



Ontario Neurotrauma Foundation  
Fondation ontarienne de neurotraumatologie



# **Preventing Fall-Related Injuries in Children: An Environmental Scan of Resources and Evidence-Informed Best Practices**

March 26, 2019

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Prepared for  
The Ontario Neurotrauma Foundation

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## Executive Summary

A fall is the most common cause of injury requiring medical attention and the leading cause of unintentional injury hospitalization among children and youth (<1 to 19 years). A fall is also one of the leading risk factors contributing to concussions in children.

Research has identified associations between childhood falls and a range of demographic, behavioural, social, economic and environmental risk factors and conditions. These include: risk taking as a natural part of the developmental process, gender, playground conditions, beliefs and perceptions of parents/caregivers, housing conditions, and poverty/neighbourhood deprivation.

Studies on preventing child falls in the home found support for some protective equipment, such as safety gates or furniture covers, but mixed evidence for other measures, such as window safety devices. However, relatively few studies focused on child falls as a specific outcome. Education programs have proven to be an effective means of helping parents and caregivers to reduce injuries, including fall-related injuries, in children through the creation of safer home environments. Multicomponent initiatives, which combine media campaigns with concerted data collection and reporting, community education and outreach and the provision of window guards, have a substantive impact in decreasing the incidence of falls from windows among children.

Improvements in playground design, especially changes to playground equipment height (1.5m) or less and protective surfacing, are proven strategies for reducing the incidence and severity of playground-related falls and injuries among children. Educational interventions designed to decrease high risk behaviour on playgrounds by children yielded mixed results, as did initiatives aimed at increasing adult supervision on playgrounds.

Effective training strategies, protective equipment and enforcement of sports rules and policies have been linked to a reduction in the frequency and severity of sports-related injuries, including falls, among children. It should, however, be noted that the majority of these studies were conducted on populations of older children (> 9 years).

Physical literacy encompasses fundamental skills and capacities that enable performance in a wide range of physical activities. Efforts to enhance physical literacy in children can help to prevent fall-related injuries by increasing a child's ability to assess high risk physical situations and respond appropriately. Similarly, interventions promoting risky play, thrilling and exciting play with the potential for physical injury, have also been linked to improved risk detection and physical competence among children.

At present, child fall prevention initiatives in Canada are carried out by a range of government, private and not-for-profit organizations. It should be noted that relatively few (if any) of these organizations focus solely on the prevention of falls among children; rather child fall prevention programs and resources are developed as part of broader organizational mandates to prevent childhood injuries and promote child safety. Training workshops for parents/caregivers or child care providers and the provision of evidence-based website-based information for preventing child falls are the most common activities carried out by these organizations.

Research and intervention priorities for reducing fall-related injuries in children include:

- conducting further research on the effectiveness of home-based child fall prevention interventions beyond the use of safety gates and the isolation and measurement of fall-related injuries to more accurately assess the fall-related impact of home safety initiatives;
- maintaining parent/caregiver education to prevent fall-related injuries among children the home, with a greater focus on parent engagement to better understand broader context in which their injury prevention-related decisions and actions occur;
- ensuring that municipal policies on playground development and maintenance comply with CSA standards and reflect evidence-informed strategies to reduce playground injuries in children;
- educating parent and caregivers to ensure that they are proactive in: providing adult supervision on playgrounds; teaching and modelling playground safety rules to children; and checking the safety of playground equipment/surfacing on a regular basis and reporting any problems to operators;
- fostering collaborations with municipal playground authorities in order to provide evaluation opportunities and natural experiments on playground safety as they arise;
- conducting research comparing nature-based versus equipment-based playgrounds and the extent to which these types of playgrounds are associated with injury and health outcomes in children and youth;
- conducting research on the long-term uptake and maintenance of training strategies, protective equipment, policy enforcement and other measures to reduce sports injuries among children, including fall-related injuries
- undertaking further engagement and knowledge translation strategies with key community stakeholders to ensure that injury prevention is a primary focus in youth sporting activities.

## 1. Introduction/Purpose of Document

The following environmental scan was developed for **Loop Junior**, an on-line, interdisciplinary community of practice to initiate knowledge mobilization that will further advance the field of fall prevention in children (age 0-9). Designed to serve as a resource for fostering inter-organizational collaboration on child fall prevention and planning child fall prevention initiatives, the scan provides:

- an overview of the nature and scope of fall-related injuries in children, including the key contributory risk factors and risk conditions;
- a summary of evidence-based practices, programs, environmental supports and regulatory measures for preventing fall-related injuries in children;
- a description of the relationship between child fall prevention and the emerging concepts of physical literacy and risky play, which aim to build children's capacity for healthy physical activity while teaching them to identify and respond appropriately to situations that could lead to injuries (including an injurious fall);
- an overview of Canadian organizations engaged in child fall prevention initiatives; and
- a list of priorities for further research and interventions to strengthen the impact of child fall prevention efforts.

## 2. Fall-Related Injuries in Children: Key Risk Factors and Risk Conditions

### 2.1 What is the nature and scope of fall-related injuries in children?

- A fall is the most common cause of childhood injuries requiring medical attention (Peden et al., 2008).
- In Canada, a fall was the leading cause of unintentional injury hospitalization for children and youth (< 1-19 yrs) in 2008-2009 (Public Health Agency of Canada, 2010; Yanchar, Warda and Fuselli, 2012).
- A fall is one of the leading risk factors contributing to concussions in children (Matveev et al., 2018).
- Children aged one to four are more likely to be injured at home than older children (Ingram et al., 2012). A particular concern for children in this age group are **fall from height injuries** occurring in the home (e.g., falling off furniture, out of windows or down stairs) necessitating medical intervention (Morrongiello and Corbett, 2016).
- A retrospective study of trauma registry data from the state of Georgia identified the population characteristics mechanisms and patterns of young children, aged 0-4 (N =1,086) sustaining fall-related injuries (Chaudary et al., 2018). Younger children (< 1 yr old) fell primarily from caregiver's arms, beds or furniture, while older children sustained more falls from furniture and playgrounds. Children < 1 year sustained the highest proportion of head injuries, including skull fractures (63.1%) and intercranial hemorrhage (65.5%); two-year old children had the highest proportion of femur fractures (32.9%), and four-year old children had the highest proportion of humerus fractures (41%).
- Children over the age of 5 are more likely to fall as a result of **playground equipment** or **sporting injuries** (Peden et al., 2008). Playground injuries occur most frequently among children aged 5-9 (Norton, Nixon and Sibert, 2004). In Canada, at least 29,000 children (<15 years of age) are treated for playground injuries in hospital emergency departments (Fuselli and Yanchar, 2012).
- Playground falls often cause upper extremity injuries, with arm fractures being the most prevalent type of injury (Fuselli and Yanchar, 2012).

## 2.2 What are the key risk factors and conditions contributing to fall-related injuries in children?

Studies have identified associations between childhood falls and a range of demographic, behavioural, social, economic and environmental risk factors and conditions. These include:

### Risk Taking as Part of the Child Development Process

- As children develop, they become increasingly independent and more capable of performing an expanded range of physical activities. The formative years of child development are often viewed as a period of 'risk taking' where children perform increasingly challenging and risky physical activities as their sense of curiosity outweighs perceptions of danger and injury (Peden et al., 2008; Holland, 2018).

### Gender

- Male children are more likely sustain a fall-related injury. This may be attributable to cultural influences that encourage boys to engage in rough, aggressive play that carries a greater risk of injury (Peden et al., 2008).

### Playground Conditions

- Richmond et al (2018) conducted a systematic review of fifteen studies identifying the risk and protective factors contributing to playground injuries. **Risk factors** included: **playground surfacing with low absorption levels** (Chalmers et al., 1996; Laforest et al., 2001); **equipment height greater than 1.5 m** (Macarthur et al., 2000; Sherker et al., 2005); and **the lack of adequate handrails and guard rails on playground equipment** (Sacks et al., 1990; Mowat et al., 1998). Four studies supported the **protective effect** of **public playgrounds (e.g., municipal playgrounds)** versus **playgrounds in residential areas** (Mowat et al., 1998; Laforest et al., 2000; Petridou et al., 2002; Keays and Skinner, 2012). The authors also found evidence that children's proximity to playgrounds served as a protective factor against risk taking behaviour (Morrongiello and House, 2004).

### Perceptions of Parents/Caregivers

- Qualitative studies have revealed attitudes, parental perceptions and beliefs that deter effective fall prevention among children. These include: an acceptance of some injuries as an unavoidable aspect of childhood (Ablewhite et al., 2015; Morrongiello and Corbett., 2016); the belief that injuries can be a beneficial way of teaching children risk avoidance (Morrongiello and Corbett., 2016); a desire to encourage active and independent children (Morrongiello and Corbett., 2016); and the lack of anticipation of injury-inducing events (Ablewhite et al., 2015).

- Most parents of 1-4 year olds participating in a series of focus groups conducted by Morrongiello and Corbett (2016) were highly critical of stair gates to prevent child falls and actively resisted using them. Stair gates were viewed as dangerous, difficult to install and expensive.

### Housing Conditions

- Parents/caregivers dwelling in rented space are less likely to use home safety equipment (e.g., stair gates) due to concerns that their landlords will object to its installation (Ingram et al., 2012).
- Poor quality housing has been associated with a greater presence of indoor hazards contributing to an increased risk of falls by children (Peden et al., 2008).

### Poverty and Neighbourhood Deprivation

- Low-income families may not be able to afford home safety equipment to reduce child fall risk (Ingram et al., 2012; Ablewhite et al., 2015).
- Children living in low-income neighbourhoods experience higher rates of unintentional injuries than other children (Faelker, Pickett and Brison., 2000; Fortin et al., 2010; Mcclure et al., 2015).
- A retrospective study of children who had presented to emergency departments within a statewide hospital network in Rhode Island with fall related injuries linked the risk of these injuries with a composite neighbourhood risk index composed of eight socioeconomic measures: education, crowding, vacancy, renter occupancy, poverty, family structure, race/ethnicity and housing age). Higher risk neighbourhoods were associated with higher annual fall rates (Veras et al., 2018).
- The systematic review of risk factors and interventions for playground injuries conducted by Richmond et al (2018) identified two studies that examined proxy measures of socioeconomic status with increased risk of school playground injuries. After controlling for compliance with playground safety standards, lower SES schools did not demonstrate an increased risk of injury (Mowat et al., 1998; Macpherson et al., 2010).

### 3. Evidence-Based Best Practices for Child Fall Prevention

#### 3.1 What does the literature tell us about the most effective ways of preventing child falls in the home?

- An overview of thirteen systematic reviews of studies examining child fall prevention in the home conducted by Young et al (2013) found that interventions were effective in promoting the use of **safety gates** and **furniture corner covers**. There was some evidence supporting interventions aimed at **reducing baby walker use**, and limited or mixed evidence for the use of **window safety devices, non-slip bath mats, the reduction of tripping hazards, improved corridor lighting, altering furniture layout** and **restricting children’s access to roofs**. It should be noted, however, that only two of the systematic reviews assessed by the authors drew conclusions specific to child fall prevention, thereby indicating the need for further research specifically focusing on child fall prevention as a home safety intervention outcome.
- **Parent education programs** have proven to be an effective means of helping parents to reduce injuries in children by creating safer home environments. A Cochrane systematic review of ten randomized control trials, which included 5,074 children, found that children whose parents had completed educational programs addressing home safety and injury prevention sustained fewer injuries than children whose parents had not completed such programs (Mulvaney et al., 2013). The programs under study were most often provided to economically disadvantaged families or to families with children suffering from poor health.
- **Multicomponent initiatives**, combining media campaigns, concerted data collection and reporting, community education and outreach and the provision of window guards, have demonstrated a substantive impact in reducing the incidence of child morbidity and mortality due to falls from windows. The most extensively documented examples of these interventions are the **“Children Can’t Fly”** and **“Kids Can’t Fly”** campaigns, implemented in New York City and Boston respectively, which resulted in a 96% reduction in window falls for children < 5 years of age (Harris, Rochette and Smith., 2011).
- Several qualitative studies have asked parents about their suggestions and preferences for child fall prevention programming. Parents expressed the need for ‘real life’ child injury stories and statistics, and educational campaigns with strong visual imaging in order to raise awareness of risk (Morrongiello and Corbett, 2016). A series of parent interviews conducted by Abelwhite et el (2015) found that parents preferred to learn about prevention strategies from other parents who had experience dealing with child injuries rather than health professionals. Parents expressed a need for free home safety equipment and home safety inspections as part of a comprehensive approach to preventing child injuries in the home (Whitehead and Owens, 2012).

- The **Supervising for Home Safety (SHS)** program is a Canadian intervention designed to modify caregivers' supervision behaviours, beliefs about children's vulnerability to injuries and self-efficacy to implement safety precautions. SHS provides caregivers with a flexible approach to reducing injury risk based on the **ALTER** concepts: Activity, Location, Timing, Environment and Resources. A randomized control trial evaluation of the SHS program found that caregivers in the SHS group showed significant baseline to post-intervention increases in their ratings of a young child's vulnerability to injury, the preventability of injury-causing events, and their self efficacy to prevent childhood injuries. In addition, caregivers who received the SHS intervention displayed greater readiness to modify their child supervision practices (Morrongiello et al., 2017).

### 3.2 What does the literature tell us about the most effective ways of preventing child falls in playgrounds?

- A systematic review of interventions to reduce playground injuries (12 studies) conducted by Richmond et al (2018) found that **educational interventions designed to decrease high risk behaviour on playgrounds by children** yielded mixed results, with two studies demonstrating null effects (Heck, Collins and Peterson., 2001; Morrongiello and Kane, 2015), and two studies indicating positive perceptions of risk changing behaviour among children post intervention (Morrongiello and Matheis, 2007; Morrongiello and Mark, 2008).
- **Adult supervision** is viewed as a key component of ensuring children's safety on playgrounds (Fuselli and Yanchar, 2012), with studies revealing that children under five years of age were less likely to engage in risky play when parents were nearby (Morrongiello and Rennie, 1998; Morrongiello and Dawber, 2000). One initiative, the **Stamp-inSafety program**, effectively increased teacher supervision of young children at playgrounds, which, in turn, was associated with fewer risk taking behaviours by the children (Schwebel et al., 2006; Chelvakumar et al., 2010). However, the reductions in risk taking behaviours observed by these studies were not statistically significant, and neither study found significant reductions in playground injuries (Richmond et al., 2018).
- **Improvements in playground design**, especially changes to playground equipment height (1.5 m or less) and surfacing, are proven strategies for reducing playground injuries (Fuselli and Yanchar, 2012; Richmond et al., 2018). For example, a pre-post quasi experimental study by Howard et al (2005) found a 30 percent reduction in playground injuries following surfacing replacement (i.e., wood chips instead of concrete) and reduced equipment height (1.5m) at schools in Toronto, Ontario. Olsen, Hudson and Thompson (2010) found a 30 percent reduction in playground injuries following the installation of rubberized surfacing.

- **The Canadian Standards Association** ([www.csa.ca](http://www.csa.ca)) created the only nationally recognized guide for playground safety. The CSA Guide, **Children’s Playspaces and Equipment**, which was most recently updated in 2014, provides detailed specifications for playground layout, access (i.e., mounting and dismounting equipment), surfacing materials, equipment strength, performance requirements and installation, inspection and maintenance and design specifications for playground equipment (CSA, 2014).
- **Nontraditional outdoor play environments** can provide a safe alternative to structured playgrounds. These play environments can be less costly to create and are designed to challenge children’s abilities without the risk of falling from equipment (Fuselli and Yanchar, 2012). A resource on designing outdoor play environments created by the Waterloo Region District School Board in Ontario is available at [https://www.wrdsb.ca/wp-content/uploads/WRDSBGuidelines.K\\_12-Outdoor-Play.pdf](https://www.wrdsb.ca/wp-content/uploads/WRDSBGuidelines.K_12-Outdoor-Play.pdf)

### 3.3 What does the literature tell us about the most effective ways of preventing sports-related child falls?

- A review of the literature by Emery (2018) found that **effective training strategies, protective equipment, and the enforcement of sporting rules and policies** were critical for reducing sports injuries among children, including fall-related injuries. However, the majority of studies reviewed were conducted on populations of youth over the age of 9. At present, there is a dearth of sports-related injury prevention research among children under the age of 12 (Emery, 2018).

## 4. Physical Literacy, Risky Play and Child Fall Prevention: Striking a Balance

### 4.1 What is 'physical literacy'?

- There are a number of definitions of **physical literacy**, which share common elements. Whitehead (2013) defined physical literacy as “the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.” Physical literacy for children has been defined as “the development of fundamental movement skills and fundamental sport skills that permit a child to move confidently and with control, in a wide range of physical activity, rhythmic (dance) and sport situations.” (Higgs et al., 2008).

### 4.2 Why is physical literacy important for preventing childhood falls?

- Physical literacy encompasses children’s ability to ‘read’ what is going on around them and react appropriately to high risk situations (Higgs et al, 2008). This competency enables children to recognize and take appropriate preventive actions in situations that could lead to an injurious fall.

### 4.3 What interventions and resources are available to prevent fall-related injuries in children through the promotion of physical literacy?

- There is some evidence that **resistance training**, a specialized method of conditioning involving the progressive use of a range of resistive loads (including body mass) and a variety of training modalities (e.g., machine-level training, free weight training), in addition to free play and other structured activity training, can prevent injuries while promoting the development of physical literacy (Zwolski et al., 2017).
- In 2008, **Canadian Sport Centres** released a comprehensive parents’ guide for developing physical literacy among children ages 0 to 12 (Higgs et al, 2008). This resource, which is currently undergoing revision, is available at [http://sportforlife.ca/wp-content/uploads/2016/12/DPL\\_ENG\\_Feb29.indd\\_.pdf](http://sportforlife.ca/wp-content/uploads/2016/12/DPL_ENG_Feb29.indd_.pdf)
- The **Canadian Assessment of Physical Literacy** (CAPL) was developed to provide a valid, reliable and informative tool for measuring and monitoring the physical literacy of Canadian children (Longmuir, 2013). The validity of the CAPL was assessed through three analyses of cross sectional data obtained from Grade 4-6 children at schools in Eastern Ontario. Data from 489 children supported a model of physical literacy with four domains consistent with the Whitehead (2013) definition: engagement in physical activity, physical competence, motivation and confidence and knowledge and understanding. Knowledge increased significantly with age. Physical competence scores also increased with age but were slightly higher for boys. Conversely, engagement in

physical activity decreased with increasing age and was also higher among boys compared to girls of the same age. Motivation only decreased among girls at 11 years of age, but the effect was relatively small (Longmuir et al., 2015).

#### 4.4 What is risky play?

- **Risky play** has been defined as thrilling and exciting play that can include the possibility of physical injury (Sandseter and Kennair, 2011). Types of risky play include play at height, speed, near dangerous elements (e.g., water), rough and tumble play (playfighting) and play with a danger of becoming lost (Brussoni et al., 2015).

#### 4.5 Why should risky play be promoted when it has the potential to cause injuries, including injurious falls, in children?

- When considering ‘risk’ in the context of risky play, it’s important to note that the use of the term **risk** has evolved over time from a neutral term denoting the likelihood of a given outcome to a negative synonym for ‘danger’ (Boholm, 2012). Advocates of risky play use the term risk to denote a situation where a child is able to recognize and assess a challenge and decide on an appropriate course of action (Ball, Gill and Spiegel, 2012; Brussoni et al., 2015).
- Studies indicate that the vast majority of injuries resulting from outdoor risky play are minor and require minimal or no medical treatment (Belechri et al, 2001; Sahai et al., 2005; Public Health Agency of Canada, 2009).
- It can be argued that the benefits of risky play outweigh the likelihood and severity of injuries arising from risky play. For example, a study by Lavrysen et al (2017) found that children assigned to a fourteen week risky play intervention demonstrated improved risk detection and competence, increased self-esteem and decreased conflict sensitivity compared to a control group. A systematic review of 21 studies by Brussoni et al (2015) revealed positive effects of outdoor risky play on health, including higher levels of physical activity, increased social competence and reduced aggression.

#### 4.6 What interventions and resources are available to encourage risky play among children?

- **Evergreen**, an organization devoted to creating environmentally sustainable Canadian cities, has a number of print resources describing risky play on its website. Evergreen is working in partnership with 16 Canadian school boards to develop dynamic outdoor spaces and classrooms that provide students with healthy places to play and learn. See [https://www.evergreen.ca/blog/entry/the-benefits-of-risky-play-for-canadian-students/?gclid=CjwKCAiAwJTjBRBhEiwA56V7q7my2CmL1p3m4Wjh8CGjaXG3evtznHN-MOjUh-ycTwEHJ8JijJIZfBoCr4gQAvD\\_BwE](https://www.evergreen.ca/blog/entry/the-benefits-of-risky-play-for-canadian-students/?gclid=CjwKCAiAwJTjBRBhEiwA56V7q7my2CmL1p3m4Wjh8CGjaXG3evtznHN-MOjUh-ycTwEHJ8JijJIZfBoCr4gQAvD_BwE)
- In 2015, a diverse, multi-sectoral group of Canadian organizations, stakeholders and researchers collaborated to develop an evidence-informed **Position Statement on Active Outdoor Play** for children aged 3-12 years (Tremblay et al., 2015). Guided by two systematic reviews, a critical appraisal of the literature, key informant interviews and an extensive consultation process, the final statement declares that: "Access to active play in nature and outdoors--with its risks--is essential for healthy child development. We recommend increasing children's opportunities for self-directed play outdoors in all settings--at home, at school, in child care, the community and nature." The full Position Statement provides contextual information, supportive evidence and a series of recommendations to increase active outdoor play opportunities to promote healthy child development (Tremblay et al., 2015). A full copy of the statement is available at: <https://www.haloresearch.ca/outdoorplay/>
- In 2017, the **International School Grounds Alliance** (ISGA), a non-profit global network working to enrich children's learning and play through improved school grounds design, released The Risk in Play and Learning Declaration, a statement outlining how risk taking opportunities are an essential part of a well-designed school ground promoting optimal healthy child development. A copy of the declaration is available at: <http://www.internationalschoolgrounds.org/risk/>
- Developed by the BC Children's Hospital, UBC and the BC Injury Prevention and Research Unit, **outside play** is a free on-line tool to help parents and caregivers gain the confidence to allow their kids to engage in more outdoor play. The resource can be accessed at: <https://outsideplay.ca/>

## 5. Canadian Organizations Addressing Child Fall Prevention: An Overview

### 5.1 What are the key organizations focusing on child fall prevention in Canada?

At present, child fall prevention initiatives in Canada are carried out by a multi-sectoral range of government, private and not-for-profit organizations. It should be noted that relatively few (if any) of these organizations focus solely on the prevention of falls among children; rather child fall prevention programs and resources are developed as part of broader organizational mandates to prevent childhood injuries and promote child safety. An on-line search conducted as part of this environmental scan revealed that the following organizations had developed programs and resources focusing on the prevention of childhood falls.

#### Alberta Health Services

- MyHealth.Alberta.ca developed three e-resource on keeping young babies (0-6 months), older babies (6 mos-1 year) and toddlers (1-4 years) free from falls. Links to all resources (current as of March 2018) available at: <https://myhealth.alberta.ca/Alberta/Pages/keeping-your-child-safe-from-falls.aspx>
- The **Preventing Injuries Toolkit for Health Professionals** includes key messages for preventing falls and injuries among infants and young children and school-aged children. Range of topics addressed, including playground safety, seats, trampolines, bicycles and ATVs <https://www.albertahealthservices.ca/injprev/Page15684.aspx>

#### ALTER for Child Safety

- **ALTER (Activities, Location, Timing Environment, Resources)** is a comprehensive approach to child fall prevention developed by Dr. Barbara, Morrongiello, an injury-prevention researcher in the Psychology Department at the University of Guelph.
- The **ALTER** website, designed by the University of Guelph in consultation with Durham Region Health Department, Haldimand-Norfolk Health Unit, Niagara Region Public Health and Wellington-Dufferin-Guelph Public Health as part of a CIHR-funded research project, provides overview of program and includes links to key messages and resources <http://www.alterforchildsafety.ca/>

- The **Supervising for Home Safety (SHS)** program, which was based on the ALTER approach, is designed to modify caregivers' supervision behaviours, beliefs about children's vulnerability to injuries and self-efficacy to implement safety precautions. Please refer to page 8 for additional details about the evaluation of the SHS program (Morrongiello et al., 2017).

### BC Emergency Health Services

- The website of BC Emergency Health Services includes links to information/tips to prevent children from falling from open windows <http://www.bcehs.ca/about/news-stories/stories/open-windows-can-increase-risk-of-falls-for-children>
- In 2018, BC Emergency Health Services and the BC Children's hospital issued a joint news release emphasizing strategies to protect children from window-related falls during warm weather months <http://www.bcehs.ca/about/news-stories/news-releases/2018/keep-kids-safe-%E2%80%93-protect-children-from-window-falls-as-temperatures-rise-in-bc>

### Canada Safety Council

- The Canada Safety Council is a National, non-profit charitable organization dedicated to safety that works to prevent deaths and injuries by promoting education and awareness for all Canadians.
- The Council offers a training course for babysitters that includes information on preventing childhood falls <https://canadasafetycouncil.org/product/babysitters-training-course/>
- Child injury prevention, including child fall prevention, was the theme for Canada Safety Council's National Summer Safety week in 2013 <https://canadasafetycouncil.org/child-injury-prevention/>
- The Council's website includes child safety info addressing risk factors for falls including playgrounds, bicycles and trampolines <http://canadasafetycouncil.org/category/child-safety/>

## Canadian Paediatric Society

- In 2012, the Canadian Paediatric Society position statement on a public health approach to child and youth injury prevention <https://www.cps.ca/en/documents/position/child-and-youth-injury-prevention> and a position statement on preventing playground injuries <https://www.cps.ca/en/documents/position/playground-injuries>
- The **Caring for Kids New to Canada Guide** developed by the Canadian Paediatric Society includes section on preventing falls/injuries among newcomer children/youth <https://www.kidsnewtoCanada.ca/health-promotion/injury>

## Child Safety Link

- Child Safety Link is an injury prevention program at the IWK Health Centre in Halifax, NS dedicated to reducing the incidence and severity of unintentional injury to children and youth in the Maritimes. Strategies to achieve mission encompass capacity building and partnerships; communication and public relations; advocacy and healthy public policy; and research and evaluation.
- Initiatives to decrease child falls in home and at play incorporated into Child Safety Link's current three-year strategic plan (2016-2019) <https://childsafetylink.ca/wp-content/uploads/2016/07/CSL-Strategic-Plan-2015.pdf>
- Child Safety Link's website includes print and video resources on child fall prevention <https://childsafetylink.ca/safety-at-home/falls/#>
- In 2018, Child Safety Link produced a Backgrounder on preventing young children's falls in the home [http://www.acip.ca/media/com\\_acymailing/upload/backgrounder\\_preventing\\_childrens\\_falls\\_in\\_the\\_home\\_final\\_oct\\_11\\_2018\\_1.pdf](http://www.acip.ca/media/com_acymailing/upload/backgrounder_preventing_childrens_falls_in_the_home_final_oct_11_2018_1.pdf)

## Government of British Columbia, HealthLink BC

- The HealthLink BC website includes strategies for preventing falls in babies, toddlers and young children (current as of May 31, 2017) <https://www.healthlinkbc.ca/health-topics/ue5136>

## Government of Canada

- The Canadian government's Injury Prevention web page includes links to information on preventing child injuries, including fall-related injuries in-home and outdoors. The page also includes information on product safety standards for items that could cause fall-related injuries (e.g., bunk beds, trampolines) <https://www.canada.ca/en/health-canada/services/injury-prevention.html>

## Government of Manitoba, Health Seniors and Active Living, Health Equity and Prevention Branch

- The Branch developed a Review of best practices to prevent falls and fall-related injuries including falls in children (undated) [https://www.gov.mb.ca/health/hep/docs/injury/injuries\\_falls.pdf](https://www.gov.mb.ca/health/hep/docs/injury/injuries_falls.pdf)
- The Branch also developed the **Manitoba Falls Prevention Inventory: Resources for Adults and Children** (updated July 2015) [https://www.gov.mb.ca/health/hep/docs/injury/inventory\\_mb.pdf](https://www.gov.mb.ca/health/hep/docs/injury/inventory_mb.pdf)

## Grey-Bruce Health Unit (Ontario)

- In 2017, the Grey Bruce Health Unit released a comprehensive, 'call to action' document for preventing falls across the lifespan (2017) that included strategies preventing children's falls and related concepts (e.g., risky play). See: <https://www.publichealthgreybruce.on.ca/Portals/0/Topics/InjuryPrevention/Falls%20a%20cross%20the%20lifespan.pdf>

## Haliburton, Kawartha Pine Ridge (HKPR) Health Unit (Ontario)

- The HKPR health unit website includes tips for preventing falls in young children (up to 36 months). See: <http://www.hkpr.on.ca/InfoSet/BabiesChildren/PreventChildFalls.aspx>

## Leeds, Grenville and Lanark District Health Unit (Ontario)

- The Healthy Babies Healthy Children Program run by the health unit provides a home safety checklist adapted from Kingston, Frontenac Lennox Addington (KFLA) Health Unit and has a limited supply of wall mounted safety gates for families in need.

### Manitoba Coalition for Active and Safe Kids (aka Active and Safe Kids Manitoba)

- Through a time-limited project funded by the Public Health Agency of Canada (PHAC), the Coalition developed and maintained web resources promoting safe play and the importance of using protective equipment to reduce concussions, fractures and drownings for children and youth. Some of the resources produced by this initiative were subsequently incorporated into the **Staying on Your Feet: Taking Steps to Prevent Falls** website (see page 21).
- The Coalition Produced series of orientation modules (print resources) promoting safe play/participation in sports (e.g., skateboarding) <http://www.rmtec.org/wp-content/uploads/2017/03/skateboardsafetymodule4finalnov15.pdf>

### Middlesex-London Health Unit (Ontario)

- Middlesex London Health Unit collaborated with the Children’s Hospital, London Health Sciences Centre Trauma Program to produce a video on keeping children safe from falls (2014). See: <https://www.youtube.com/watch?v=a0yijlJW1c>
- The health unit is currently focused on providing child fall and concussion prevention information to parents and caregivers, particularly Registered Early Childhood Educators (RECES). Presentations are provided to RECES at professional development opportunities.

### Parachute Canada

- Parachute Canada is a national charitable organization dedicated to preventing injuries and saving lives.
- The Parachute website includes section on child fall prevention (age 0-6) with infographic images, lesson plans, key messages and supplemental resources. See: <http://www.parachutecanada.org/child-injury-prevention/item/fall-prevention>
- The ‘Home safety’ section of Parachute website includes tips for creating a child-friendly home and preventing babies/young children from falling. See: <http://www.parachutecanada.org/injury-topics/item/home-safety-around-the-house>
- Preventing harm from children’s falls will be focus of **Parachute’s Safe Kids week campaign** for 2019 <http://parachutecanada.org/programs/item/2742>

## Prevent Child Injury

- Created by the Brock University – Behaviour Health Sciences Research Lab, County of Oxford – Department of Public Health and Emergency Services (now Southwestern Public Health, Kingston, Frontenac and Lennox & Addington Public Health, Niagara Region Public Health, Ontario Injury Prevention Resource Centre, Peterborough County-City Health Unit, The Regional Municipality of York, Community & Health Services Department, Public Health Branch, Thunder Bay District Health Unit and Toronto Public Health, with funding from Public Health Ontario and Ontario Neurotrauma Foundation, the Prevent Child Injury website offers up-to-date information on child safety, including child fall prevention. See: <http://www.preventchildinjury.ca/>

## Play Safe

- Play Safe is a registered program of Sunnybrook Health Sciences Centre focusing on effective injury prevention in sports and recreation.
- The Play Safe website includes strategies for preventing sports-related injuries among children, including those caused by falls <https://sunnybrook.ca/content/?page=play-safe-initiative-sport-injury> It also includes information and resources on risky play <http://www.playsafeinitiative.ca/risky-play.html>

## Region of Waterloo Public Health and Emergency Services (Ontario)

- Region of Waterloo Public Health and Emergency Services produced **Safe and Healthy Children: Public Resource Manual for Child Care Providers**, which includes tips for preventing falls and injuries in child care centres and related factsheets/resources. See: <https://www.regionofwaterloo.ca/en/doing-business/resources/Documents/CCM-Child-Safety-and-Injury-Prevention.pdf>

## Saskatchewan Prevention Institute

- Saskatchewan Prevention Institute Works with Saskatchewan Ministries of Health, Education and Social Services, The Public Health Agency of Canada and service providers and communities in areas of prevention and health promotion with goal of decreasing disabilities in children. The Institute has a comprehensive child injury prevention program.
- Key activities in 2017-18 include provincial webinars, development of a google group to enable communication and networking among child injury prevention organizations/practitioners and a Bicycle Safety week campaign. See <https://skprevention.ca/annual-reports/>
- The Saskatchewan Prevention Institute website includes: strategies and tools for preventing falls in young children at home and on playgrounds <https://skprevention.ca/safety/falls/> ; a resource for service providers to share with families about preventing childhood falls. PowerPoint and Speaker Notes can be accessed at <https://skprevention.ca/professional-dev/child-injury-prevention-safety-presentations/> ; and Tips on trampoline safety <https://skprevention.ca/safety/trampoline-safety/>
- The Institute developed Child and Youth Injury in Saskatchewan report, which includes a section on child fall prevention tips <https://skprevention.ca/resource-catalogue/safety/child-and-youth-injury-in-saskatchewan-2004-2013/>

## Staying on Your Feet: Taking Steps to Prevent Falls

- Maintained by the Injury Prevention Program of the Winnipeg Regional Health Authority, the Staying on Your Feet website, includes tips, information and resources for preventing falls among babies and young children. The site includes information related to playground safety, sports and recreation safety and preventing fall-related concussions <https://preventfalls.ca/children/>

## **6. Research and Intervention Priorities for Child Fall Prevention: Key Findings from the Literature**

### **6.1 What are the priorities for strengthening child fall prevention measures in the home?**

- Further research is needed on the effectiveness of home-based child fall prevention interventions beyond the use of safety gates, furniture corner covers or the restriction of baby walker use. In addition, evaluations of home-based interventions should isolate and measure fall-related injuries in order to more accurately assess their fall prevention impact: to date, these interventions have tended to be assessed in terms of their effect on unintentional injuries as a whole (Young et al., 2013).
- Parents/caregivers should continue to be advised on recommended best practices to reduce home-based childhood falls (Chaudhary et al., 2018). However, it is also important that intervention planners consult parents/caregivers to better understand the broader context in which their injury prevention decision making and actions occur, including the facilitators and barriers to home-based child fall prevention (Abelwhite et al., 2015).

### **6.2 What are the priorities for strengthening child fall prevention measures on playgrounds?**

- Ensure that municipal policies on playground development and maintenance comply with CSA standards and reflect evidence-informed strategies to reduce playground injuries in children (Fuselli and Yanchar, 2012).
- Educate parent and caregivers to ensure that they are proactive in: providing adult supervision on playgrounds; teaching and modelling playground safety rules to children; and checking the safety of playground equipment/surfacing on a regular basis and reporting any problems to operators (Fuselli and Yanchar, 2012).
- One of the key limitations of playground safety research is the inability to conduct true experimental studies (e.g., randomization of study groups to known risk factors). To address this barrier, researchers assessing the safety of playground designs should foster collaborations with municipal playground authorities in order to provide evaluation opportunities as they arise (Richmond et al., 2018).
- Future playground safety research should also focus on comparisons of nature-based versus equipment-based playgrounds and the extent to which these types of playgrounds are associated with injury and health outcomes in children and youth (Richmond et al., 2018).

### 6.3 What are the priorities for strengthening child fall prevention measures in organized sports and recreation activities?

- While effective training strategies, protective equipment, and the enforcement of sporting rules and policies are effective in reducing sports injuries among children, including fall-related injuries, there is also evidence pointing to a lack of uptake and long-term maintenance of these preventive measures. Accordingly, there is a need for further engagement and knowledge translation strategies with key community stakeholders to ensure that injury prevention is a primary focus in youth sporting activities (Emery, 2018).

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