

Safety in Youth Ice Hockey: The Effects of Body Checking

ABSTRACT. Ice hockey is a sport enjoyed by many young people. The occurrence of injury can offset what may otherwise be a positive experience. A high proportion of injuries in hockey appear to result from intentional body contact or the practice of checking. The American Academy of Pediatrics recommends limiting checking in hockey players 15 years of age and younger as a means to reduce injuries. Strategies such as the fair play concept can also help decrease injuries that result from penalties or unnecessary contact.

Ice hockey is played by approximately 200 000 children in the United States¹ and a similar number in Canada. It is classified as a collision sport by the American Academy of Pediatrics because of the intentional body contact, called body checking, that occurs. Because collisions in this sport may occur at high speeds, participants are at risk for serious injury. In recent years, an increase in the number of serious head and neck injuries related to body checking has alarmed the hockey community and has led to a reassessment of the role of body checking in the various classifications of youth hockey²⁻⁴: mite—ages 8 and 9 years; squirt—ages 10 and 11 years; pee-wee—ages 12 and 13 years; and bantam—ages 14 and 15 years.

In the 1960s, an alarming number of facial injuries in youth hockey players led to the mandatory use of helmets with a face mask.⁵ The acceptance and use of the combination helmet–face mask was remarkably successful in virtually eliminating facial trauma. However, shortly after the introduction of the helmet–face mask, an increase in the number of neck and spinal injuries was noted.⁴ The improvement in equipment with the helmet–face mask^{1,6} was believed to create a false sense of protection from serious injury. A similar situation was observed in football. With additional protection afforded by improved helmets and face masks in the 1950s, there was an increase in cervical spine injuries. The number of spinal injuries did not start decreasing until rule changes in the 1970s prohibited head-first contact. Rule changes instituted in the mid-1970s substantially decreased, but did not eliminate, these tragic injuries. The ice hockey community wanted to learn from the experience in football and avoid a paradoxical increase in injury as a response to wearing protective equipment. This concern led to inves-

tigations of the incidence and causes of head, neck, and spine injuries.⁷⁻⁹

A Canadian study in 1984² revealed 42 spinal injuries in hockey players reported to the Committee on Prevention of Spinal Injuries. The median age of the injured players was 17 years. Of the 42 players, 28 had spinal cord injuries, of which 17 had complete paralysis below the vertebral level of the injury. Being body checked from behind, resulting in a collision with the boards, was the most common mechanism of injury. A 1987 study⁷ of high school hockey players revealed that head and neck injuries accounted for 22% of the total number of injuries. The same study showed that body checking was associated with 38% of the total number of injuries. Sixty-six percent of the players surveyed believed that the requirement of a face mask allowed them to be more aggressive in their style of play. The authors of this study recommended rule changes to limit or eliminate body checking to reduce injuries.

A more recent US study reported injuries in youth hockey players 9 to 15 years old.¹ Head and neck injuries accounted for 23% of the total number of injuries. Body checking accounted for 86% of all injuries that occurred during games. Fifty-five percent of the players thought that their helmets and face masks protected them from injuries. Of particular interest is that size differences among players in this series increased with age, with bantam-level players (ages 14 and 15 years) showing the most variation, with reported differences between the smallest and largest players of 53 kg in body weight and 55 cm in height. The bantam-level players sustained the most injuries (54%).

Another Canadian study¹⁰ compared pee-wee-level players (ages 12 and 13 years) from a league that allowed body checking with another league that did not. Players in the league that allowed body checking had a fracture rate 12 times higher than the rate of the other league. Body checking in combination with substantial differences in size and strength among players was believed to contribute to the high injury rate, with some players being nearly twice as heavy and twice as strong as other players. Players in the same age group could vary significantly in the amount of force they could impart on another player and/or withstand from another player. In 1990, the Canadian Academy of Sports Medicine reported that although the incidence of serious injuries at the mite and squirt level was quite low, serious injuries were noted at the pee-wee level. Therefore, they recommended banning body checking at the pee-wee level (ages 12 and 13 years) and below.¹¹

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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An innovative, unique concept for improved sportsmanship and injury reduction in youth hockey called fair-play has been introduced recently.¹² The fair-play concept of scoring ice hockey games, seasons, or tournaments was developed in response to the perceived increase in violence in youth hockey. The system rewards teams and individual players with few penalties and punishes teams and players with larger numbers of penalties. The authors of this concept believe that the system decreases penalties, intimidation, and violence during hockey and creates a climate that promotes fun and player development.

The potential benefits for the fair-play concept are demonstrated in a recent study¹³ involving a youth hockey tournament. The participants were high school students younger than 20 years old, who played the qualifying rounds of the tournament using fair-play guidelines (points are awarded for playing without excessive penalties) and the championship round following regular rules. When the fair-play and regular rules portions of the tournament were compared, the injury rate was 4 times higher during the regular rules portion of the tournament. A doubling of the number of penalties and injury rate during the championship round occurred when fair-play rules were suspended.

CONCLUSION

Studies have shown that a high proportion of youth hockey injuries are attributable to checking and that limiting checking can reduce injuries. Disparities in size and strength can further increase the risk for serious injury from checking and other collisions. Variations in size and strength are present in all age groups but are most pronounced among the bantam-level players (ages 14 to 15 years). Therefore, minimizing checking and other high-impact collisions in this age group could further reduce injuries.

RECOMMENDATIONS

In the interest of enhancing safety in youth ice hockey, the American Academy of Pediatrics recommends the following.

1. Body checking should not be allowed in youth hockey for children age 15 years or younger.
2. Good sportsmanship programs, such as the fair-play concept, have been shown to reduce injury and penalty rates and should be adopted for all levels of youth hockey.
3. Youth hockey programs need to educate players, coaches, and parents about the importance of knowing and following the rules as well as the dangers of body checking another player from behind.

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