

PedsCases Podcast Scripts

This is a text version of a podcast from PedsCases.com on the “**Pediatric Injury Prevention.**” These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at www.pedcases.com/podcasts.

Pediatric Injury Prevention Podcast

Developed by Carol Wang and Dr. Ioana Bratu PedsCases.com.
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Carol: Hi everyone, welcome to another episode of PedsCases. My name is Carol Wang, I'm a medical student at the University of Alberta. In this podcast, we will be providing an overview of various injury prevention strategies as outlined by the Canadian Pediatric Society. Injury is the leading cause of death among children between the ages 1-19yo worldwide. Despite its importance, trauma is a neglected public health issue. Boys are more likely than girls to sustain an injury. Injury can be intentional and unintentional. The leading causes of intentional injuries are: suicide, homicide, assault, abuse or neglect. The primary causes of unintentional injuries include motor vehicle collisions, drowning and falls. Given that injury is such an important public health issue, prevention is the best approach to reducing its societal burden. Children are vulnerable as they lack a voice in policy making. Hence, it is the responsibility of health care professionals to advocate for strategies proven effective in preventing injuries in this population.

Joining us today is Dr. Ioana Bratu. Dr. Bratu is a pediatric surgeon and the pediatric trauma medical director here at the Stollery Children's Hospital in Edmonton. She has kindly joined us in this discussion. So welcome, Dr. Bratu

Carol: Why don't we start off with helmet legislations?

Dr. Bratu: Cycling is the number one cause of sports related injuries in the pediatric population. Collisions with motor vehicles make up a significant portion of these traumas. The most severe form of injury sustained by cyclists is head trauma, which can be mitigated with helmet usage. Research has shown helmet use reduces head, brain and facial injuries in both children and adults. The CPS recommends that bicycle helmets should be used by Canadians of all ages. Parents are role models for their children in safety practices. In Alberta, the current traffic safety act mandates that those 18 years and under are required to wear a bicycle helmet but adults are not required to do so. Opponents to this legislation have argued that the safety measure may encourage children to take more risks and act more recklessly, but this has not been proven the case. As advocates for children, health care providers should educate parents and the general public to promote and enforce helmet legislations. In addition,

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parents are role models for children in cycling safety practices and should be encouraged to wear helmets also. For medical students, each well child care visit is an opportunity to educate and reinforce helmet legislations.

Carol: All terrain vehicles are commonly seen in rural and First Nation communities both for recreation and for farm related tasks. Dr. Bratu, could you please share with us the ATV legislations that are currently in place?

Dr. Bratu: ATVs pose high injury risk in children due to their lack of experience, inadequate motor and cognitive maturity to handle unexpected obstacles and tendency for risk taking behaviors. Poor ATV safety behaviors that are commonly seen include: riding without a helmet, carrying passengers on single operator vehicles, operating a non-age appropriate vehicle, without adult supervision and riding in the dark. Only 22% of children operating ATVs attended ATV safety training programs. Children sustain injuries from rollovers, falling off and collisions while operating ATVs. Actually, CPS recommends that children under 16yo should be prohibited from operating an ATV. Children 16yo and older must wear a government certified helmet, protective clothing, footwear and eye protection. In addition, the teen must complete a training course and never take passengers on their vehicles. More importantly, this population should be cautioned to never operate or ride ATVs under the influence of substances, ie: alcohol and drugs. Despite these recommendations, the Alberta ATV legislation poses no restrictions to operators on private property. On public land, children under 14yo must be under adult supervision. But no safety training or helmet use are mandated at the moment. The responsibility of promoting ATV safety practices ultimately falls on the physician.

Carol: Parents are more cognisant of encouraging their children to be physically active. The playground is a favored place for children to gather and play. What are some of injury prevention strategies that parents should be informed about?

Dr. Bratu: Majority of playground injuries result from falls, making fractures the most common type of sustained injury. Death on the playground is extremely rare and strangulation from child's own clothing is the most common cause. Serious injuries can be prevented with teaching children to use equipment safely, avoid clothes with drawstrings or scarves and having adult supervision. Details of other playground safety strategies are found on the SafeKids Canada website, which is a useful resource parents can also refer to.

Carol: According to the CPS, choking, suffocation and strangulation are the primary causes of unintentional injury deaths in infants and toddlers. What are some common causes of this form of injury?

Dr. Bratu: Children under 3 years of age are at the highest risk of fatal asphyxia because their airway development is incomplete and swallowing mechanism is underdeveloped. Children mostly choke on latex balloons and small cylindrical shaped foods. These include hard candies, hot dogs, grapes, carrots, peanuts, seeds, and so on. The CPS recommends infants and toddlers under 4years should: avoid the aforementioned foods, gummy candies or vitamins, fish with bones, and foods presented on toothpicks or skewers. Also, coins, batteries, especially button batteries,

and earth magnets are especially worrisome if ingested as they can be lethal. Children should never eat while walking or running, they should always eat sitting at a table whenever possible. A useful way to assess whether an item is safe is to pass it through an empty toilet paper roll. Those that fit through the roll are choking hazards and should be kept away from infants and toddlers. Children can suffocate by accidental hanging and by items in their sleeping environments such as stuffed animals. This age group can suffer from strangulation secondary to window blind cords, skipping ropes and drawstrings on clothing. Infants/toddlers are also at risk of suffocation when sharing a bed with their parents.

Carol: The causes you've just described involve parts of our everyday living. What are some strategies that can help parents avoid them?

Dr. Bratu: Parents of children younger than 4yo should be instructed to safe proof their home environment. They should also be informed of safe sleeping habits by having the child sleep in his/her own crib. Age specific strategies are outlined in the related statement found on the CPS website. It can be used to guide parental education. In addition, parents should be advised to learn CPR and choking first aid, both instructions are offered through the Heart and Stroke Foundation.

Carol: Research shows skiing and snowboarding are the second most common cause of recreation related injuries during winter and spring, resulting in a higher hospitalization rate than hockey. Children sustain injuries from collisions and falling. The brain and spinal cord are the most commonly injured organ. Could you please go over the recommended prevention strategies?

Dr. Bratu: Children frequently suffer from ski and snowboarding injuries due to their inexperience and inadequacies in skill. Currently, there are no legislations that mandate skiiers and snowboarders to wear helmets. CPS has put forth recommendations for these children to wear protective gears including helmets, goggles and wrist guards. In addition, children should undergo formal instructions in skiing and snowboarding and adhere to the Alpine Responsibility Code. The Code lists various measures meant to prevent snow sport related injuries. Once again, the weight falls on the physician to engage in these discussions to educate parents about the necessary safety measures.

Carol: Statistics show that trampoline injuries causes more significant harm than other sports or recreation induced injuries. What are some safety practices pertaining to children playing on trampolines?

Dr. Bratu: Kids aged 5-14yo are the most at risk for trampoline related injuries. Most of these injuries occur at home and with multiple users on the trampoline. Fractures especially to the upper extremities are the most common types of sustained injuries. The CPS prohibits purchasing and using trampoline recreationally by children. They should not be used as an outdoor recreation equipment. Even enclosures and adult supervision are not adequate against injuries.

Carol: In the outpatient setting, students may encounter parents who inquire about water safety for their children. What are things that students should learn to counsel parents on?

Dr. Bratu: Bathtubs are the most common setting for drowning in infants whereas swimming pool is the culprit for toddlers. Parents may ask about the most appropriate age to place their kids into swimming lessons. The CPS states that 4yo is the earliest at which a child is developmentally mature enough to master aquatic locomotor skills. Swimming lessons for children under 4yo should not be regarded as precautionary measures against drowning. When they have arrived at the appropriate age, swimming must be taught by a trained instructor. Children in the pool should always be within an arm's length from adult supervision. Infants must be held by an adult at all times. CPS also recommends that parents undergo training in first aid and CPR. Again, there are no specific legislations pertaining to pool safety and it's up to the physician to utilize every opportunity to educate the parents.

Carol: Among winter sports, snowmobile carries the highest injury risk. How are these injuries sustained?

Dr. Bratu: The most serious injuries occur when the snowmobile collides into a tree, cable or another vehicle

Carol: What kind of injuries are children likely to suffer from?

Dr. Bratu: Head injuries are the most common.

Carol: What are the recommended prevention strategies for snowmobile operators?

Dr. Bratu: CPS states that children under 16yo should be prohibited from operating snowmobiles. Children 16 and older who wish to operate snowmobiles must obtain licensing. Studies have shown that licensing reduces operator deaths. New license holders should only operate in daylight, with speed restrictions and only on set trails. CPS suggests snowmobilers travel in groups with appropriate protective clothing. The current Alberta legislations does not specify a minimum driver age but restrict highway operation to children 14 years and older. Children under 14yo must be under adult supervision when operating on public property. But there is no specified minimum age if a supervisor is present. Snowmobiles must consist of headlights, tail lights and stop lamps. Helmet use is not mandatory under the legislation. Finally, restrictions posed by the legislation is not applicable to snowmobilers operating on private property. There are some stark contrasts between the CPS recommendations and AB legislations. To ensure children's safety, we recommend educating parents on the CPS statements pertaining to snowmobiler safety.

Carol: The last but certainly not the least injury prevention issue is booster seat legislations. Dr. Bratu what can you tell us about this topic?

Dr. Bratu: According to the CPS, the rear facing car seat is used for children weighing under 10kg or 22lb and less than 1yo. Continue in this seat type until the child weighs more than 10kg. The forward facing car seat is recommended for 10-22kg or 22-48lb and up to 122cm tall. The next step up is the booster seat, which is used until the child weighs more than 36kg or 80lb. The child can travel safely with seat belts once they have graduated from the booster seat, must be at least 8yo and fit properly within the confinements of the seat. For details of the child safety seats and their appropriate use, please refer to the CPS statement on the topic. Although the CPS supports use of booster seats, Alberta does not have a legislation that mandates use of booster seats in children over 6 or weighs more than 40lb or have outgrown their child safety seats.

Hence, the responsibility falls on the parent to ensure the proper seat is selected and placed.

Carol: Dr. Bratu, before we end this podcast, would you mind giving listeners some take home messages about pediatric injury?

Dr. Bratu:

- Injury is the leading cause of death in the pediatric population
- The vast majority of pediatric traumas are preventable
- The CPS provides recommendations on evidence supported trauma prevention strategies that only some provinces and territories have adopted fully into their legislations
- Physicians can advocate on behalf of children by educating parents on prevention strategies, promote awareness in the community as well as support the adoption of CPS recommendations at the political level

Carol: Thank you for taking time out of your busy schedule to join us today Dr. Bratu. For more information on each of the CPS statements referred in this podcast, please visit its website. Also, please refer to the government websites for province specific legislations pertaining to each injury prevention strategy. Thanks for listening!

Please see <http://www.cps.ca/en/documents/authors-auteurs/injury-prevention> for more information on this topic.