



A member of the
National SAFE KIDS Campaign

4300 Cherry Creek Drive South
Denver, CO 80246-1530
303-692-2589
303-691-7720

Coordinator
Barbara G. Bailey
Injury Prevention Specialist



Childhood falls are costly.
In 2001, the total charges for hospitalizations due to falls were over \$5.9 million. The average length of a hospital stay for a fall-related injury was 2 days with an average hospital charge of \$7566.¹

Table 3: Causes of hospitalized falls, Colorado children ages 0-14, 1995-2001

	#	%
Slips, Trips, Stumbles	711	17%
Playground	648	16%
From Furniture	384	9%
From Stairs/Steps	267	6%
From Buildings	222	5%
Collision, Pushing, Shoving	180	4%
Other*	81	2%
Unspecified	1693	40%
Total	4,186	

*Other injuries include falls from ladders (33), into pools/wells/holes (11), from cliffs (26), from wheelchairs (7) and from commodes (4).

Fall Injuries Among Colorado Children Ages 0 to 14

Falls are the leading cause of injury-related hospitalizations for children ages 14 and younger. Falls account for 43% of the unintentional injury hospitalizations for children under one year, 33% for children ages 1-4, 37% for children ages 5-9, and 29% for children ages 10-14.

On average, two Colorado children, ages 0-14, die and 598 children are hospitalized each year for fall-related injuries. Of the 21 children who died from falls in 1993-2002, twelve (57%) were less than 5 years old, three (14%) were 5-9 years old and six (29%) were 10-14 years old.

Gender and Age Group Differences

	# of Hospitalizations	Rate per 100,000	# of Hospitalizations	Rate per 100,000	# of Hospitalizations	Rate per 100,000
Age Group	Boys		Girls		Total	
<1	195	91	161	78	356	85
1-4	642	77	442	56	1084	67
5-9	770	72	558	55	1329	64
10-14	999	94	417	42	1417	69
TOTAL	2606	82	1578	52	4186	68

Overall, boys have a significantly higher hospitalization rate (82 per 100,000) than girls (52 per 100,000). There is no statistically significant difference in the hospitalization rates for boys and girls in the <1 year olds. In the older age groups, boys have higher rates of fall-related hospitalizations; by ages 10-14, boys are twice as likely than girls to be hospitalized for fall-related injuries. Also, boys have a significantly higher rate of hospitalization than girls for falls due to slips/trips/stumbles and collisions/pushing/shoving (including sports).

Children under 1 year of age have a significantly higher rate of hospitalization due to falls than other age groups. This is primarily due to higher rates of falls on stairs/steps and falls from furniture (including beds).

The types of falls resulting in hospitalization mirror the developmental stages and activities of growing children.

<1 year	#	1-4 years	#	5-9 years	#	10-14 years	#
From Stairs/Steps	77	From Furniture/Bed	206	Playground	385	Slips/Trips/Stumbles	408
From Furniture/Bed	71	From Buildings	134	Slips/Trips/Stumbles	187	Playground	139
Slips/Trips/Stumbles	12	Playground	124	From Furniture/Bed	84	Collisions/Pushing/Shoving	121

Place of Injury

The type of location where the fall-related injury occurred is recorded in 63% of the hospitalized cases. Among those with the location reported, the majority (74%) of children less than 5 years old were injured in a home. For children ages 5-9, 46% were injured in a home and 31% at a sports/recreation area. For children ages 10-14, 45% of the injuries occurred at a sports/recreation area and 26% at home.

Nursery and Baby Products

Falls are the leading cause of U.S. emergency department (ED) visits for injuries associated with nursery products. However, ED visits dropped nearly 20% from 1995 to 1999, mostly due to a decrease in injuries resulting from baby walkers. Other products linked to injuries are cribs, playpens, high chairs, strollers, baby gates, changing tables, and infant carriers.²

Playground Falls

On average, 93 Colorado children ages 0-14 are hospitalized each year for injuries due to falls from playground equipment. Over half (59%) of the hospitalizations involve children ages 5-9.

Nationwide, more than 200,000 children ages 14 and younger are treated in U.S. hospital emergency departments for injuries from playground equipment. About 75% of the injuries involve public equipment in schools or parks. Most playground injuries are associated with climbing equipment.³ Approximately 70% of the playground-related deaths in the United States occurred on home playgrounds, generally as a result of hanging from ropes, cords and similar items.⁴ Fall-related playground injuries can be reduced by decreasing the maximum height of play equipment and by improving the protective surfacing.⁵

Falls During Sports and Recreation

The hospital record coding system does not specifically identify injuries resulting from sports or recreation. Sports injuries may be classified under such broad categories as “falls,” “striking against a person or object” or “transportation.” In addition, many of the falls listed as “collision, pushing or shoving” or “slips/trips/stumbles” may be sports or recreation-related. Starting in 2000, the coding system was enhanced to enable identification of some types of sports-related falls.

Sport	# of Hospitalizations	% Males	% with a Traumatic Brain Injury (TBI)	% who are Colorado Residents
In-line/Roller Skating	17	71%	6%	100%
Skateboarding	27	93%	11%	96%
Skiing	39	54%	5%	21%
Snowboarding	30	80%	33%	73%

Note: This table refers only to injuries due to falls. This is an under representation of all sports-related injuries.

- Males account for the majority of hospitalizations for fall-related injuries due to in-line skating, skateboarding and snowboarding while hospitalizations for fall-related injuries due to skiing occur equally among boys and girls.
- One third (33%) of the children hospitalized for fall-related injuries due to snowboarding had a traumatic brain injury (TBI); a smaller percentage of children hospitalized for skating, skateboarding or skiing falls were diagnosed with a TBI.
- In contrast to snowboarding, in-line skating and skateboarding, most of the hospitalizations for fall-related injuries due to skiing involved out of state residents (80%).

Childhood Falls Can Be Prevented

It is important to target prevention strategies to the particular risks and types of falls for each age group. More information on prevention of childhood falls and best practices is available at www.cdphe.state.co.us/ps/bestpractices/bestpracticesshom.asp.

Falls in the Home

- Provide parents and caregivers with current information on safe home products, especially for small children. The U.S. Consumer Product Safety Commission web-site (www.cpsc.gov) provides a list of recalled products, information on how to host/set up a “baby safety shower” (www.cpsc.gov/CPSCPUB/PUBS/SHOWER/shower.html) and specific information on setting up a safe nursery (www.cpsc.gov/CPSCPUB/PUBS/safenurs.pdf).
- Adult supervision of children is key to preventing fall injuries. Adults need to be aware and intervene when children are playing in the home; engaged in outdoor play especially on home playgrounds; and when small children are on a changing table, bed or sofa.
- Public awareness campaigns, while not sufficient to change behavior, are an important part of a falls prevention program. Provide home safety checklists to assess the home environment (www.cpsc.gov and www.aarp.org) and promote home modifications. Parents need information on window guards, stair gates, safety straps on child products and other child-proofing ideas (www.safekids.org or www.cpsc.gov).

Falls During Sports and Recreation (Including Playgrounds)

- Develop a community and school playground safety program (www.uni.edu/playground and www.cpsc.gov) that includes:
 - Supervision of all children on all playgrounds
 - Age-appropriate playground equipment
 - Falls cushioned with proper surface material
 - Equipment maintenance
- Ensure that personnel involved in school and recreational programs are aware of proper safety equipment and procedures, and promote school-based injury prevention programs. (www.cdc.gov/mmwr/rr/rr5022.pdf.)
- Develop community-wide prevention programs that focus on safe use of equipment and the promotion of helmets and other safety gear.

For Additional Information

Colorado Department of Public Health and Environment, Injury Prevention Program: www.cdphe.state.co.us/pp/injuryprevention

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control: www.cdc.gov/ncipc

SafeUSA: www.safeusa.org

National SAFE KIDS Campaign: www.safekids.org

The National Program for Playground Safety: www.uni.edu/playground

The Brain Injury Association: www.biausa.org; The Brain Injury Association of Colorado: www.biaincolorado.org

References

¹ The average hospital charge is the average of the 90 percent interval costs. The highest 5% and the lowest 5% of charges are subtracted prior to calculating the averages.

This method is used to deal with “outliers” (the extremely high or low charges).

² Nursery Products Report. (2002). U.S. Consumer Product Safety Commission. Available at <http://www.cpsc.gov/LIBRARY/nursery00.pdf>

³ Tinsworth D, McDonald J. Injuries and Deaths Associated with Children’s Playground Equipment. (2001). U.S. Consumer Product Safety Commission. Available at <http://www.cpsc.gov/LIBRARY/Playground.pdf>

⁴ Home Playgrounds Equipment-Related Deaths and Injuries. (2001). U.S. Consumer Product Safety Commission. Available at <http://www.cpsc.gov/LIBRARY/playground.pdf>

⁵ Hazard: Best Buys in Fall Injury Prevention. (2002). Hazard Edition 48. Victorian Injury Surveillance and Applied Research System Monash University Accident Research Centre. Available at <http://www.general.monash.edu.au/muarc/hazard/haz48.pdf>