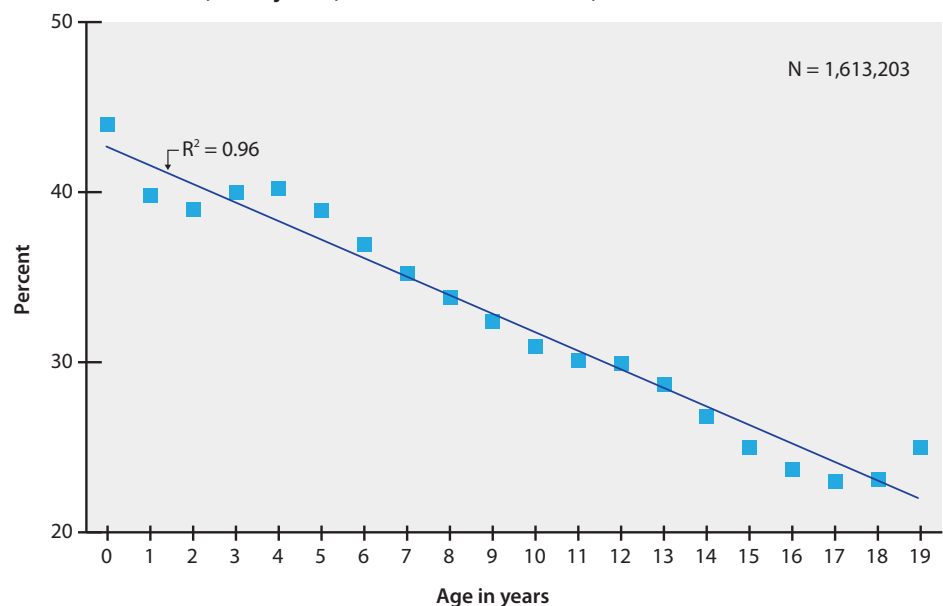
a. 25th to 75th percentile.

b. Patients held for prolonged observation or admitted to hospital.

c. Closed Head Injuries (CHI): minor closed head injuries, concussions and intracranial injuries.

Figure 13 shows that there was a linear decrease ($R^2=0.96$) in the proportion of injuries related to consumer products as the age of the child increased.

Figure 13. Proportion of injuries which were consumer product-related by age, CHIRPP, 0-19 years, both sexes combined, 1990-2007



Most frequent product categories

Table 5 highlights the proportion of CHIRPP cases where a consumer product was identified as being either a direct cause of the injury or a contributing factor. Of all the cases involving a consumer product in children under five years of age, the product was a direct cause of injury in nearly two-thirds of cases, and a contributing factor in one-third.

Table 5. Proportion of product-related cases where the direct cause or the contributing factor was a consumer product^a by age group, CHIRPP, 0-19 years, both sexes combined, 1990-2007

Age group	Direct Cause (%) ^b	Contributing Factor (%) ^c
0-4 years	62.8	33.4
5-9 years	53.3	36.9
10-14 years	54.4	33.7
15-19 years	61.2	28.3
Total	58.0	33.9

a. CHIRPP allows coding of multiple factors (contributing and direct); the calculations in this table use only the two main factor codes, and thus rows will not sum to 100%.

b. The product is the immediate cause of the injury (e.g. struck head on table).

c. The product is significantly involved in the injury event sequence (e.g. fell off bed and struck head on floor. In this example, the direct cause (the floor) is not a consumer product).

Table 6 details the most frequent classes of consumer products involved by age group. Furniture was involved at all age levels, and sports equipment emerged as an important factor among older children.

Table 6. Three most frequent categories of consumer product involved directly or as a contributing factor by age group, CHIRPP, 0-19 years, both sexes combined, 1990-2007

Age group	Most frequent product categories as direct cause ^a	Most frequent product categories as contributing factor ^b
0-4 years	1. Tables, 17.6% 2. Other furniture ^c , 15.3% 3. Toys, 7.1%	1. Other furniture ^c , 26.3% 2. Beds, 22.3% 3. Nursery products, 11.9%
5-9 years	1. Other sports equipment ^d , 15.4% 2. Other furniture ^c , 12.2% 3. Playground equipment, 8.5%	1. Playground equipment, 31.1% 2. Bicycles, 18.2% 3. Sleds/toboggans, 5.4%
10-14 years	1. Other sports equipment ^d , 43.9% 2. Other furniture ^c , 7.0% 3. Knives/scissors, 5.5%	1. Bicycles, 22.2% 2. Snowboard, 14.4% 3. Skateboard, 9.5%
15-19 years	1. Other sports equipment ^d , 39.3% 2. Knives/scissors, 11.1% 3. Other furniture ^c , 5.0%	1. Snowboard, 23.1% 2. Bicycles, 18.8% 3. Skateboard, 14.1%

a. The product is the immediate cause of the injury (e.g. struck head on table).

b. The product is significantly involved in the injury event sequence (e.g. fell off bed and struck head on floor. In this example, the direct cause (the floor) is not a consumer product).

c. All furniture *excluding* tables and beds.

d. All sports equipment *excluding* bicycles, sleds/toboggans, snowboards and skateboards.

References

1. U.S. Consumer Product Safety Commission [Online]. [cited 2009 Feb 25]. Available from: www.cpsc.gov
2. Mack KA, Gilchrist J, Ballesteros MF. Bunk bed-related injuries sustained by young children treated in emergency departments in the United States, 2001-2004, National Electronic Injury Surveillance System – All Injury Program. *Inj Prev.* 2007;13:137-40.
3. Vyrostek SB, Annest JL, Ryan GW. Surveillance for fatal and nonfatal injuries-United States, 2001. *MMWR Surveill Summ.* 2004;53:1-57.
4. Quinlan KP, Thompson MP, Annest JL, et al. Expanding the national electronic injury surveillance system to monitor all nonfatal injuries treated in U.S. hospital emergency departments. *Ann Emerg Med.* 1999;34:637-45.

5 ■ Bunk Beds

Bunk beds present numerous hazards to young children. A number of studies indicate that falls from the top bunk are a common occurrence, especially among children under 6 years of age. Injuries reported include skull fractures, concussions and injuries to internal organs¹⁻⁶. While falls are fairly common, there have been occasional reports of unintentional hangings due to snagged clothing⁷⁻⁸.

Bunk bed-related injuries have been tracked in CHIRPP since 1990. The following profile provides a brief overview of the Canadian experience of bunk bed-related injuries.

What the data show

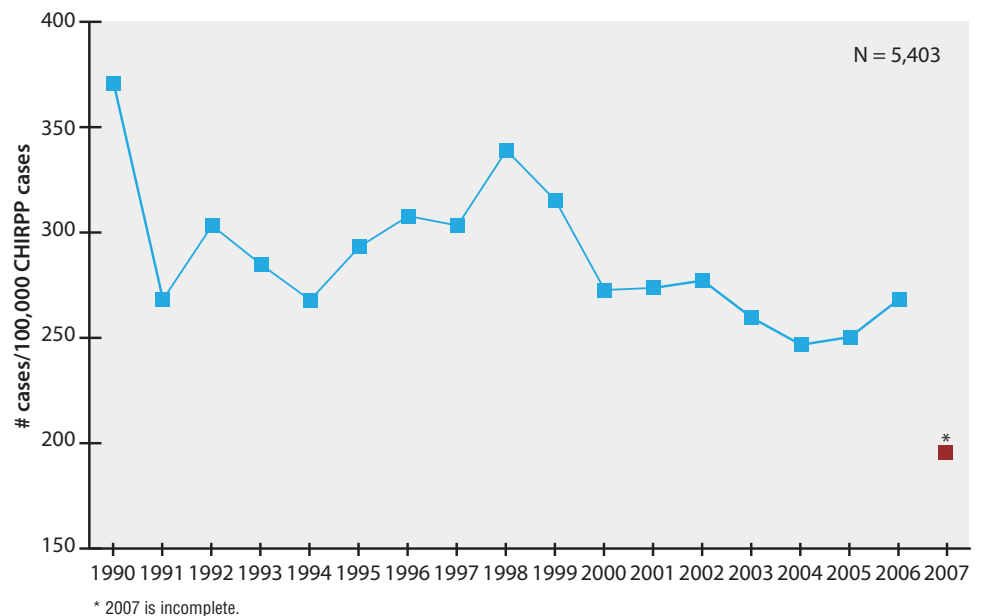
Figure 14 shows the proportion of bunk bed-related injuries by year for the entire CHIRPP database (1990 to 2007, all ages). There were a total of 5,403 bunk bed-related cases, averaging 305 cases per year. Because the data for 2007 were incomplete, 2007 data were not included in the average calculation. The dataset was separated into two eight-year periods to analyze changes over time. There has been a slight reduction in the proportion of cases in the period from 1999 to 2006 compared to 1990 to 1998 ($\chi^2=14.47$, $p<0.0005$). However, during the later time period (1999 to 2006), there was a significant increase in the proportion of fractures ($\chi^2=9.37$, $p<0.005$) and closed head injuries ($\chi^2=33.32$, $p<0.0001$), compared to the 1990 to 1998 period.

Circumstances of injury for top bunk bed-related cases

A subset of the data was analyzed in more detail. Overall, between 2002 and 2006, 1,545 injuries associated with bunk beds were identified. These 1,545 cases accounted for about 0.3% of all cases in the CHIRPP database, over the same time period. The remainder of this analysis will focus on the 934 (60.0%) cases involving the upper bunk.

The circumstances associated with injuries that involved the upper bunk were:

Figure 14. Injuries associated with bunk beds as a proportion of all CHIRPP records, CHIRPP, all ages, both sexes combined, 1990-2007*



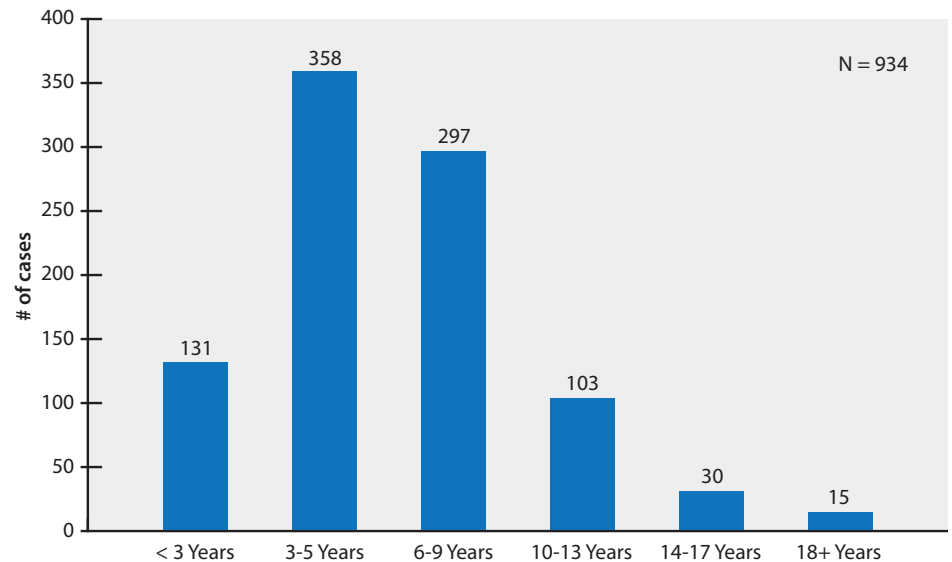
- Unintentional falls – (803 cases, 86.0%) that occurred in the following circumstances:
 - Playing (n = 250)
 - Sleeping and/or resting (n = 186)
 - Getting in or out of the top bunk (n = 99)
 - Reaching for an object or leaning over (n = 22)
 - Sitting on the bunk bed (n = 20)
 - Jumping on top bunk (n = 16)
 - Standing on top bunk (n = 5)
 - In 205 cases the circumstances of the fall were not specified
- Jumping off of the top bunk bed – 66 cases (7.1%)
- Overactive or inappropriate play – 18 cases (1.9%)
- Pushed or interfered with – 17 cases (1.8%)
- Struck ceiling or top bunk while jumping on a bunk – 6 cases (<1.0%)
- Hanging or strangulation – 3 cases (<1.0%)
- Body part entrapment – 2 cases (<1.0%)
- Struck against bunk bed – 1 case (<1.0%)
- Other – 18 cases (1.9%)

Age and sex distribution

The median age was five years with an interquartile range (25th to 75th percentiles) of three to eight years. Males sustained 56.4% of the injuries. As a proportion of all CHIRPP injury records for the same time period and age range, three to five year olds suffered injuries related to a top bunk most frequently (471.2/100,000 CHIRPP cases). Male patients sustained more injuries than female patients across all age groups except for 14 to 17 year olds.

Figure 15 illustrates the age distribution of children who sustained injuries involving the upper bunk.

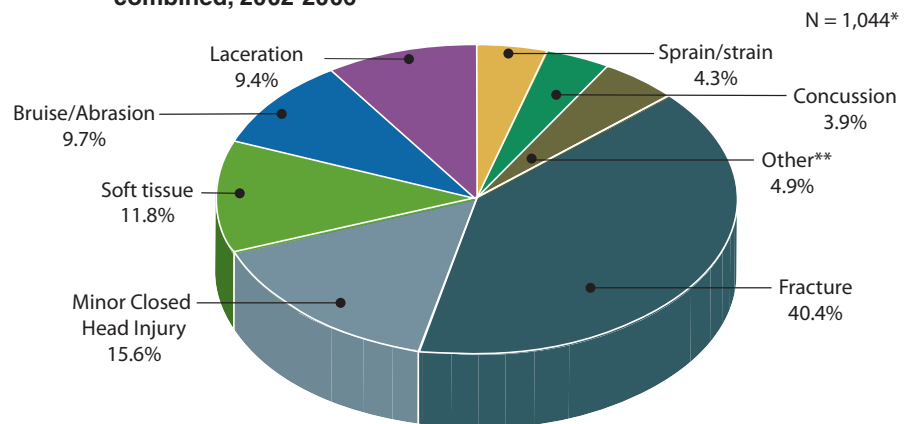
Figure 15. Top bunk-related injuries by age group, CHIRPP, all ages, both sexes combined, 2002-2006



Nature of injury

The most frequently injured body region was the upper extremity (39.4%) followed by the skull and brain (26.9%). CHIRPP allows the reporting of up to three injuries. Overall, the 934 injured persons sustained 1,044 injuries. Figure 16 shows the distribution of the nature of these injuries. About 40% of all injuries were fractures.

Figure 16. Nature of top bunk-related injuries, CHIRPP, all ages, both sexes combined, 2002-2006



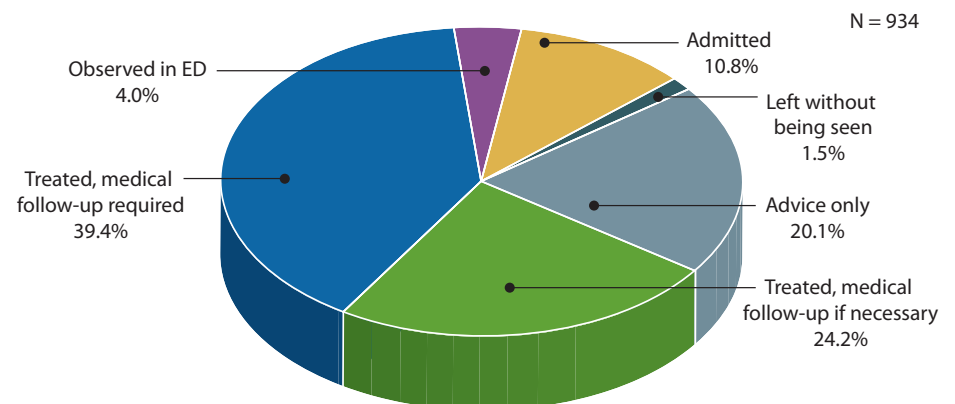
* Some patients suffered multiple injuries.

** Includes asphyxiation cases.

Treatment in the emergency department

Figure 17 outlines the treatment that patients received in the emergency department for injuries involving the upper bunk. About 11% of patients were admitted to hospital, which is about 1.6 times higher than the CHIRPP average.

Figure 17. Treatment received in the emergency department, top bunk-related injuries, CHIRPP, all ages, both sexes combined, 2002-2006



Opportunities for Action ■ Bunk Beds

Information for Consumers

(including parents, caregivers and professionals)

- The top bunk is not safe for children under six years of age.
- Allow only one person on the top bunk, and do not allow children to play on or under bunk beds unless the area under the bunk is designed by the manufacturer as a play area or study centre (i.e. loft bed).
- Teach children to use the ladder to get up or down. The ladder should always be attached securely to the bed. Do not remove it for any reason.
- Never tie ropes, cords or items such as belts for bathrobes or skipping ropes to any part of the bed.
- Ensure any belts, ties or sashes on children's bathrobes, dressing gowns, housecoats and robes are removed or stitched firmly to the centre back of the clothing.
- Do not leave or allow a child to go to sleep with toys or other objects on the mattress that may present a suffocation or strangulation hazard.
- Keep bunk beds away from window blinds and curtains with cords, as children can become entangled in them and possibly strangle.
- Check regularly to make sure the frame of the bed is sturdy.
- Make sure the mattress fits tightly against all four sides of the bed.
- Make sure the top bunk has guard rails on both sides of the bed in addition to the headboard and footboard. The bed should have all guard rails in place at all times, even if the bed is pushed up against a wall.
- When purchasing a bunk bed, make sure it meets the latest version of the ASTM F1427 standard. The current edition is 2007. If there are no labels indicating compliance with the latest ASTM F1427 standard, ask the store before you buy, or contact the manufacturer for more information.
- Check to ensure the bed comes with instructions for assembly and has a label with safety warnings. Read and follow these instructions and warnings carefully.
- Carpet or padding may be placed next to the bed.

American Society for Testing and Materials (ASTM) Technical Specifications:

- The sleeping surface should be at least 127mm (5 inches) below the top of the guardrails and end panels.
- Corner posts and ladder uprights should not extend more than 5mm (0.2 inches) above the upper edge of the bed (for example, the guardrails).

Compliance and Enforcement

Health Canada is encouraging industry to meet the current ASTM Standard – recently updated to include requirements to reduce the risk of strangulation when clothing is caught on parts of the bunk bed.

Regulatory Initiatives

Bunk beds remain an unregulated product under the *Hazardous Products Act*.

References

1. Mack KA, Gilchrist J, Ballesteros MF. Bunk bed-related injuries sustained by young children treated in emergency departments in the United States, 2001-2004, National Electronic Injury Surveillance System – All Injury Program. *Inj Prev.* 2007;13:137-40.
2. Khamalia A, Joshi P, Brussoni M, Raina P, Morrongiello B, Macarthur C. Risk factors for unintentional injuries due to falls in children aged 0-6 years: a systematic review. *Inj Prev.* 2006;12:378-81.
3. Belechri M, Petridou E, Trichopoulos D. Bunk versus conventional beds: a comparative assessment of fall injury risk. *J. Epidemiol. Community Health.* 2002;56:413-17.
4. The American Society for Testing and Materials. *Standard Consumer Safety Specification for Bunk Beds.* ASTM Designation: F 1427-01. June 2001
5. Mayr JM, Seebacher U, Lawrenz K, Pesendorfer P, Berghold A, Baradaran S. Bunk beds – a still underestimated risk for accidents in childhood? *Eur J Pediatr.* 2000;159(6):440-3.
6. Macgregor DM. Injuries associated with falls from beds. *Inj Prev.* 2000;6:291-2.
7. *Girl, 6, hanged after clothes caught in bunk bed.* CTV News Web site. [cited 2008 Apr 9]. Available from: www.ctv.ca
8. Community mourns child who died in bunk-bed mishap. *The Vancouver Province.* November 29, 2004; News Section, Page A3.

6 ■ Magnets

Since 2006, several global voluntary recalls of magnetic building toys and magnetic play sets have been undertaken by well-recognized toy manufacturers. In the United States, the death of a 20-month old child, and several cases of severe injuries requiring emergency surgery, raised awareness of a new product safety concern and prompted these toy recalls. When more than one powerful magnet, or one magnet and a magnetic object, is swallowed over a short period of time, the objects can attract one another while traveling through the intestines. The magnets can then twist the intestines and create a blockage and/or slowly tear through the intestinal walls, causing perforations. The results can be very serious and even fatal. Surgery is often required to remove the objects. In June and November of 2006, and again in September of 2008, Health Canada issued advisories to raise public awareness of this new hazard. Governments around the world are taking action to restrict the use of specific types and sizes of magnets in children's toys.

Magnet ingestions by children have been reported in the literature (e.g.¹⁻⁶). This report reviews data from CHIRPP to describe the Canadian experience of the hazards of small magnets in toys and other consumer products. It contains information on ingestion of magnets and other situations of potential harm.

What the data show

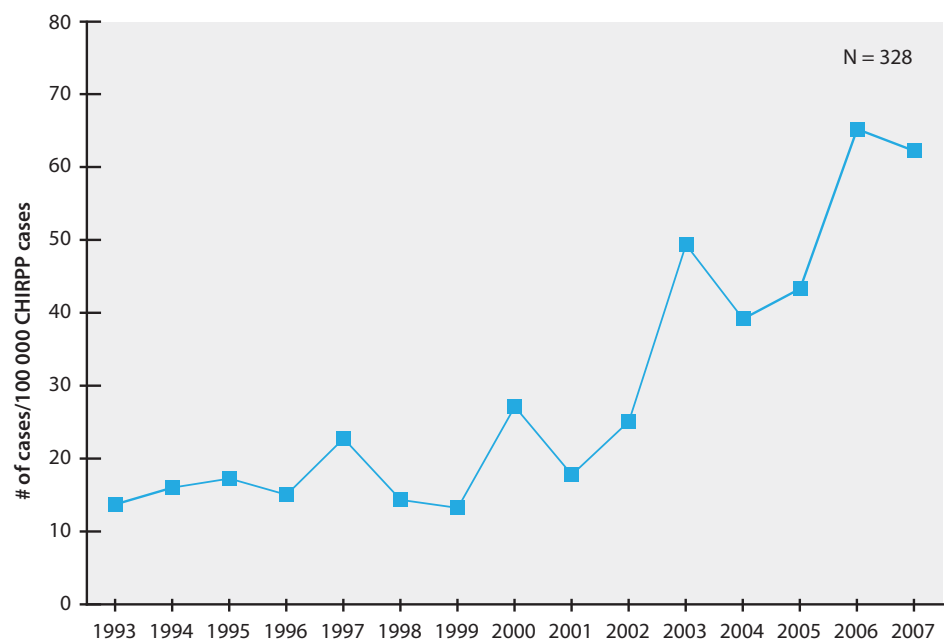
Overall, between 1993 and 2007 there were 328 CHIRPP cases of children aged 13 years or younger who sustained an injury associated with magnets. These cases represent less than 1% of all CHIRPP cases in the same age group and over the same time period. Figure 18 illustrates a sharp increase in the proportion of cases associated with magnets over time, as measured by the number of cases per 100,000 CHIRPP records.

Circumstances of injury

Overall, 75% of injuries associated with magnets occurred in the child's own home. There were 161 injuries where the source of the magnet was identified; 33% were parts from plastic toys (e.g. alphabet magnets), 24% were from magnetic earrings or nose rings, 28% were parts of other toys (e.g. toy building sets, travel games), and 15% were other magnet types.

It should be noted that the CHIRPP cases do not typically provide details regarding the magnet characteristics, such as strength, and provide limited information on the number of magnets involved.

Figure 18. Injuries associated with magnets as a proportion of all CHIRPP records for children aged 13 years and younger, CHIRPP, both sexes combined, 1993-2007



The circumstances leading to these injuries were:

- Ingestion of magnet – 178 cases (54.3%)
- Magnet inserted up nose – 109 cases (33.2%)
 - 42% of these were children 10 to 13 years of age (e.g. magnetic nose rings)
- External injury due to magnet, no ingestion – 18 cases (5.5%)
- Possible ingestion of magnet – 16 cases (4.9%)
- Magnet inserted into ear – 5 cases (1.5%)
- Other or unknown – 2 cases (<1.0%)

Age and sex distribution

Figure 19 provides a summary of the age and sex distribution of the 178 children who ingested magnets; nearly 40% of ingestions occurred in children two to four years old, followed by nearly 30% in older children aged five to nine years.

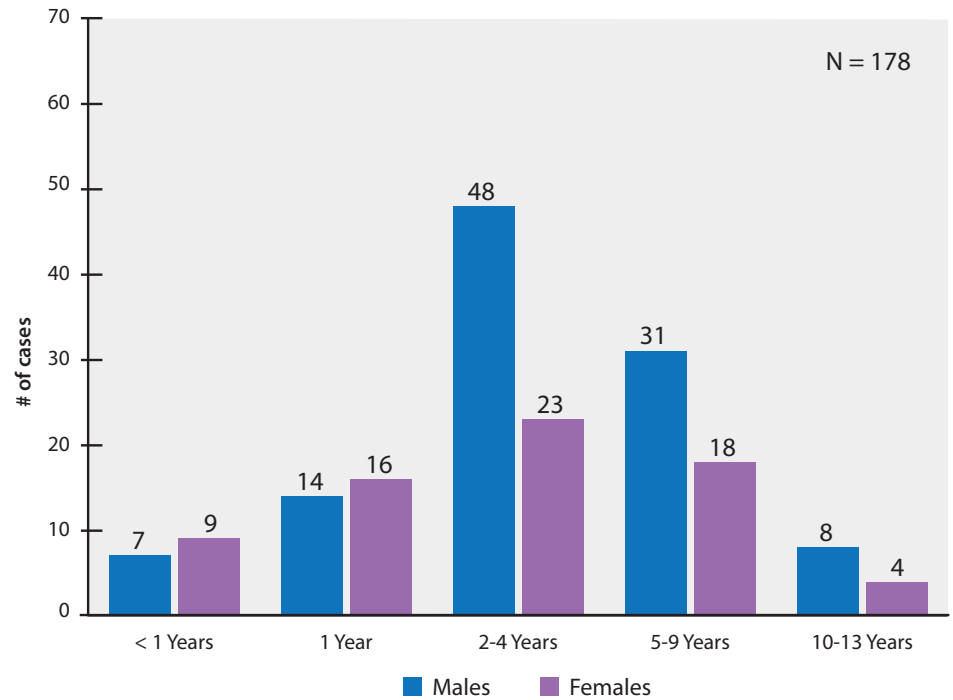
Nature of Injury

Overall, 85% of all cases involved the magnet as a foreign body; 51% of these were in the abdomen, and 38% were in the nose.

Multiple Ingestions

Of the 178 magnet ingestions, there were 18 cases which involved ingestion of more than 1 magnet.

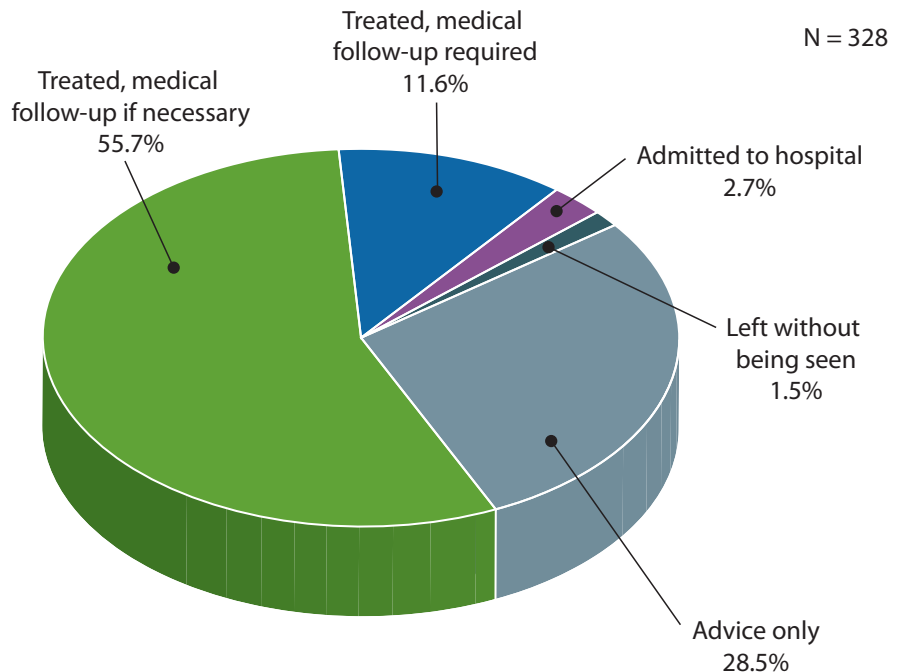
Figure 19. Injuries associated with ingestion of magnets, by sex and age, CHIRPP, 13 years of age and under, both sexes combined, 1993-2007



Treatment in the emergency department

Figure 20 describes the treatment received in the emergency department for injuries associated with magnets. The proportion of admitted cases (2.7%) was about half of the CHIRPP average of 5.0% for the same age group and time period.

Figure 20. Injuries associated with magnets, treatment in emergency department, CHIRPP, 13 years of age or younger, both sexes combined, 1993-2007



Opportunities for Action ■ Magnets

Information for Consumers

(including parents, caregivers and professionals)

- Swallowed magnets can attract one another across the intestines and cause serious injury or death. Small powerful magnets used in toys, jewellery and other household items may pose a hazard if the item containing the magnet, or the magnet itself, is small enough to be swallowed.
- Teach children **of all ages** that small magnets or small items that contain magnets should never be placed in their mouths. Carefully supervise children around products containing magnets.
- Keep products with small magnets out of the reach of children **of any age** if they still tend to put non-food items in their mouths.
- Seek immediate medical care for any child who has swallowed, or is suspected of having swallowed, one or more magnets.
- Check toys and consumer products often to make sure they are in good condition. Look for magnets that may have detached from toys or other products and immediately remove any loose magnets from the play area.
- Follow the safety warnings and manufacturer's age recommendations on children's toys. Keep toys intended for older children out of the reach of younger children.

Compliance and Enforcement

Health Canada regularly tests toys for compliance with the legislated toy safety requirements under the *Hazardous Products Act*. A compliance and enforcement project targeting magnetic toys for children who are less than three years of age is currently underway. Additionally, Health Canada investigates incidents and complaints on toy safety issues and provides timely information to advise the public of known hazards.

Regulatory Initiatives

The *Hazardous Products Act* requires that toys for children under three years of age must be above a minimum overall size and must not be easily broken into small components that could pose an ingestion, aspiration or choking hazard. Therefore, the Act provides protection to young children with respect to small magnets in toys. The use of small powerful magnets in toys for older children is presently unregulated; however, in the near future Health Canada expects to issue a proposal for the restriction of small magnets in toys for children of all ages. In the meantime, Health Canada continues to inform and educate the public on this new toy safety issue through release of advisories, information bulletins and distribution of posters to medical facilities.

References

1. Schierling S, Snyder SK, Custer M, Pohl JF, Easley D. Magnet ingestion. *J Pediatr*. 2008;152, 294.
2. Centers for Disease Control and Prevention. Gastrointestinal injuries from magnet ingestion in children, United States, 2003-2006. *MMWR Morb Mortal Wkly Rep*. 2006;55:1296-1300.
3. Uchida K, Otake K, Iwata T, Watanabe H, Inoue M, Hatada T, et al. Ingestion of multiple magnets: hazardous foreign bodies for children. *Pediatr Radiol*. 2006;36:263-4.
4. Liu S, de Blacam C, Lim F-Y, Mattei P, Mamula P. Magnetic foreign body ingestions leading to duodenocolonic fistula. *J Pediatr Gastroenterol Nutr*. 2005;41(5):670-72.
5. Cauchi JA, Shawis RN. Multiple magnet ingestion and gastrointestinal morbidity. *Arch Dis Child*. 2002;87:539-40.
6. Lee S, Beck N, Kim H. Mischievous magnets: unexpected health hazard in children. *J Pediatr Surg*. 1996;31:1694-5.

7 ■ Baby Walkers

Studies involving baby walker injuries have been reported in the literature for over 20 years (e.g. ¹⁻⁹). During this time, Health Canada has issued warnings about the hazards posed by baby walkers on wheels. Following these warnings, the Canadian Juvenile Products Association adopted a voluntary ban on retail sales of baby walkers in 1989. When the Association ceased to exist in 1997, retail sales of baby walkers started to increase. In April 2004, Health Canada acted to ban the sale, advertisement, and importation of baby walkers in Canada. A call for this ban had long been advocated by paediatricians and injury prevention experts who recognized the risks involved. In order to establish the dangers posed by baby walkers on wheels, Health Canada scientists gathered evidence from a variety of sources including the database of CHIRPP.

CHIRPP data revealed many serious injuries involving baby walkers including head injuries to infants who toppled down stairs and burns to infants who used baby walkers to access containers of hot liquids. The number of baby walker injuries in CHIRPP has declined over the past decade. These injuries have not yet been eliminated, in spite of the ongoing efforts of Health Canada and organizations such as Safe Kids Canada to inform consumers and increase public awareness. Most recent injuries have been traced to second-hand baby walkers and illegal importations. The CHIRPP program will continue to monitor injuries and trends.

Original Report (1990-2003, N = 2,018):

A thorough search of the entire CHIRPP database for injuries involving baby walkers resulted in 2,018 records for children aged five to 14 months inclusive, between 1990 and 2003.

Updated Report (1990-2007, N = 2,192):

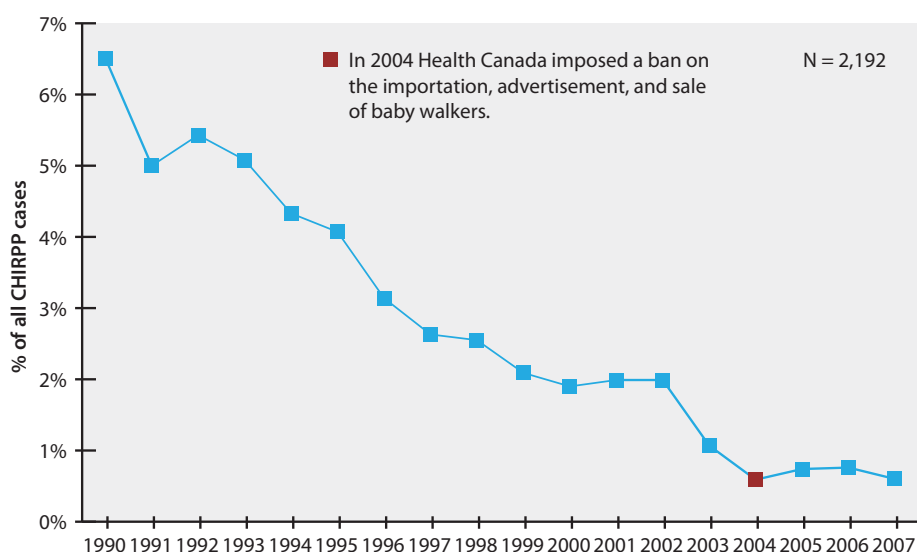
An updated search of the CHIRPP database was conducted in December 2008 using the same search criteria. The updated search identified an additional 182 records resulting in an updated total of 2,192 cases of injuries associated with baby walkers for children between the ages of five and 14 months for the years 1990 to 2007.

Injuries over time

Updated Report (1990-2007, N = 2,192)

Figure 21 illustrates injuries involving baby walkers as a percentage of all CHIRPP records for children aged five to 14 months between April 1990 and 2007. Injuries associated with baby walkers accounted for 2.6% of all injuries among five to 14 month old children during this 18-year period. The percentage of baby walker injuries among all CHIRPP injuries fell from 6.5% in 1990 to 1.9% in 2000. Percentages remained stable until 2002 and dropped to their lowest level of 0.6% in 2004, the year that Health Canada imposed a ban on importation and sales of baby walkers. Following 2004, no clear trend has been established, with percentages of 0.7% in 2006 and 0.6% in 2007.

Figure 21. Injuries associated with baby walkers as a percentage of all CHIRPP records for children aged 5-14 months, CHIRPP, both sexes combined, 1990*-2007



What the data show

Summary of the original report (1990-2003, N = 2,018)

Baby walker injuries were most frequent among very young children aged seven to 10 months, who experienced three-quarters of the baby walker injuries. More than half of the injured children were male (57.1%). Almost all of the injuries, 93.0%, occurred in the child's own home. Most of the circumstances, 85.5%, were the result of a child in a baby walker falling down stairs. Injuries to the head accounted for most of the injuries suffered by children who fell down stairs. The percentage of children who were admitted to hospital with injuries involving baby walkers was 8.2%.

Circumstances of injury

The circumstances leading to injuries were:

- Child in a baby walker fell down stairs – 1,726 cases (85.5%)
- Child in a baby walker falls from a height (e.g. fall off decks or porches) – 4 cases (<1.0%)
- Child in a walker falls on the same level – 145 cases (7.2%)

Among children injured in falls on the same level, 52.4% fell from a baby walker onto the floor.

- Child in walker was able to reach a hazardous object or to pull something down on him or herself – 98 cases (4.9%)
- Other circumstances – 34 cases (1.7%)

This category included events such as walker collapse leading to pinched fingers; falls by young children outside a walker but pushing it or leaning on it for support; climbing on a baby walker; falls from a walker being carried by another person, either because the walker broke or because the other person fell; and injuries that occurred while being placed in the walker or pushed in the walker by another person.

- Unclear – 11 cases (<1.0%)

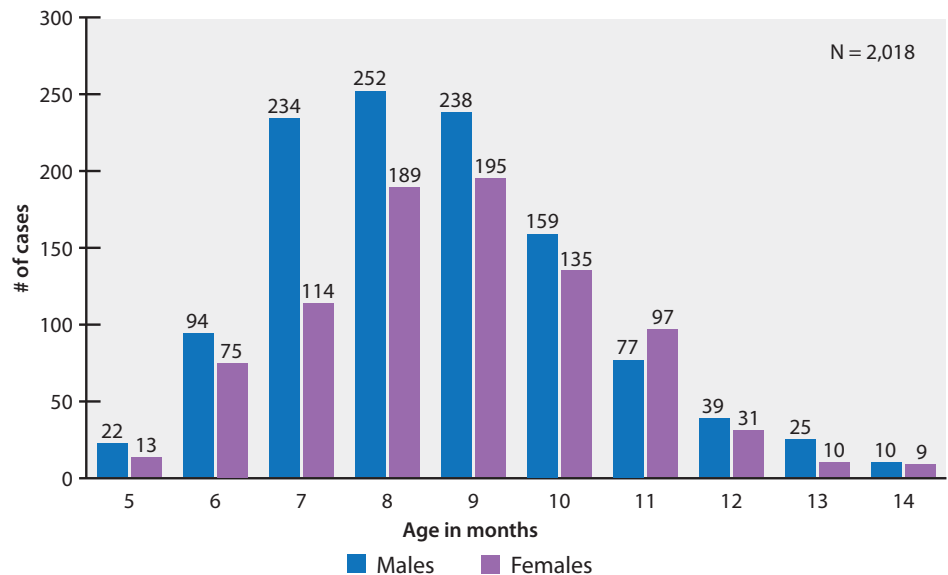
Age and sex distribution

Children aged eight to nine months experienced 43% of the injuries involving baby walkers. The majority of injuries involving baby walkers, 57%, were sustained by young boys. Figure 22 illustrates the distribution by age and sex.

Baby Walkers

have been banned in Canada since 2004.

Figure 22. Injuries involving baby walkers by age and sex, CHIRPP, children aged 5-14 months, 1990-2003

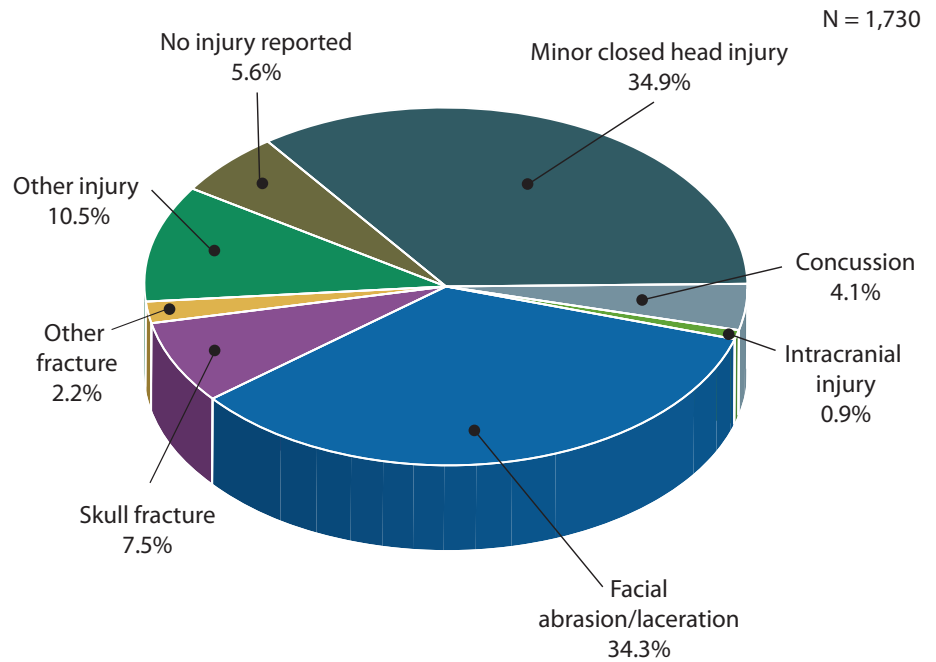


Nature of injury

Of the 1,730 children in walkers who fell down stairs or fell from a height, 88.8% sustained injuries to the head or face (including eye and dental injuries grouped as "Other injury") (see Figure 23). The corresponding percentage of head or face injuries to children who fell in or from a walker on the level was 85.5%. Among children who had falls that were not related to walkers 76.5% of the injuries affected the head or face area.

Intracranial injury was reported for 16 children (0.9%) who fell down stairs or from a height. The percentage appears low but these very serious injuries occurred more than four times more frequently among falls involving baby walkers than among other types of falls in the CHIRPP database (not related to baby walkers) for children of the same age.

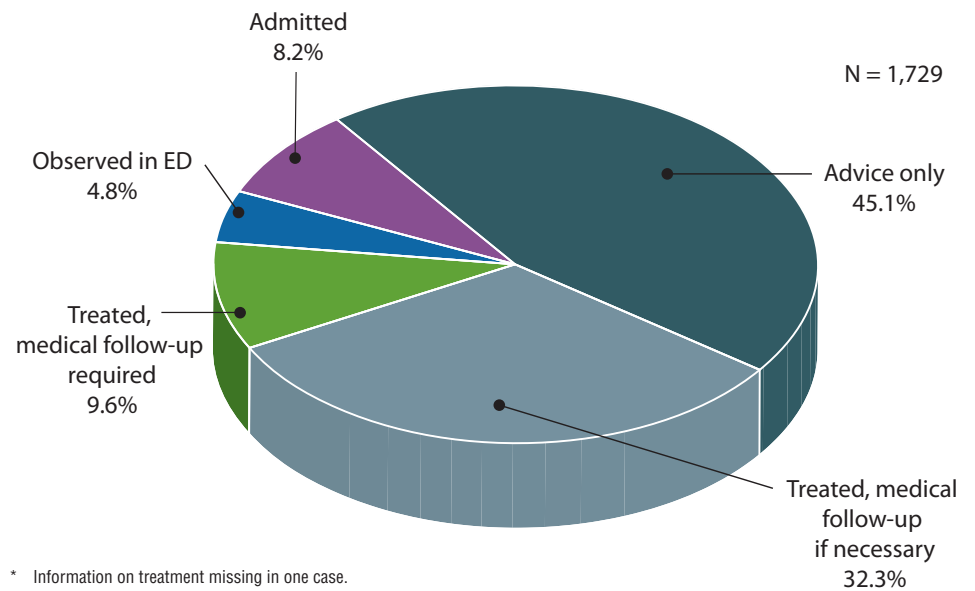
Figure 23. Injuries sustained by children who fell in or from baby walkers down stairs or from a height, CHIRPP, children aged 5-14 months, both sexes combined, 1990-2003



Treatment in the emergency department

The proportion of children admitted to hospital after falls down stairs or from a height (n = 1,730) while in baby walkers was 8.2% (see Figure 24). This percentage was more than double that for children who fell from a walker on the same level (3.4%).

Figure 24. Treatment received in the emergency department by children who fell in or from baby walkers down stairs or from a height*, CHIRPP, children aged 5-14 months, both sexes combined, 1990-2003



* Information on treatment missing in one case.

Opportunities for Action ■ Baby Walkers

Information for Consumers

(including parents, caregivers and professionals)

- **Baby walkers are banned in Canada.** It is a criminal offence to sell, advertise, or import new or used baby walkers, even for your own use. It is also a criminal offence to give them away.
- Anyone with a baby walker is advised to destroy and discard it so that it cannot be used.
- This prohibition also applies to the sale of baby walkers as second-hand items. Baby walkers may not be sold at flea markets or garage sales.

Compliance and Enforcement

- Health Canada inspectors work with the Canada Border Services Agency to identify and refuse personal importation of baby walkers at the border.
- Health Canada inspectors also work with many of the Canadian internet sales websites to prevent the posting of notices offering baby walkers for sale or trade.
- Consumer education continues throughout the year, particularly during garage sale season, to ensure that vendors are aware of the prohibition.
- Compliance and enforcement efforts include cyclical inspections at second-hand stores to identify and remove any baby walkers for sale and to arrange for their destruction and disposal.

Regulatory Initiatives

On March 22, 2004 a ban on the sale, advertisement, and importation of baby walkers became law and was followed by a formal announcement on April 7, 2004 when the law was published in **Part II** of the *Canada Gazette*.

On May 21, 2004, a distributor of baby walkers requested the Minister of Health to refer the governmental order banning baby walkers for review. On June 2, 2006, as required by law, the Minister of Health established the Board of Review to conduct an inquiry into the nature and characteristics of baby walkers and to submit a report and recommendations. The Board of Review unanimously agreed that the ban implemented by the Government of Canada on the advertising, sale, and importation of baby walkers was justified on the basis of the available evidence.

References

1. Sabir H, Mayatepek E, Schaper J, Tibussek D. Baby-walkers: an avoidable source of hazard. *The Lancet*. 2008; 372 (9654): 2000.
2. Rodgers GB, Leland EW. A retrospective benefit-cost analysis of the 1997 stair-fall requirements for baby walkers. *Accid Anal and Prev*. 2008;40:61-68.
3. Shields BJ, Smith GA. Success in the prevention of infant walker-related injuries: an analysis of national data 1990-2001. *Paediatrics*. 2006;117:452-9.
4. Rodgers GB, Leland EW. An evaluation of the effectiveness of a baby walker safety standard to prevent stair-fall injuries. *J Safety Res*. 2005;36:327-32.
5. DiLillo D, Damashek A, Peterson L. Maternal use of baby walkers with young children: recent trends and possible alternatives. *Inj Prev*. 2001;7:221-7.
6. American Academy of Pediatrics, Committee on Injury and Poison Prevention, 2001. Injuries associated with infant walkers. *Pediatrics*. 108(3):790-92.
7. Cassell OC, Hubble M, Milling MA, Dickson WA. Baby walkers – still a major cause of infant burns. *Burns*. 1997;23(5):451-3.
8. Boudreault M. *Report on Baby Walker Incidents*. U.S. Consumer Product Safety Commission, Bethesda, MD. 1995.
9. Rieder MJ, Schwartz C, Newman J. Patterns of walker use and walker injury. *Pediatrics*. 1986;78(3):488-93.

8 ■ Other Household Products

There are numerous products in and around the home that present an injury risk to infants, children, and youth. Some are “hidden” hazards (e.g. televisions, blind cords) and others are more apparent (e.g. backyard trampolines, bunk beds). Some hazards are frequent, others rare, but with potentially severe injury consequences. The following sections present CHIRPP injury profiles related to:

- **Furniture, televisions and appliances**
- **Trampolines**
- **Bath seats**
- **Drapery and blind cords**

Furniture, televisions and appliances

With the exception of beds (see Section 5 – bunk beds) and televisions (TVs) ¹⁻⁵, there is sparse literature on other furniture and appliance related injuries (e.g. ⁶⁻⁹). As was displayed in Table 6 (Section 4), furniture is a frequent factor in injuries suffered by children and youth of all ages. Furniture, beds, televisions and large appliances are ubiquitous in domestic settings. Thus, children and youth are highly exposed to such products, and related injury patterns are useful to inform prevention and mitigation efforts. Different types of furniture will present specific injury mechanisms that may be reflected in the injury severity. Some pieces of furniture/appliances have a propensity to tip (e.g. TVs, bookcases, dressers, wall units, water coolers), while others are more likely to be run into (e.g. tables, washers and dryers), while still others are associated with jumps and falls (e.g. bunk beds, chairs, sofas). Furniture with glass presents an additional layer of hazard.

The purpose of this broad overview is to profile the Canadian experience with regards to furniture, television and large appliance-related injuries and to identify specific issues for further study.

What the data show

Table 7 presents a detailed breakdown of household furniture-, television-, and appliance-related injuries among children and youth under 20 years of age. In CHIRPP, such injuries were fairly stable year-over-year, averaging about 9,000 cases annually, and representing 23.7% of all injuries which occurred in and around the home. Overall, about 71% of all furniture/appliance-related incidents involved children under five years old (but this varied somewhat by age) and the male to female ratio was 10:8.

Glass furniture

Glass furniture was involved in 4.2% of all cases (where glass construction was possible). Glass involvement accounted for 8.4% of all wall unit-related cases, 7.8% of all cabinet-related incidents and 5.3% of all table-related events.

Nature of injury

Compared to all domestic incidents in CHIRPP, furniture/appliance-related cases had a higher proportion of closed head injuries ($p < 0.0001$) but a lower proportion of patients were admitted to hospital ($p < 0.005$). Beds, tables, and chairs account for a large proportion (72.2%) of all furniture/appliance-related injuries. Bunk beds and sofas/couches accounted for the largest proportion of fractures, and bunk bed-related injuries resulted in the largest proportion of hospital admissions.

Minor injuries

Overall, 38% of all injuries were minor (bruises/abrasions, lacerations). Minor injuries accounted for 67% of all table-related injuries, 51% of all chair-related cases, 41% of all bed-related incidents, and 32% of all sofa/couch events.

Serious injuries

Serious injuries accounted for about 1% of all injuries: there were a total of 1,072 skull fractures, 211 traumatic amputations (mostly toes and fingers), 167 intracranial injuries, and 76 internal injuries. Of all the skull fractures, 39% were related to conventional beds* and 19.7% were associated

with tables. Of the traumatic amputations, 40.7% involved chairs, and 14.7% were associated with tables. Conventional beds accounted for 43% of all intracranial injuries, and sofas/couches, 13.2%. Chairs and conventional beds accounted for approximately half (25% each) of all internal injuries.

Classification

The CHIRPP database (1990 to 2007) was searched (using CHIRPP product codes) for injuries related to furniture, beds, TVs, and large appliances occurring in a private residence among children and youth less than 20 years of age. Extensive bilingual narrative analysis was used to refine the results of the preliminary search.

In many cases multiple pieces of furniture were involved in an injury event. Incidents were classified according to the piece of furniture most responsible for the injury. For example “FELL OFF CHAIR, HIT HEAD ON TABLE” would be classified as a table-related incident. “FELL OFF BUNK BED, HIT HEAD ON NIGHT TABLE” would be classified as a bunk bed-related injury (due to the fall height). The exception to this rule is for TV’s – e.g. “CHILD CLIMBING ON TV, FELL OFF AND STRUCK HEAD ON TABLE” would be classified as a TV-related case (since it is a possible near-miss to a potentially more serious TV tip-over).

Exclusions

Due to the specialized nature and narrow age range, nursery furniture (high chairs, playpens, change tables, bouncy/booster/car seats, cribs and bassinets) is excluded. Other exclusions are detailed in the Table 7 footnotes.

Television and Appliance Hazards

Whereas beds, tables and chairs and other furniture usually involve familiar injury mechanisms (impact, jump/fall), appliances and televisions often present an additional layer of hazards (beyond the electrical hazard which is common to all appliances). Stoves involve burns, entrapments, and tip-overs (e.g. “CHILD STANDS ON OPEN OVEN DOOR”). Fridges present item fall-out scenarios (e.g. “CHILD OPENS FREEZER DOOR, FROZEN TURKEY FALLS OUT AND STRIKES HIM ON THE HEAD”) and provide accessibility to magnets (ingestions). Dishwashers expose children to knives as they assist their parents in emptying the unit. A well-known hazard (to emergency department physicians) involving TVs, are tip-overs. These situations often involve very serious head injuries and some cases have been fatal. Approximately 60% of all TV-related incidents were tip-overs and many of the other 40% as well as the television stand impacts could be seen as “near-miss” cases of TVs toppling.

* It must be kept in mind that although conventional beds represent a large percentage of cases of serious injuries, when expressed as a proportion of all bed-type cases, bunk beds are associated with more severe injuries.

Table 7. Domestic furniture, television and large appliance-related injuries, CHIRPP, 0-19 years, both sexes combined, 1990-2007

Furniture Type	Number of Cases (%)	% Closed Head Injury ^a	% Fracture ^b	% Observed/Admitted ^c	Median Age (year)	Interquartile Range (year)	
						25 th %ile	75 th %ile
Beds^d	54,826 (33.8)						
conventional	50,097 (30.9)	19.0	18.1	5.0	3.1	1.6	5.5
bunk, loft	4,729 (2.9)	18.6	32.0	11.6	5.2	3.3	7.8
Tables^e	34,982 (21.6)	13.8	6.3	2.4	2.8	1.6	4.7
Chairs, other seating^f	27,298 (16.8)	15.0	18.0	4.4	2.9	1.7	5.3
Couch, sofa^g	20,407 (12.6)	16.5	25.0	5.4	2.9	1.7	5.2
Dressers, bureaus^h	5,014 (3.1)	13.5	9.5	3.2	3.8	2.3	6.5
TVs & stands	3,461 (2.1)	13.8	10.3	4.1	2.8	1.8	4.8
TV ⁱ	2,162 (1.3)	14.2	14.0	5.8	3.0	1.8	5.2
TV stand ^j	1,299 (0.8)	13.0	4.0	1.4	2.5	1.5	4.3
Cabinets, cupboards^k	3,021 (1.9)	11.1	5.7	1.8	3.8	1.8	7.7
Bookcases, shelves^l	2,610 (1.6)	12.9	7.5	2.4	3.8	2.1	6.8
Desks^m	1,839 (1.1)	11.5	8.7	1.5	4.8	2.5	8.9
Refrigerators, freezersⁿ	1,259 (<1.0)	11.2	11.8	4.0	5.7	2.4	10.8
Fridge, freezer magnets	1212 (<1.0) 47						
Washers, dishwashers, dryers^o	971 (<1.0)	12.0	10.9	7.6	3.5	1.5	8.2
Wall, entertainment units^p	783 (<1.0)	13.9	3.3	1.7	2.6	1.6	4.6
Stove, oven^q	686 (<1.0)	10.1	6.1	7.0	3.1	1.5	8.3
Filing cabinets^r	108 (<1.0)	5.6	6.5	2.8	4.5	1.7	8.8
Computer monitors^s	16 (<1.0)	0.0	18.8	6.3	5.5	2.3	10.5
Water coolers^t	14 (<1.0)	14.3	7.1	0.0	3.4	1.8	11.4
Other furniture^u	5,038 (3.1)	9.8	9.5	2.2	3.6	1.9	7.2
Total	162,333 (100.0)	15.8	15.4	4.3	3.1	1.7	5.5
Total Domestic^v	683,913	10.0	15.4	6.7	4.3	2.0	9.1

- a. Closed head injuries (minor closed head injuries, concussions, intracranial).
- b. Percentage of all cases that are fractures.
- c. Percentage of cases admitted to hospital or held in emergency for prolonged observation.
- d. Conventional beds: Includes frames, mattresses; Excludes water and other special beds. Bunk beds: Includes loft beds and ladder-related cases.
- e. Tables: Includes coffee tables, end tables, glass tables, night tables, "TV" tables (i.e. TV food trays), kitchen tables, dining room tables. Excludes TV stands and carts and TV tip-over cases, picnic tables, ping pong tables, pool tables, toy/play tables.
- f. Chairs: Includes kitchen/dining, armchairs, upholstered chairs, hard wood chairs, benches (excluding TV tip-overs), stools, ottomans, hassocks, foot rests. Excludes: bean bag chairs, children's chairs, infant chairs, foot step (2-3 step ladder); Using chair to get to another hazard (poisonings, stove burns).
- g. Includes chesterfields and love seats.
- h. Includes chest of drawers. Excludes TV tip-overs.
- i. TV: Includes tip-overs (with the associated furniture), falls, drops, struck against, climbing onto (and falling), objects falling off of, tripping on TV wires/cable and electrical incidents. Excludes Impacts with TV stands and carts that *did not* result in a TV tip-over; antennas and remote controls.
- j. TV stands and carts: It is not always explicit in the narrative whether a TV was on the stand/cart when the impact occurred. Nevertheless, these cases provide an indication of potential "near-misses" of TV tip-overs.
- k. Includes microwave stands, armoires, storage cabinets, pantries. Excludes TV tip-over cases, filing cabinets, medicine cabinets, kitchen cabinets/cupboards (secured to the house structure).
- l. Bookcases/shelves: Excludes TV tip-over cases.
- m. Office desks, computer desks; excludes TV tip-overs and computer monitor tip-overs.
- n. Includes struck by items falling out upon opening of door and magnet accessibility.
- o. Includes modern and old-style (wringer) washing machines, both top loading and front loading.
- p. Wall/Entertainment units: Includes stereo cabinets. Excludes TV tip-over cases.
- q. Excludes microwave ovens.
- r. Steel construction, two or more drawers.
- s. Includes tip-overs, impacts and electrical.
- t. Includes tip-overs, impacts and electrical.
- u. Other furniture: Includes chests and trunks, shoe and other specialized racks, standing floor speakers, pianos, furniture (not further specified) and drawers and other furniture components of unknown origin.
- v. Domestic refers to all injuries occurring in and around a private residence.

Opportunities for Action ■ Furniture, Televisions and Appliances

Information for Consumers

(including parents, caregivers and professionals)

General Household Hazards

- Always supervise children in the home and teach them not to climb on or hang from furniture.
- Choose storage furniture, such as bookcases, cabinets, television stands, and dressers, with a wide and stable base that sits directly on the floor. Models with legs or wheels are more likely to tip over.
- Attach furniture to the wall using angle braces, anchors, or safety straps. If these items come with the product, follow the manufacturer's instructions for installation. Secure to a dry-wall stud if possible.
- Place televisions far back on low stable furniture that is designed to hold the weight and size of the television. Attach the television to the stand if possible.
- Keep electric cords behind furniture where children cannot reach them.
- Do not place items that may appeal to a child, such as toys, plants and remote controls, on top of a television or tall furniture.

Dressers

Children may climb dressers because the drawers can be opened and used as steps. Opened drawers make a dresser unstable, which increases the chance of it tipping over.

- Do not place televisions on dressers. They are not designed to hold televisions.
- Open only one drawer at a time and close all drawers when not in use.
- Install locking devices on each drawer.
- Place heavier items, such as books, in lower drawers.
- When buying a dresser, look for one that meets the requirements of the current ASTM International Standard Safety Specification.

Compliance and Enforcement

Health Canada is encouraging industry to meet the current ASTM Standard for Chests, Door Chests, and Dressers.

Regulatory Initiatives

Furniture remains an unregulated product under the *Hazardous Products Act*.

Trampolines

Trampoline-related injuries have become increasingly common in recent years due to the availability of relatively low-cost backyard models. Lack of supervision and the potential for high impact scenarios and neurotrauma has resulted in this activity gaining the attention of injury researchers (e.g. ¹⁰⁻¹⁶).

Surveillance of these injuries is ongoing, and CHIRPP is showing an increase in the proportion of cases in recent years ($p < 0.0001$).

What the data show

Currently (1990-2007) 8,658 cases (all ages) have been identified in CHIRPP with an average annual percent increase of 15.4% ($p < 0.0001$).

A five-year sub-sample (1999 to 2003; $n = 2,705$) of cases from CHIRPP (only cases where a large trampoline on the grounds of a private residence was reported) revealed a median age of 10.1 years (interquartile range: seven to 12.8 years) and a male-to-female ratio of 10:9.

Table 8 details the direct cause of the trampoline injury. In over half of the cases, the trampoline itself was the immediate cause of the injury. Table 9 details the CHIRPP injury severity indicators (fractures, closed head injuries, and hospital admissions) for the four most frequent direct causes. Surface impacts (surrounding the trampoline) were the most severe, generating almost two-thirds of the fractures and one in five patients admitted to hospital.

Table 8. Backyard trampoline-related injuries, direct cause of injury, CHIRPP, all ages, both sexes combined, 1999-2003

Direct cause of injury ^a	Number of Cases (%)
Trampoline ^b	1,418 (52.4)
Surface ^c	781 (28.9)
Other person ^d	386 (14.3)
Injured person ^e	73 (2.7)
Structure ^f	24 (0.9)
Other ^g	13 (0.5)
Unknown	10 (0.4)
Total	2,705 (100.0)

- a. Direct cause of the injury is the structure, person, or other factor that caused the injury.
- b. These include cases where the patients overexerted themselves (e.g. ankle sprains, bad landings), or landed on the mat, frame, springs, etc.
- c. Other than trampoline mat (i.e. ground, cement, patio stones, gravel, grass).
- d. Impact with other person while multiple people jumping on the trampoline.
- e. E.g. patients kneed themselves in the mouth while jumping on trampoline.
- f. Includes balconies, fences, sheds and lawn furniture.
- g. Includes toys on the trampoline or ground, jumping with popsicle sticks in mouth-fell, pieces of metal on the ground.

Table 9. Backyard trampoline injuries, proportion of fractures, closed head injuries and hospital admissions for the main direct causes of injury, CHIRPP, all ages, both sexes combined, 1999-2003

Direct cause	Number of Cases	% Fractures	% Closed Head Injury ^a	% Admitted to Hospital
Trampoline	1,418	41.7	2.0	9.9
Surface	781	64.7	2.9	19.7
Other person	386	41.5	4.4	7.7
Injured person	73	16.4	0.0	8.2

- a. Closed head injury includes minor closed head injury, concussion, intracranial.

Opportunities for Action ■ Trampolines

Information for Consumers

(including parents, caregivers and professionals)

- Carefully read and follow the manufacturer's assembly and safety instructions.
- Only one child should be on a trampoline at a time.
- Always supervise the child who is using a trampoline.
- Do not let children less than six years of age use a trampoline.
- Trampoline enclosures, such as safety netting, can never replace proper supervision.
- Only try somersaults, flips, or tricks under the supervision of a certified trampoline instructor in a proper facility.
- Never wear jewellery or clothing that may catch on a trampoline.
- Always jump in the centre of a trampoline.
- When purchasing a trampoline, look for a model that meets the current ASTM International safety standard for trampolines. Check that the manufacturer's name and safety warnings are printed on the trampoline.
- The trampoline should be set up on level ground, and surrounded with an impact-absorbing surface material such as loose fill or sand.

Compliance and Enforcement

Complaints and incidents will continue to be monitored by Health Canada and information and awareness efforts will continue.

Regulatory Initiatives

Trampolines remain unregulated under the *Hazardous Products Act*.

Bath Seats

Concerns regarding the danger of bath seats have been reported in the literature¹⁷⁻¹⁹. Bath seat incidents (drownings and near-drownings) are a relatively rare event in CHIRPP, occurring an average of 0.63 cases per year (children 0-23 months). The surveillance in CHIRPP, which is ongoing, suggests that there has been an increase in recent years since five of the 10 cases have occurred since 2003.

What the data show

A search of the CHIRPP database for cases of drowning/near-drowning in a bathtub was conducted (children under 24 months, 1990 to 2005). Of the 88 cases identified, 10 were bath seat-related. Bathtub only incidents peaked in children zero to two months old while bath seat cases peaked

in six to nine month old infants. Of the incidents occurring in the bathtub only, 62% were admitted to hospital while 50% of the bath seat-related cases were admitted. Six of the 10 cases involved the parent or caregiver leaving the child alone for a short time.

Opportunities for Action ■ Bath Seats

Information for Consumers

(including parents, caregivers and professionals)

- Carefully watch young children in the bath at all times. Always keep them in sight and within arm's reach.
- When bathing a young child, if you have to leave the room for any reason, **ALWAYS TAKE YOUR CHILD WITH YOU.**
- Never leave a young child in the bath under the care of an older child.
- If you choose to use an infant bath seat or bath ring, know that **THE PRODUCT WILL NEVER KEEP AN UNSUPERVISED BABY SAFE**, even for a few seconds. Keep your baby in sight and within arm's reach **AT ALL TIMES.**

Compliance and Enforcement

Infant bath seats are currently unregulated; however, there was public consultation in order to solicit feedback from affected parties regarding a proposal to introduce control measures to address the safety of infant bath seats and bath rings that are advertised, sold or imported in Canada. Based on the consultations, Health Canada is considering two options:

- The establishment of a total prohibition on the advertisement, sale, and importation into Canada of all infant bath seats and bath rings, and
- The establishment of a prohibition on the advertisement, sale, and importation into Canada of all infant bath seats and bath rings that do not meet the requirements of a referenced technical standard.
- Complaints and incidents will continue to be monitored by the program and information and awareness efforts will continue.
- Health Canada recommends that owners of second-hand stores take bath seats or bath rings that have suction cups that are worn out or that are missing warning labels/instructions off the market since they are unsafe.

Regulatory Initiatives

The consultation period was completed in July, 2007 and the final report will be available May, 2009 on Health Canada's website.

Drapery and Blind Cords

Children playing around dangling blind or curtain cords are exposed to a strangulation hazard²⁰⁻²². Young children who get tangled in blind cords may not have the motor skills to disentangle themselves.

What the data show

Such cases are also rare in CHIRPP, currently averaging about 1.2 per year. A search of the CHIRPP database between 1990 and 2003 for unintentional cases of asphyxia related to blind/drapery cords identified 17 incidents. Twelve of the 17 patients were three to five years old. There was one fatality

and nine were admitted to hospital. Of the 17 cases, 12 involved blind cords (Venetian, mini-), four were related to curtain cords and one was associated with bead curtains. Seven (41%) of the children were on an elevated structure (bed, crib, table, box) when the incident occurred.

Opportunities for Action ■ Drapery and Blind Cords

Information for Consumers

(including parents, caregivers and professionals)

- **Keep the cords high and out of the reach of children.** Whether the blind is up or down or the curtain is open or closed, make sure children cannot reach the cords.
- When the blind or curtain is fully down or fully closed, all loose pull-cords should be cut as short as possible.
- Use tension devices with blinds or curtains with looped bead-chains to secure the bead-chain flush to the wall, making it taut.
- In homes where children live or where children visit, consider replacing corded window coverings with cordless versions.
- Never put a crib, bed, high chair, or playpen near a window or a patio door where a child can reach a blind or curtain cord.

See Health Canada www.healthcanada.gc.ca/blindcords for advice on how to modify blind cords to reduce the strangulation and entrapment hazards they may present.

Compliance and Enforcement

Compliance and enforcement of the Regulations will follow established Health Canada policies and procedures.

Regulatory Initiatives

On April 15th 2009, Health Canada introduced regulations for corded window coverings, by publishing the regulations in the *Canada Gazette, Part II*. The regulations reference the standard CAN/CSA-Z600, *Safety of Corded Window Covering Products*, published by the Canadian Standards Association (CSA). This standard is adopted, with Canadian modifications, from the U.S. voluntary industry safety standard of the same name, by the Window Covering Manufacturer's Association (WCMA) and published by the American National Standards Institute (ANSI).

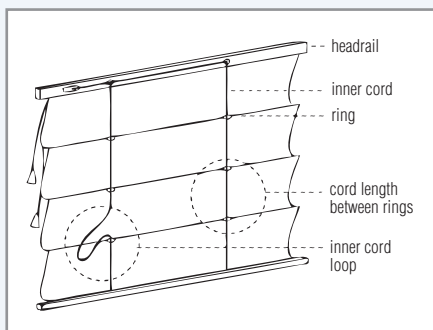
The standard specifies design, performance, labelling, and product instruction requirements, designed to reduce the risk of strangulation to young children on pull cords and inner cords of corded window coverings.

Health Canada is currently developing test methods in order to assess compliance of products to the requirements.

Emerging Hazard – Roman Shades

The inner cords at the back of some roman shades pose a strangulation hazard because:

- The cords pass through rings or slots that are spaced widely apart, typically more than 20 cm (8 inches). This allows space for a child to insert his/her head and neck between the length of cord and the fabric of the shade.
- The roman shade does not have a cord-locking mechanism in the headrail, or inner cord stops on the operating cords (pull cords), to limit the inner cords from being pulled out to form a loop.
- The fabric and bottom rail of the shade are light-weight enough that they rise as the inner cord is pulled, allowing more inner cord to be pulled out.

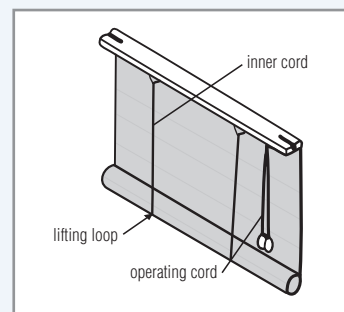


Emerging Hazard – Roll-up Blinds

A roll-up blind consists of a panel of flexible material that is rolled up and suspended by two cord loops, called lifting loops. These lifting loops, also known as inner cords, are attached to the operating cords. When the operating cords are pulled to raise the blind, the lifting loops rise, rolling up the flexible material from the bottom of the blind.

The lifting loops of roll-up blinds pose a strangulation hazard because:

- The lifting loops can slide off the sides of the roll-up blind, most easily when the blind is fully lowered and there is no weight on the lifting loops.
- A child can also place his/her neck between a lifting loop and the roll-up material. The risk of strangulation depends on the tension in the lifting loop cord, created by the weight of the roll of flexible material.



References

1. Sikron F, Glasser S, Peleg K. Children injured following TV tipovers in Israel, 1997-2003. *Child:Care, Health and Development*. 2006;33(1):45-51.
2. Jea A, Ragheb J, Morrison G. Television Tipovers as a Significant Source of Pediatric Head Injury. *Pediatr Neurosurg*. 2003;38, 191-94.
3. Scheidler MG, Shultz BL, Schall L, Vyas A, Barksdale EM Jr. Falling Televisions: The Hidden Danger for Children. *J Pediatr Surg*. 2002; 37(4): 572-75.
4. DiScala C, Barthel M, Sege R. Outcomes From Television Sets Toppling Onto Toddlers. *Arch Pediatr Adol Med*. 2001; 155(2): 145-48.
5. Bernard PA, Johnston C, Curtis SE, King WD. Toppled Television Sets Cause Significant Pediatric Morbidity and Mortality. *Pediatrics*.1998; 102(3), Sept., e32 (electronic article, www.pediatrics.org).
6. Warner BL, Kenney BD, Rice M. Washing machine related injuries in children: a continuing threat. *Inj Prev*. 2003;9:357-60.
7. Agran PF, Anderson C, Winn D, Trent R, Walton-Haynes L. Rates of Pediatric Injuries by 3-Month Intervals for Children 0 to 3 years of Age. *Pediatrics*. 2003;111:e683-92.
8. Hockey R, Miles E, Cunningham K. Injuries related to furniture and large appliances, *Injury Bulletin* [serial online]. 2002; Queensland Injury Surveillance Unit, No. 71, March, 1-4. Available from: www.qisu.qld.gov.au
9. Drury CG, Czaja SJ, Prabhu GV, Mayne RW, Noland S. Furniture Tipping Accidents:Redesign for Prevention. *Acc Anal and Prev*. 1998;30(5):625-39.
10. Leonard H, Joffe AR. Children presenting to a Canadian Hospital with trampoline-related cervical spine injuries. *Paediatr Child Health*. 2009;14(2):84-88.
11. Canadian Paediatric Society. Trampoline use in homes and playgrounds (Position Statement IP 2007-01). *Paediatr Child Health*. 2007;12(6):501-5.
12. Shields BJ, Fernandez SA, Smith GA. Comparison of Minitrampoline- and Full-Sized Trampoline Related Injuries in the United States, 1990-2002. *Pediatrics*. 2005;116:96-103.
13. Brown PG, Lee M. Trampoline injuries of the cervical spine. *Pediatr Neurosurg*. 2000;32(4):170-5.
14. American Academy of Pediatrics, Committee on Injury and Poison Prevention and Committee on Sports Medicine and Fitness. Trampolines at Home, School, and Recreational Centers. *Pediatrics*. 1999;103(5):1053-56.
15. Furnival RA, Street KA, Schunk JE. Too Many Pediatric Trampoline Injuries. *Pediatrics*. 1999;103(5):e57.
16. Smith GA. Injuries to children in the United States related to trampolines, 1990-1995: a national epidemic. *Pediatrics*. 1998;101(3):406-12.
17. Sibert J, John N, Jenkins D, et al. Drowning of babies in bath seats: do they provide false reassurance? *Child: Care, Health and Development*. 2005;31(3):255-59.
18. Byard RW, Donald T. Infant bath seats, drowning and near-drowning. *J. Paediatr. Child Health*. 2004;40:305-307.
19. Raauchschwalbe R, Brenner RA, Smith GS. The Role of Bathtub Seats and Rings in Infant Drowning Deaths. *Pediatrics* [serial online]. 1997;100(4): October, e1. Available from: www.pediatrics.org
20. Drago DA, Dannenberg AL. Infant Mechanical Suffocation Deaths in the United States, 1980-1997. *Pediatrics*. 1999;103:e59.
21. Nixon JW, Kemp AM, Levene S, Sibert JR. Suffocation, choking, and strangulation in childhood in England and Wales: epidemiology and prevention. *Arch Dis Child*. 1995;72:6-10.
22. Yee WH. Accidental strangulation by window-blind cords. *Cmaj*. 1990;142(5):436.

Appendix A ■ External Cause of Injury Groupings

Based on the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)¹

External Cause of Injury	ICD-10 Code
All Injuries	V01-Y89
Unintentional Injuries (excluding adverse effects)	V01-X59, Y85-Y86
Motor Vehicle Traffic (MVT – All) (Occurring on a public highway or street)	V02-V04 (.1), V02-V04 (.9), V09.2, V12-V14 (.3-.9), V19 (.4-.6), V20-V28 (.3-.9), V29 (.4-.9), V30-V79 (.4-.9), V80 (.3-.5), V81-V82 (.1), V83-V86 (.0-.3), V87 (.0-.8), V89.2
<i>MVT – Occupant</i>	V30-V79 (.4-.9), V83-V86 (.0-.3)
<i>MVT – Pedal cyclist</i>	V12-V14 (.3-.9), V19 (.4-.6)
<i>MVT – Pedestrian</i>	V02-V04 (.1, .9), V09.2
Falls	W00-W19
Poisonings	X40-X49
Suffocation	W75-W84
Fire/Hot object/substance	X00-X09, X10-X19
Fire/Flame	X00-X09
Drowning	W65-W74
Struck by/Against	W20-W22, W50-W52
Adverse effects	Y40-Y84, Y88
Self-inflicted	X60-X84, Y87.0
Assault	X85-Y09, Y87.1
Undetermined intent	Y10-Y34, Y87.2, Y89.9
Legal intervention/war	Y35-Y36, Y89 (.0-.1)

References

1. World Health Organization. *International Statistical Classification of Diseases and Related Health Problems, 10th rev.* Geneva, World Health Organization; 1996.

Appendix B ■ Report Methodology

Confidence interval (CI)

A range of values, calculated from the sample observations, that are believed, with a particular probability, to contain the true parameter value. A 95% confidence interval, for example, implies that were the estimation process repeated again and again, then 95% of the calculated intervals would be expected to contain the true parameter value. Note that the stated probability level refers to properties of the interval and not to the parameter itself which is not considered a random variable¹⁻².

Emergency Department Data

Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) is an emergency department based injury surveillance program operated by the Public Health Agency of Canada in which there are currently 11 children's and four general hospitals. Data collection began in April 1990 at the paediatric hospitals and between 1991 and 1995 in the general hospitals. Since then, almost two million records have been collected nationally, more than 80% of which involve children and youth 19 years of age and younger. Three CHIRPP narrative fields allow a detailed level of classification and identification of very specific injury circumstances. CHIRPP records are identified using CHIRPP codes and extensive bilingual (English and French) narrative searches.

For additional information on CHIRPP data, please visit: www.phac-aspc.gc.ca/injury-bles/chirpp/index-eng.php

Hospitalization Data

It should be noted that the hospitalization data represent the number of hospitalizations for treatment of disease or injury at acute care hospitals only – not the number of diseases and injuries requiring hospitalization or the number of injured or ill people admitted to hospital.

All data, except hospitalization data from the province of Quebec, were classified using the International Classification of Diseases, 10th Revision (ICD-10)³. Quebec was still using the International Classification of Diseases, 9th Revision (ICD-9)⁴ for this purpose in 2004-05; therefore ICD-9 codes were converted to ICD-10 based on a transition matrix developed by the Injury and Child Maltreatment Section, Public Health Agency of Canada, which can be found at: dsol-smed.phac-aspc.gc.ca/dsol-smed/is-sb/chirpp/ICD10-ICD9TransitionMatrixISOL.pdf

ICD-9 groupings were used for hospitalization data for the years before 2001/2002.

Hospitalization data in Canada is only available beginning in 1994/95.

Adverse effects occurring in medical care were excluded from the counts of unintentional injuries in this report in accordance with the Injury and Child Maltreatment Section practice. These conditions differ from most injuries, both in their nature and in the types of measures that might be considered appropriate to prevent them.

They include the following conditions from ICD-10:

Y40-Y84 Complications of medical and surgical care

Y88 Sequelae with surgical and medical care

For additional information on record identification, please see: www.statcan.gc.ca/pub/11-522-x/2006001/article/10448-eng.pdf

For additional information on data limitations and interpretation, please visit our website at: dsol-smed.phac-aspc.gc.ca/dsol-smed/is-sb/help_e.html

Interquartile Range (IQR)

A measure of spread given by the difference between the first and third quartiles (or 25th and 75th percentiles) of a sample.

In this report, the values of the quartiles are given rather than the value of the difference.

Mortality Data

Mortality data from Statistics Canada have been classified using ICD-10 beginning in calendar year 2000. ICD-9 groupings were used for mortality data for the years before 2000. A description of the ICD code groupings used and information on the implementation of ICD-10 can be found in Table 1 and at: dsol-smed.phac-aspc.gc.ca/dsol-smed/is-sb/icd10_e.html