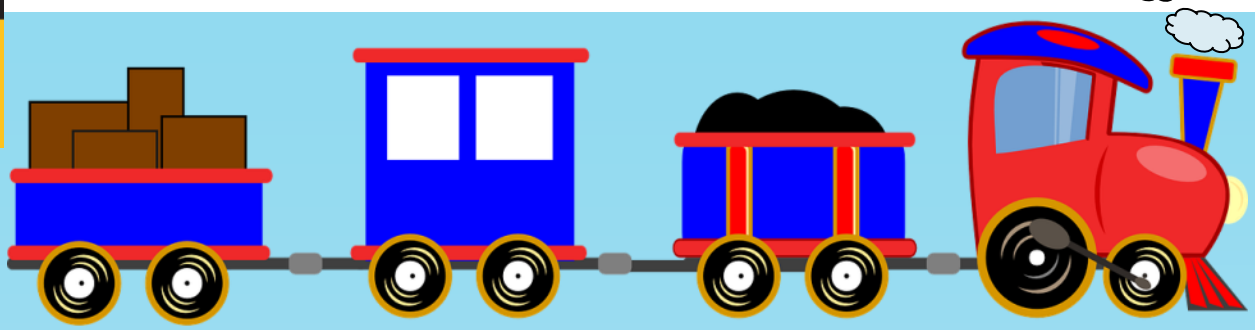
UNIVERSITY of GUELPH

CHANGING LIVES IMPROVING LIFE

Child Development Research Unit

2016 Newsletter!



Greetings and THANKS from Dr. Morrongiello and staff!

This newsletter reports research findings from projects completed at the Child Development Research Unit. Our staff and students are very grateful for the time and effort you have given to participate in our research. Our projects have involved a wide range of activities over a long period of time, and all have been very successful in advancing our understanding of issues related to child health and safety. Because of the large number of participants needed to ensure that our findings are reliable and apply generally to children and families, it sometimes takes quite a while to complete our research. Thank you so much for your patience in waiting to receive the results of the project in which you and/or your family participated.

I hope you enjoy the newsletter and that the findings we report demonstrate to you the value of the research that you are helping us to complete. Without your efforts and support, our research would not be possible! If you know of any other families with children who may be interested in research, please pass the newsletter along to them and encourage them to contact us to find out more about getting involved. We are ALWAYS in need of families who wish to participate!

Again, thank you for your participation and support!

Sincerely,

Dr. Barbara Morrongiello
Director of the CDRU
Professor in Psychology
Canada Research Chair in Child and Youth Injury Prevention
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Encourage a friend to call us today!
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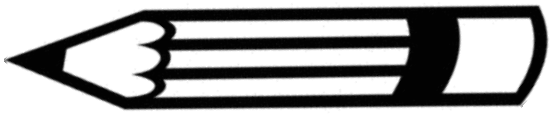
For your ongoing support and participation in these projects!

Current Projects

- How do Parent Safety Practices Change as Infants Learn to Walk?
- Does the Peer Influence on Risky Behaviours in Children Persist Over Time?
- Teaching Children to Cross the Street Using Virtual Reality
- Child Pedestrian Behaviour in Children with a Diagnosis of ADHD



COMPLETED PROJECTS

Teaching & Understanding Hazard Interactions

For children aged two to five years old, injuries often occur in the home. Most parents use a variety of strategies to try and keep little ones safe, including removing hazards, teaching about safety, and supervising. When children are between 2 and 4 years of age, however, most parents transition from removing hazards and supervising to doing mostly teaching about safety. This study explored if teaching about safety is sufficient to prevent injuries during these early years.

Mothers of three-year-olds completed an in-home room-by-room interview in which they identified injury hazards that concern them, reported on their use of teaching to manage risk of injury from these hazards, rated children's understanding of these safety issues, and reported on children's recent interactions with these hazards.

The results of this study revealed that parents worked very hard to teach children rules about safety and hazards to avoid in the home. They believed that this education would stop the child from interacting with these hazards and, consequently, they often left their child unsupervised with the hazard. Whether or not children interacted with a hazard, however, depended on their *level of understanding of why the item was dangerous*; it did not relate to how well children knew and could recite the safety rule.

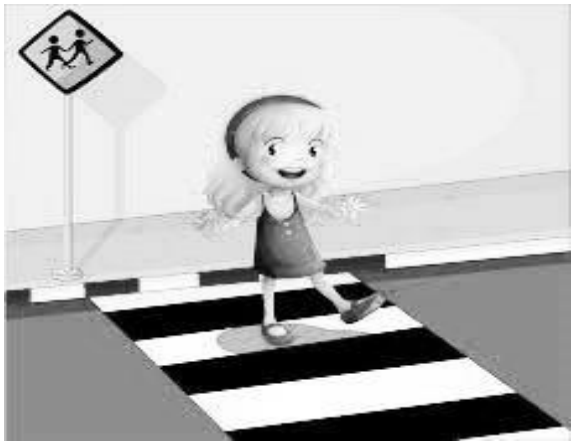
When teaching about safety, parents need to test the child's understanding of the danger (e.g., ask questions about why they have the rule, what could happen, etc.) and not just ask them to verbalize the safety rule. Children are more likely to comply with safety rules if they fully understand *why* the rule is in place and what the danger is that the parent is concerned about.

An Evaluation of *The Great Escape*: An Interactive Computer Game Improves Young Children's Fire Safety Knowledge and Behaviours

This study used an interactive computer game called *The Great Escape* to teach children ages 3.5 to 6 about fire safety. What the child did when playing the game was to help an animated animal out of several fire-hazard scenarios that can occur at home. As they played the game, questions were asked to assess children's knowledge. When an error was made, corrective feedback was given to explain their error and try to improve their knowledge.

Comparing their knowledge scores before the game with those they earned after playing the game revealed that the game was a big success! It increased both children's ability to identify fire hazards and their knowledge of how to react in different fire scenarios (e.g., smoke alarm going off at home during the night, if clothes catch on fire). This game taught children about the importance of fire safety in an engaging and interactive way that they very much enjoyed.

Innovations in Using Virtual Reality to Study How Children Cross Streets in Traffic



For this study we used virtual reality technology as an innovative way to safely determine how a child crosses streets in different traffic conditions. Children were asked to wear virtual reality goggles and cross a virtual road, while walking between two floor markers in the physical environment. First children crossed without any traffic, to allow them to get used to the feeling of being within a virtual reality environment. Following this, children monitored the flow of traffic and crossed the virtual street when they deemed it was safe.

Our studies have revealed several important findings: (1) Children focused mostly on the distance a car was from them; they did not attend as much to the speed of the vehicle. Because they assumed a far distance means they are safe to cross, they sometimes made risky crossings in which fast moving cars came close to hitting them. (2) When children cross under time pressure, they make riskier decisions that can increase their risk of being injured. Thus, having them not feeling rushed when walking to school is important for their safety. (3) Parents think that their children will cross in a safer fashion than the children actually did. It is important, therefore, that parents supervise children as they cross and directly teach them about traffic flow and road safety.

The use of virtual reality created new and exciting opportunities for studying how children cross streets under different types of traffic conditions.

What Motivates Parents to Implement Home Safety Rules?

This study examined when parents taught children aged 2 to 3 years different home safety rules. In structured interviews, mothers were asked about 38 specific safety issues and whether they had already taught or were currently teaching their child a rule about that issue. Three important results were found.

(1) Parents implemented safety rules mostly in *reaction to* their child being/almost injured. Thus, once parents were convinced of their child's vulnerability to being injured, they took action. These findings suggest that messaging that emphasizes children's vulnerability to injury might be a good strategy to promote parents' behaving in a more proactive way to anticipate injury risk and implement safety strategies *before* children get hurt.

(2) Most parents taught children that some safety rules could be ignored in certain situations, such as if the parent were present with the child. Although

parents did this to promote independence, our results show that children are often confused by the fact that the rule does not have to be followed at all times. These 'special circumstances' rules, therefore, were the ones that children often ignored, engaging in risky behaviors even when the parent was not present. This finding can explain why some researchers have found that teaching children home safety rules is associated with an *increase* in injury, rather than a decrease.

(3) Parents of younger versus older children used different teaching strategies. Parents of younger children restated the rule frequently, which enhances children's familiarity of the rule more so than understanding of the rule. Parents of older children emphasized explaining the basis for the rule, which does more to promote understanding of the safety issue.

Preventing Dog Bites

Children have the highest risk of being a victim of dog bites. A contributing factor of this is that children often act in unpredictable ways, which can make dogs behave aggressively.

An interactive video game called the *Blue Dog* was created to teach children how to recognize and respond in different dog situations. Children's knowledge and behavior in the vicinity of unfamiliar dogs was studied before and after completing the intervention, so we could test for improvements. In fact, thanks to some very friendly dogs who live nearby, children participated in a 'live dog' situation in our lab with their parent!

Children who took part in the *Blue Dog* intervention improved in their knowledge of how to behave more safely with dogs, but they did not actually implement those safer behaviors when exposed to an unfamiliar live dog in the lab. More work on ways to prevent dog bites in children is needed.

Exploring Positive Mood State and Children's Risk-Taking

As elementary school-aged children get older and are granted more independence, they experience many injuries when they are away from home and making their own decisions, often while playing with friends. This study examined how children's mood affects engaging in reckless risk taking behaviours.

Children participated in play activities in both a neutral mood and an aroused positive mood state; the latter mood was induced based on playing a rousing video game. The play activities included running an indoor obstacle course so that recklessness could be measured.

The results revealed that being in a positive mood state resulted in increased risky and reckless behaviours in school aged children. This may help to explain why children often do risky things when having fun with friends that they would not do otherwise.

In a follow-up study, before children completed the play behaviors in a positive mood, they heard an audio recording of a peer communicating a safety norm message (e.g., 'smart children resist doing risky things when they are feeling very happy and jazzed up'). This study found that exposure to peer safety messaging could counteract the increase in risk taking when in a positive mood state. Exposing children to this type of safety messaging may be one way to help children avoid engaging in risky behaviors when playing with friends.

Training Older Siblings to be Safety Supervisors

Older siblings often supervise younger children. This study created an online intervention program called *Safe Sibs* as an engaging way to teach children about home safety hazards and how to supervise to keep youngsters safe.

The study observed children with their young sibling in a playroom and measured their supervisory practices, such as physical proximity and watchfulness. After this, the older sibling completed the online *Safe Sibs* program at home, which included teaching them about: (1) Common ways that children get hurt at different ages; (2) Identifying, finding and managing hazards; (3) How to be a good supervisor; and (4) Dealing with supervisee noncompliance. The sibling pair then returned to the lab for a second visit and interacted in a similar room as the original visit.

Those who participated in the intervention showed significant improvements in identifying hazards and understanding why they were dangerous. Moreover, these children were better supervisors and took more proactive steps to eliminate younger siblings' access to hazards. Thus, the *Safe Sibs* program was very effective!

Don't Touch That Gadget

For most children under the age of 6, many injuries occur within the home. Therefore, studying how they react to 'new' hazards in the home is important.

Via hidden video cameras we observed 3 year-olds' interactions with a new object called a "gadget" (i.e., described as a 'hot hazard' that s/he should not touch). Videos were coded for how children reacted to the Gadget, maternal verbalizations to children about the hazard, and children's compliance with directives to avoid the hazard.

Boys were more likely to engage with the Gadget when a parent was in the room, as opposed to when the parent was absent. These behaviors by boys often occurred *in reaction to* parent verbalizations to stay away and not touch the Gadget. Girls, however, were less likely to touch the Gadget than boys, regardless of whether the parent was present or absent. These findings suggest that more effortful strategies are needed to keep boys than girls safe at home.

CURRENT PROJECTS

Please call or e-mail us if you and your child are interested in participating in any of these projects!

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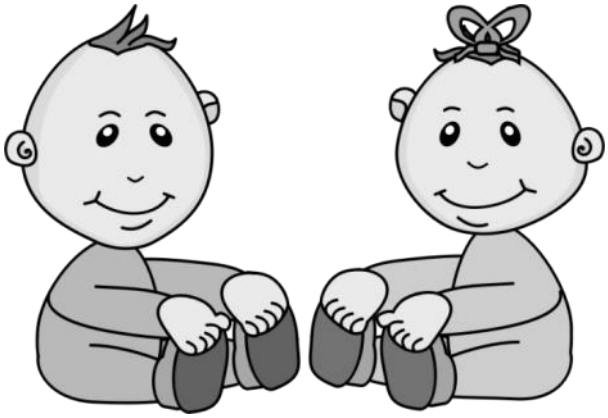
How do Parent Safety Practices Change as Infants Learn to Walk?

**** We need infants who have just started sitting on their own! ****



In this research project we're interested in identifying the types of changes that parents implement as their baby becomes more motorically active at home.

For this project, a research assistant would visit you at your home several times, including when the infant is sitting and walking. During the visits we will ask you questions about parenting, your child's behaviour, and strategies that you have tried to reduce your child's risk of injury. Parents will also help us by filling out some diary sheets about their infant's activities in the home. This study will help us develop useful guidelines for parents about how to prevent injuries to their increasingly active infant. Parents have enjoyed participating and becoming more aware of home safety issues!

Does the Peer Influence on Risky Behaviours in Children Persist Over Time?

**** We need children 7 – 9 years of age! ****

We have shown that exposure to a peer message about safety is effective to reduce risk taking during play. Now we are testing to see if this positive effect persists over several weeks.

For this study, we ask children aged 7-9 years old to come into the lab for two visits, about a week or two apart. During each visit, your child will sort some photos, play a computer game, and run through an indoor obstacle course. From these activities we can determine if the reduction in risk taking persists over time. The obstacle course is really fun and is something kids have really enjoyed!

Teaching Children to Cross the Street Using Virtual Reality

*** *We need children 7-10 years of age*! ***

This project involves using virtual reality technology to teach children how to cross the street safely!

Children will wear a virtual reality headset while seated at a computer and learn how to use the Safe Crossing system. The system teaches children skills, such as looking both ways before crossing, assessing speed and distance of cars, and recognizing how hills may make visibility difficult for cars.

Child Pedestrian Behaviour in Children with a Diagnosis of ADHD

*** *We need children with ADHD who are 7-10 years of age****

An exciting new project is starting involving children with a diagnosis of ADHD! We will be using fun and innovative virtual reality technology to generate realistic traffic conditions.

Families will be asked to visit the lab for two hour long visits occurring approximately two weeks apart. While here, you will be asked to complete questionnaires while your child will be asked to wear 3D goggles and decide when they believe it is safe to cross our virtual street. Being hit by cars when crossing streets is a major cause of injury for school-aged children, and we are the only team in Canada who is using this approach to better understand how we can help children to cross streets more safely!

Please contact us if you have a child that fits within any of these age ranges and are interested in helping out with any of these projects!

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If you know any other families with children who may be interested in participating in research, please pass this newsletter along to them and encourage them to contact us!