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# Can child injury prevention include healthy risk promotion?

Mariana Brussoni,<sup>1</sup> Sara Brunelle,<sup>2</sup> Ian Pike,<sup>1</sup> Ellen Beate Hansen Sandseter,<sup>3</sup> Susan Herrington,<sup>2</sup> Heather Turner,<sup>4</sup> Scott Belair,<sup>5</sup> Louise Logan,<sup>6</sup> Pamela Fuselli,<sup>6</sup> David J Ball<sup>7</sup>

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For numbered affiliations see end of article.

## Correspondence to

Dr Mariana Brussoni,  
Department of Pediatrics,  
University of British Columbia,  
BC Injury Research and  
Prevention Unit, Room F511,  
4480 Oak Street, Vancouver,  
BC, V6H 3V4 Canada;  
[mbrussoni@cw.bc.ca](mailto:mbrussoni@cw.bc.ca)

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## ABSTRACT

To reflect on the role of risk-taking and risky play in child development and consider recommendations for the injury prevention field, a symposium was held prior to the November 2013 Canadian Injury Prevention and Safety Promotion Conference. Delegates heard from Canadian and international researchers, practitioners and play safety experts on child development, play space design and playground safety, provision of recreation, and legal and societal perceptions of risk and hazard. The presenters provided multidisciplinary evidence and perspectives indicating the potential negative effect on children's development of approaches to injury prevention that prioritise safety and limit children's opportunities for risky play. Delegates considered the state of the field of injury prevention and whether alternative approaches were warranted. Each presenter prepared a discussion paper to provide the opportunity for dialogue beyond attendees at the symposium. The resulting discussion papers provide a unique opportunity to consider and learn from multiple perspectives in order to develop a path forward.

## RISKY PLAY SYMPOSIUM

A symposium was held prior to the November 2013 Canadian Injury Prevention and Safety Promotion Conference in Montreal, Canada, in order to reflect on the role of risk-taking and risky play in child development and consider recommendations for the injury prevention field. Canadian and international presenters included researchers, practitioners and play safety experts, who discussed child development, play space design and playground safety, provision of recreation, and legal and societal perceptions of risk and hazard. Herein we provide a summary of the discussion occurring at the symposium, providing an overview of the arguments made by each presenter and reflection on the state of the research evidence and implications for injury prevention practice. Links are provided to presenters' full submission to provide readers the opportunity to view complete arguments. Most presenters were Canadian and reflected on the Canadian landscape. However, the issues discussed are common to many developed nations, such as the USA, the UK and Australia.<sup>1-3</sup> Nations such as Norway and Finland lead the way in child-centric approaches to child development and injury prevention that can act as models for other jurisdictions.<sup>4 5</sup>

profession within the mandate of public health.<sup>6</sup> This resulted in important gains in reducing injury morbidity and mortality rates. A key contributor to these successes was epidemiological research that identified social, individual and environmental risk factors for injuries.<sup>6</sup> With identification of patterns came the development of prevention strategies to diminish risk factors.<sup>7</sup>

Over the years, the injury prevention field has become increasingly multidisciplinary, expanding from its roots in epidemiology to incorporate behavioural science perspectives.<sup>8</sup> This has proven particularly fruitful for child injury prevention as it has promoted understanding of the developing child and children's particular vulnerabilities. To encourage continued advancement of the field and to ensure that injury prevention efforts are grounded in broader, more holistic understandings of health and well-being, particularly for children, it is important to encourage inclusion of a larger list of disciplines.

The need for injury prevention to expand its disciplinary base becomes readily apparent when considering children's risk-taking through risky play. Risky play is thrilling and exciting forms of play that may include the possibility of physical injury. Sandseter and Kennair<sup>9</sup> have further categorised it into play at height, speed, near dangerous elements (eg, water, fire), with dangerous tools, and where there is the potential for disappearing or getting lost.

## DEVELOPMENTAL BENEFITS OF RISKY PLAY

Ellen Sandseter, a Norwegian early childhood education researcher, discusses the developmental benefits of risky play and cites evidence suggesting that there are good reasons for encouraging, rather than limiting, children's opportunities for risk-taking and risky play (see online supplement 1). These include promoting physical activity, independence, cognitive and social development, and reducing mental illness and learning difficulties.<sup>10-12</sup> Notably, risky play also helps children learn risk perception and management skills, which are important in developing understanding of how to navigate risks and avoid injuries.<sup>9 11</sup> Sandseter describes children's naturally progressive thrill-seeking, which promotes gradual mastery of challenges and realistic risk perception. She also highlights the potential antiphobic effects of risky play, helping children to become accustomed to and cope with stimuli that could otherwise elicit anxiety (eg, heights).

Despite the developmental benefits of risky play, many well-intentioned injury prevention efforts are focused on limiting precisely these kinds of



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## INTRODUCTION

In the middle of the twentieth century, injury prevention became increasingly recognised as a

exposures for children, which are treated as safety hazards. Thus far, there has been little recognition of the distinction between hazard and risk in the injury prevention field. Risks (situations in which a child can recognise and evaluate the challenge and decide on a course of action) have been equated with hazards (a source of harm that is not obvious to the child, such that the potential for injury is hidden).<sup>1 13</sup> For example, climbing a tall slide is a risk, whereas a hazard would be that the slide is not properly anchored and could topple with the child's weight. Confusing risk with hazard has made it more challenging to recognise the benefits of risk. Indeed, through various safety standards, playground designs, rules and supervision practices, we have restricted children's access to risky play opportunities to such an extent that we might be harming their development.<sup>1 9 14</sup>

### PARENTING AND SOCIETAL PERCEPTIONS OF RISK

Psychological and public health research has largely been based on the assumption that people seek to avoid risks and voluntary risk-taking results from faulty cognitive appraisals, lack of understanding or a personality flaw.<sup>15</sup> Yet, a large body of literature documenting voluntary risk-taking, including among children, suggests that it is normal, pervasive and developmentally necessary.<sup>16–20</sup>

The basic childhood need for risky play appears to be at odds with several shifts in social attitudes that have intersected to heighten awareness of and concerns regarding risks, not just of public health professionals, but at a broader societal level.<sup>2 21</sup> These shifts are evident in approaches to parenting that are prominent in Western society today. Sociologists have illustrated how perceptions of childhood have transitioned over time such that children in modern society are positioned as precious and needing the highest possible degree of parents' attention and caregiving.<sup>22 23</sup> These trends coincide with a move towards neoliberal political structures that shift a greater portion of the burden of responsibility for ensuring personal well-being from the state onto individuals.<sup>24</sup> The result is a push towards 'intensive parenting' where parents (primarily mothers) are encouraged to become experts on optimal parenting strategies, and child health and development so as to ensure that their children achieve their full potential.<sup>23 25 26</sup> These beliefs regarding acceptable parenting are coupled with a pervasive societal push to control and manage risks, particularly for children, who are perceived as highly vulnerable and threatened by numerous perils, of which injury is a prominent one.<sup>21 27</sup>

With injuries representing the leading cause of death for children in developed nations,<sup>28</sup> concerns about safety are understandable. However, how parents' safety concerns manifest in preventive action are not necessarily productive for healthy child development or for injury prevention. Many parents' primary safety concerns relate to abduction and exposure to traffic.<sup>29–31</sup> Prominent preventive strategies (that are also consistent with 'intensive parenting') include limiting children's unsupervised outdoor play and chauffeuring children to and from a series of organised activities.<sup>31–33</sup> Attempts to deviate from this parenting model can be met with sanctioning from other parents or even the police.<sup>25 34</sup> Ironically, these strategies increase the injury problem by reducing 'eyes on the street' and by increasing traffic.<sup>35 36</sup> The current 'backseat generation' has markedly fewer outdoor risky play opportunities and access to natural play spaces compared with previous generations.<sup>30 32 37–39</sup>

Parents' observed behaviours are in stark contrast to their expressed wishes for their children's play opportunities and experiences.<sup>40</sup> Brussoni and colleagues have interviewed many

parents about their approach to children's risk engagement and injury prevention.<sup>41–43</sup> When asked to recall their childhood playscape, many parents graphically describe unsupervised adventures in woods, ditches, fields, and so on, where they did not return home until meal times. Frequently, their next observation is a lament that their children do not have the opportunity to experience such unfettered play, often because of limitations they place in the interest of safety.

### PLAYGROUND SAFETY STANDARDS AND CHILDREN'S PLAY SPACE DESIGN

Societal concerns about risk minimisation and the vulnerability of children<sup>2 44</sup> are physically manifest in safety standards for children's play spaces and equipment, and the resulting playground structures (eg, Canadian Standards Association's (CSA) standards CAN/CSA-Z614-14).<sup>45</sup> Standards advocate stringent injury control measures that help ensure playgrounds are hazard free. However, some standards have been adopted without consideration of the cost. Ball<sup>46</sup> highlights that the push for impact-absorbing surfaces has come at great economic cost, resulted in a poverty of play opportunities and effectively prohibited exploration of risk, with no noticeable benefit to reducing deaths and serious injuries—already very rare events. Susan Herrington, a landscape architect and children's play space design researcher in Canada, notes in her paper (see online supplement 2) that these standards are created by organisations primarily concerned with engineering and manufacturing, resulting in technical standards that do not consider the developmental benefits of risk-taking. She points to misinformation to playground designers regarding the safety levels of design elements, such as surfacing, narrowing design opportunities to a checklist of do's and don'ts and resulting in the ubiquitous KFC (kit, fence, carpet) playgrounds. Herrington cites her research in childcare centres showing how the KFC playgrounds have very limited play value and could developmentally disadvantage children. Instead of being an ideal forum to encourage and support developmentally beneficial risky play for children, playgrounds have become less than suitable places for these opportunities.

Scott Belair, certified playground inspector and member of the CSA Z614 technical committee for play equipment, raises concerns regarding playground design and standards as a practitioner and a father (see online supplement 4). He comments on the expansion of CSA standards in the last 25 years, tripling in length, despite the rarity of serious injuries and deaths. Changes include recommendations leading to lowering the height of structures, standardising the width of stair treads and railings, prohibiting use of natural (grass and earth) surfacing and increasing non-encroachment zones.<sup>47 48</sup> Belair highlights the lack of excitement of play opportunities and makes several recommendations for playground design that incorporate Sandseter's definition of risky play.

### BUBBLE-WRAPPED RECREATION

Heather Turner, the director of recreation and arts in North Vancouver, British Columbia, reflects on 35 years of municipal parks and recreation experience in her paper (see online supplement 3). She provides the history of the provision of municipal recreation services, illustrating how shifting priorities and cultural norms have influenced resources and approaches to recreation services. Turner points to a change from providing arenas for free play to what she terms 'bubble-wrapped recreation', followed by more recent efforts to provide challenging and adventurous activities that support child development—efforts that

she perceives need to continue in order to find a reasonable and balanced approach that builds healthy communities.

### PUBLIC POLICY PERSPECTIVE

Louise Logan, president and chief executive officer of Parachute Canada, and Pamela Fuselli, Parachute's vice president of government and stakeholder relations, provide an overview of Canadian policy and legal statutes relevant to playground safety (see online supplement 5). They point to the patchwork of statutes, standards, regulations and duties governing playground safety in Canada, such as the duty of care to ensure reasonable safety on a property. Logan and Fuselli note that CSA standards are voluntary, but in practice many jurisdictions insist on their adherence in the interest of minimising injury and litigation.<sup>48</sup> Interestingly, they found few examples of case law resulting from playground injuries. This seems incommensurate with the fear of litigation that is a dominant force for limiting risky play opportunities. Overall, Logan and Fuselli find the Canadian approach to public policy one that 'supports a strong focus on child safety, and legal risk mitigation', and does not consider negative impacts on child development. They encourage debate to identify guiding principles that promote stimulating and safe lives.

### RISK-BENEFIT ASSESSMENT

David Ball, a risk management researcher and advisor to the UK's Play Safety Forum, describes playgrounds as 'oases of safety' in his paper (see online supplement 6). He describes attempts in the UK to shift policy and the Play Safety Forum's *Managing Risk in Play Provision* position statement<sup>49</sup> and implementation guide<sup>50</sup> that promote a risk-benefit assessment model that considers not only hazards but the developmental benefits of risk taking. Recognising the multidisciplinary aspect of children's play and play space design, Ball provides numerous recommendations tailored to different practitioners.

### THE STATE OF THE EVIDENCE

Lacking in the research literature on child development and risky play are studies using gold standard research methods, such as randomised controlled trials. The bulk of the evidence comes from qualitative and quantitative research with methodological concerns common to research undertaken in community settings. For example, Hüttenmoser<sup>12</sup> compared developmental outcomes for children living in surroundings where they were permitted to play freely outdoors without adult supervision with socio-economically similar children in neighbourhoods where parents did not allow unsupervised outdoor play due to perceived traffic safety concerns. His findings indicated significantly better motor skills, social behaviour, independence and conflict resolution in children with ready access to opportunities for outdoor unsupervised play opportunities. However, his research design was not able to control for pre-existing differences between the families that might have influenced the results.

Expansion of the evidence base to systematically investigate linkages and key hypotheses is necessary. The existing multidisciplinary evidence and years of practitioner experience strongly suggest that children need risky play opportunities to promote development and to develop the risk management skills needed to keep themselves safe. Necessary next steps include systematic reviews to appraise and synthesise the current state of the evidence, improved play-related injury surveillance that includes data on exposure (number of children playing and amount of time spent at play), and highly controlled and rigorous research that can systematically investigate this hypothesis, while remaining relevant to real-world settings. Recent research provides an

example of innovative research exploring this issue. One study examined whether children's reaction times in detecting risks changed after a multiweek intervention promoting risky play activities.<sup>51</sup> Results indicated that compared with a control group, the intervention group showed significant reduction in reaction time on a risk perception test, and their teachers rated an increase in self-esteem and a decrease in conflict sensitivity.

### TOWARDS A CULTURE OF REASONABLENESS

Despite the variety of presenters at the symposium and the vastly different disciplines and backgrounds they represented, all came to the same conclusion: the injury prevention status quo, which prioritises safety above all else, is not reasonable or acceptable. The challenge is to broaden the focus and commit to a child-centric approach—one that includes not only the mitigation of injury but also optimal child development, which necessitates exposure to competence-appropriate risky play in a hazard-free play space. The injury prevention field is at an important juncture, with an opportunity for critical analysis of commonly held assumptions that can promote a cultural shift and epistemological growth. Fruitful discussion has already occurred debating the need to prevent all injuries or whether some injuries are acceptable.<sup>52–55</sup> There is a pressing need to expand these discussions to consider the difference between risk and hazard and the importance of risk for healthy child development. The alternative is to drift into the dangerous realm of unreasonableness. Instead, we have the opportunity to act as a catalyst for societal change and promote a culture of reasonableness with the health and well-being of children at its centre.

#### Author affiliations

<sup>1</sup>Department of Pediatrics, University of British Columbia, BC Injury Research and Prevention Unit, Vancouver, British Columbia, Canada

<sup>2</sup>School of Architecture and Landscape Architecture, University of British Columbia, Vancouver, British Columbia, Canada

<sup>3</sup>Queen Maud University College of Early Childhood Education, Trondheim, Norway

<sup>4</sup>North Vancouver Recreation and Culture Commission, North Vancouver, British Columbia, Canada

<sup>5</sup>Reliable Reporting, Toronto, Ontario, Canada

<sup>6</sup>Parachute, Toronto, Ontario, Canada

<sup>7</sup>Middlesex University, London, UK

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### Dangerous trampolines

Large inflatable toys may qualify as a newish hazard, but trampolines have long been known to be dangerous for children. The number of such injuries is steadily increasing despite new safety measures. Part of the problem may be due to the sense of false security provided by netted enclosures resulting in less parental supervision. It is also likely that the rise is due to increased exposure as a result of the growing popularity of trampolines. (Noted by IBP)