

# CHIRPP INJURY BRIEF

Canadian Hospitals Injury Reporting and Prevention Program



## ***Injuries associated with baby walkers*** 1990- early 2003, ages 5 - 14 months

### **SOURCE OF THE STATISTICS**

Injury data were obtained from the database of the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). CHIRPP is an injury surveillance system operating in the emergency departments of 10 pediatric and 4 general hospitals in Canada. Data collection began in April 1990 at the pediatric hospitals and between 1991 and 1995 in the general hospitals. CHIRPP is a program of the Injury and Child Maltreatment Section of the Health Surveillance and Epidemiology Division, Centre for Health Promotion, Public Health Agency of Canada.

Briefs and reports are updated when there is reason to believe the injuries or circumstances surrounding the injuries have changed. For example, the report of injuries associated with a specific product would be updated if the manufacturing regulations for the product are changed to include a new safety element. There is no need to update reports on a regular basis because frequent updates would simply increase the number of records included in the report but not necessarily result in any change in the patterns and distributions found.

### **LIMITATIONS**

It is important to note that the injuries described do not represent all injuries in Canada, but only those seen at the emergency departments of the 14 hospitals in the CHIRPP network. Since most of the data comes from the pediatric hospitals, which are 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; First Nation and Inuit people; and other people who live in rural areas. Fatal injuries are also under-represented in the CHIRPP database because the emergency department data do not capture people who died before they could be taken to hospital or those who died after being admitted.

### **INCLUSION AND EXCLUSION CRITERIA**

The CHIRPP database was searched in December 2003, when it contained 1,362,668 records. Records were retrieved if the patients age was less than two years and (if any of the factor codes was 558 (baby walkers) or the narrative contained "WALKER" or "MARCHETTE)." After review of these records and deletion of those deemed irrelevant, 2,057 records remained. Of these 2,018 (98.1%) were for children aged 5 to 14 months inclusive. Most of the records were from 1990-2002, with an additional 12 included from early 2003. The analysis in this report was limited to this set of 2,018 records.

Since the original report, Table 1 has been updated.

### **RECOMMENDED CITATION**

Injury briefs and reports and data from them may be copied and circulated freely provided that the source is acknowledged. The following citation is recommended:

Health Surveillance and Epidemiology Division (Public Health Agency of Canada). *Injuries associated with baby walkers*: Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database, 1990-2002, ages 5-14 months.

### **FOR MORE INFORMATION**

Please contact the Injury and Child Maltreatment Section, Health Surveillance and Epidemiology Division, by PHONE at (613) 957-4689, by FAX at (613) 941-9927 or visit our website at:

<http://www.phac-aspc.gc.ca/inj-bles/>

## Overview

The CHIRPP database contained 2,018 records of injuries to 5-14-month-old children that were associated with baby walkers and occurred between April 1990 and early 2003. The percentage of injuries associated with baby walkers among all injuries in this age group fell from 6.5% in 1990 to 2.0% in 2002. Baby walker injuries were most frequent among children aged seven to ten months, who experienced 75% of the baby walker injuries among 5-14-month-old children. More than half of the injured children (57.1%) were male. Almost all of the injuries (93%) occurred in the child's own home. And most of the injuries (86%) were the result of a child in a baby walker falling down stairs. Seven percent were injured when they fell in or from a walker on the level. The increased mobility and height of children in walkers was responsible for the five percent of injuries that happened when children were able to reach items and/or pull them down. Injuries of the head, mostly minor head injuries and superficial injuries of the face, accounted for most of the injuries suffered by children who fell down stairs. The percentage of children who were admitted to hospital was eight percent for those who fell down stairs, three percent for those who fell on the level, and 42% for those who pulled hot or boiling liquids down on themselves.

## Changes over time

**Table 1**

**Injuries associated with baby walkers as a percentage of all CHIRPP records for children aged 5-14 months, sexes combined, April 1990-2005\*, by year**

Between April 1990 and the end of 2002 injuries associated with baby walkers accounted for 3.6% of all injuries among 5-14-month-old children. The percentage fell from 6.5% in 1990 to 1.9% in 2000; it remained at 2.0% in 2001 and 2002, and dropped again to 1.2% in 2003.

Year	Percentage of all injuries accounted for by injuries associated with baby walkers
1990 *	6.5
1991	5.0
1992	5.4
1993	5.1
1994	4.3
1995	4.1
1996	3.1
1997	2.6
1998	2.5
1999	2.1
2000	1.9
2001	2.0
2002	2.0
2003	1.2
2004*	0.6
2005*	0.8

\* Data for these years include only the indicated months:

1990 April - December  
2004 January - part of December  
2005 January - October

**Note: An update of the information in Table 1 was done in November 2006:**

A complete year of data was added for 2003. Data for each of 2004 and 2005 were incomplete as of November 2006. Records from part of December, 2004 and from November and December, 2005 remain to be entered. It is unlikely that there will be a change in the percentage of injuries associated with baby walkers for either 2004 or 2005 once all the data are available. However, data from previous years indicate

that if there is a change it would most likely be a small decrease.

The remaining tables in this report were not updated as the addition of 119 new records would not have resulted in any significant changes in the information on the circumstances or nature of injuries associated with baby walkers.

### Age and sex distribution

**Table 2**

**Age and sex distribution of patients who experienced injuries associated with baby walkers, CHIRPP, ages 5-14 months, both sexes, April 1990 - early 2003**

Children aged eight to nine months experienced 43% of the injuries associated with baby walkers. Fifty seven percent of the injured children were male.

Among 5-14-month-old children who suffered other injuries (not related to walkers):

- Injury frequency increased steadily with age from 6.4% at 5 months to 13.9% among children who were 14 months old.
- Males accounted for 55% of the injuries

Age months	All baby walker injury records		Males	
	N	%	N	%
5	35	1.7	22	62.9
6	169	8.4	94	55.6
7 *	348	17.2	234	67.6
8 **	441	21.8	252	57.3
9	433	21.5	238	55.0
10 *	294	14.6	159	54.3
11	174	8.6	77	44.2
12	70	3.5	39	55.7
13	35	1.7	25	71.4
14	19	0.9	10	52.6
<b>Total</b>	<b>2,018</b>	<b>100</b>	<b>1,150</b>	<b>57.1</b>

\* Sex was missing for two records in this age group

\*\* Sex was missing for one record in this age group

## Location

**Table 3**

**Where injuries associated with baby walkers happened, CHIRPP, age 5-14 months, both sexes, April 1990 - early 2003**

Not surprisingly, most injuries associated with baby walkers occurred in the child's own home.

Location	Records	
	N	%
Child's own home	1,755	93.0
Other home	122	6.5
Elsewhere	11	0.6
<b>Total</b>	<b>1,888</b>	<b>100</b>

Location was missing for 130 records

## Emergency Department disposition – all baby walker injuries

**Table 4**

**Emergency Department disposition of all children with injuries associated with baby walkers, compared with all other injuries, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

The proportion of children admitted to hospital was higher for those who experienced injuries associated with baby walkers (8.1%) than for children in the same age group who had injuries that were not related to walkers (5.2%). Among the children whose injuries were associated with baby walkers there were marked differences in the proportions of admissions depending on how the injury happened. See below.

Disposition	Baby walker injuries N=2,017 %	All other CHIRPP injuries N=56,949 %
Left without being seen	0.4	1.4
Advice only	43.6	36.8
Follow-up if necessary	31.5	33.7
Follow-up required	12.1	21.1
Observed in Emergency Department	4.4	1.8
Admitted to hospital	8.1	5.2
Fatal injury	-	0.02
<b>Total</b>	<b>100</b>	<b>100</b>

Disposition was missing in 1 baby walker injury record and 17 other injury records.

## How injuries associated with baby walkers happened

**Table 5**

**How injuries associated with baby walkers happened, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

By far the largest number of injuries associated with baby walkers occurred when a child in a walker fell down stairs. Other falls from a height, where stairs were not mentioned in the narrative, were from decks or porches. See below for more detailed information on each type of injury.

“Other circumstances” included walker collapse leading to pinched fingers; falls while out of the walker but pushing it, leaning on it for support, or climbing on it; falls from a walker being carried by another person, either because the walker broke or because the other person fell; injuries that occurred while being placed in the walker or pushed in the walker by another person.

How the injury happened	Records	
	N	%
In walker, fell down stairs	1,726	85.5
In walker, other fall from a height	4	0.2
In walker, fall on the level	145	7.2
Child was able to reach and/or pull something down	98	4.9
Other circumstances	34	1.7
Unclear circumstances	11	0.6
<b>Total</b>	<b>2,018</b>	<b>100</b>

## Falls in or from baby walkers

**Table 6**

**Information on lack of barriers in falls downstairs in baby walkers, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

Only about a quarter of the records of falls down stairs contained information on why the injury was not prevented by a barrier at the top of the stairs. Because of the relatively few cases for which the information is available it is not known if it is representative of the circumstances of all falls down stairs in baby walkers.

Reason for lack of a barrier	Records	
	N	%
Door at the top of the stairs was open	212	49.6
Gate at the top of the stairs was open	123	28.8
Gate failed	46	10.8
No gate at the top of the stairs	46	10.8
<b>Total with information on lack of barriers</b>	<b>427</b>	<b>100</b>

**Table 7**  
**Falls on the level from baby walkers, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

Children in baby walkers experienced far fewer falls on the level than down stairs.

Circumstances	Records	
	N	%
Fell from walker onto the floor or other surface	76	52.4
Fell from walker onto an object	36	24.8
Fall on the level, not further specified	33	22.8
<b>Total falls on the level</b>	<b>145</b>	<b>100</b>

**Table 8**

**Most frequent injuries suffered by children who fell in or from baby walkers; comparison with all falls that were not walker-related, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

Of the children in walkers who fell down stairs or had another fall from a height 88.8% had injuries to the head. The corresponding percentage for 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.

Intracranial injury was reported for 16 children (0.9%) who fell down stairs or from a height. The percentage appears low but it is more than four times the frequency of such injuries in other types of falls (not related to baby walkers) reported for 5-14-month-old children in the CHIRPP database.

Injury suffered	Falls in or from a walker down stairs or from a height		Falls in or from a walker on the level		Falls not related to baby walkers	
	N	%	N	%	N	%
Minor head injury	603	34.9	24	16.6	9,892	30.4
Concussion	71	4.1	5	3.4	625	1.9
Intracranial injury	16	0.9	0	-	69	0.2
Superficial injury of the face	521	30.1	49	33.8	5,171	15.9
Skull fracture	129	7.5	3	2.1	974	3.0
Open wound of the face	73	4.2	31	21.4	5,700	17.5
Superficial injury of the head, except face	65	3.8	4	2.8	1,395	4.3
Dental injury	28	1.6	5	3.4	588	1.8
Eye injury	12	0.7	2	1.4	223	0.7
Fracture of clavicle	25	1.4	2	1.4	491	1.5
Fracture of upper extremity	13	0.8	3	2.1	1,051	3.2
Sprain or strain of lower extremity	0	-	2	1.4	204	0.6
Other injury	77	4.4	7	4.8	3,941	12.1
No injury reported	97	5.6	8	5.5	2,179	6.7
<b>Total</b>	<b>1,730</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>32,503</b>	<b>100</b>



**Table 9**

**Emergency Department disposition of children in walkers who fell in or from walkers, comparison with all falls that were not walker-related, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

The percentages of children admitted to hospital were similar for walker-related falls on the level and for falls that were not related to walkers. Walker-related falls down stairs or from a height were associated with a considerably higher percentage of admissions.

Disposition	Falls in or from a walker down stairs or from a height		Falls in or from a walker on the level		Falls not related to baby walkers	
	N	%	N	%	N	%
Left without being seen	5	0.3	1	0.7	492	1.5
Advice only	778	45.0	62	42.8	14,353	44.2
Follow-up if necessary	556	32.2	50	34.5	10,301	31.7
Follow-up required	165	9.5	25	17.2	5,572	17.2
Observed in Emergency Department	83	4.8	2	1.4	512	1.6
Admitted to hospital	142	8.2	5	3.4	1264	3.9
<b>Total</b>	<b>1,729</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>32,494</b>	<b>100</b>

Information on disposition was missing for one child who fell down stairs and for nine who had falls that were not related to baby walkers.

### **Injuries that happened when a child in a baby walker was able to reach something or pull something down**

**Table 10**

#### **Sub-types of reach or pull down injuries**

Four different sub-types of injuries resulted from the increased mobility and reach of children in baby walkers. Each accounted for approximately a quarter of the “reach or pull down” injuries. More detailed information on circumstances and disposition is presented below.

Reach or pull down injury sub-type	Records	
	N	%
Scald	29	29.6
Mechanical	26	26.5
Burn	22	22.4
Ingestion of items or chemical contact	21	21.4
<b>Total</b>	<b>98</b>	<b>100</b>

**Table 11****Reach or pull down****1. Mechanical injuries (N=26)****CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

None of the children with mechanical reach or pull down injuries was admitted to hospital; six (23%) required follow-up.

<b>Circumstances</b>	<b>N</b>
Child in walker collided with object (e.g. furniture, door, corner of wall), got finger caught (e.g. in door, drawer)	12
Child in walker pulled furniture or other large object over on self	8
Child in walker pulled other item down on self; includes plant, small appliances (often pulled by cord)	6
<b>Total</b>	<b>26</b>

**Table 12****Reach or pull down****2. Ingestion of, or contact with, items (N=21)****CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

One child (5%) who ingested cigarettes was admitted to hospital; two children (10%) required follow-up

<b>Circumstances</b>	<b>N</b>
Child in walker ingested chemical, or in one case sprayed it in eye: includes cigarettes or ashes (5), laundry detergent or bleach (5), cleaner, medication, insect repellent	12
Child in walker ingested foreign body: includes, battery, plastic button, plastic bottle top, ornament, tack (2), screw	7
Child in walker ingested plant	2
<b>Total</b>	<b>21</b>

**Table 13**  
**Reach or pull down**  
**3. Burn (N=22)**

None of the children with burns was admitted to hospital but 17 (77%) required follow-up. Nine of the ten narratives for the burns associated with small appliances indicated that the child had pulled on the cord or, in one case, the plug.

<b>Circumstances</b>	<b>N</b>
Child in walker touched: oven or its door (7), wood stove (3), fireplace door (1), heater (1)	12
Child in walker contacted small appliance: hot curling iron (5), hot iron (4), electric frying pan (1)	10
<b>Total</b>	<b>22</b>

**Table 14**  
**Reach or pull down**  
**3. Scald (N=29)**

Twelve of these children (42%) were admitted to hospital; The remaining 17 (59%) required follow-up.

In all reports of scalds associated with baby walkers the narrative indicated that the injured child had pulled the hot liquid over. For 16 of the 20 scalds associated with hot water and one of the three associated with hot oil the narrative indicated that the child had pulled on the cord or plug of the kettle or deep fryer. A table cloth was pulled in one of the cases involving hot water and one of the two cases involving soup.

<b>Circumstances</b>	<b>N</b>
Child in walker scalded by: water (20), oil or fat (3), tea (3), soup (2), unspecified liquid (1)	29
<b>Total</b>	<b>29</b>

**Table 15**

**Emergency Department disposition (percentage) of children in walkers who were able to reach or pull items down, CHIRPP data, age 5-14 months, both sexes, April 1990 - early 2003.**

The scalds that resulted from children in walkers being able to pull containers of hot liquids down on themselves were much more often severe (41.4% hospitalization) than were other types of injuries associated with baby walkers:

- Other reach and/or pull down injuries      1.4% hospitalization
- Falls down stairs or from a height          8.2% hospitalization
- Falls on the level                                      3.4% hospitalization

Disposition	Reach/pull down Scald  N=29	Reach/pull down Mechanical  N=26	Reach/pull down Burn  N=22	Reach/pull down Ingest or chemical contact N=21
Left without being seen	-	3.8%	-	-
Advice only	-	46.2%	-	57.1%
Follow-up if necessary	-	26.9%	22.7%	23.8%
Follow-up required	58.6%	23.1%	77.3%	9.5%
Observed in Emergency Department	-	-	-	4.8%
Admitted to hospital	41.4%	-	-	4.8%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Overall, injuries associated with baby walkers resulted in hospitalization more frequently than other injuries of 5-14-month-old children – 8.1% vs. 5.2%.