



## ICE HOCKEY INJURIES AND PREVENTION

Ice hockey is becoming one of the most popular sports played in North America. A fast-paced finesse sport, it requires tremendous dexterity, speed, and power to play. There are unique injury patterns resulting from play and fortunately many of these injuries are preventable.

### Risk Factors for Injury in Ice Hockey

Injuries occur at higher rates in games than in practice and at higher levels of play. Equipment must be properly fit and worn to be effective in minimizing injury. Violent behavior and playing styles are also risk factors and increased injuries are seen when the rules of the game are ignored. Referees are responsible for enforcing the rules and promoting a safe environment. Rules in ice hockey prohibiting checking from behind have been instrumental in lowering serious neck injuries. In 2011–2012, USA Hockey raised the age at which checking is allowed to the Bantam level (13–14 years old) from Pee Wee (11–12 years old) as several studies demonstrated a clear increase in injuries associated with body checking.

### Common Injuries Seen on the Ice

#### Head and Neck

Concussions have been identified as one of the most common injuries in youth ice hockey. A concussion can result in abnormalities of balance, cognition, and vision. Sometimes a concussion can be challenging to diagnose. Underreporting of symptoms is very prevalent in ice hockey. Coaches and parents should be aware of the most common symptoms including headache, confusion, dizziness, loss of balance, and light sensitivity. A player with unresolved symptoms should not be allowed back on the ice. The use of helmets and full visors has been instrumental in reducing the number of eye and dental injuries in ice hockey. However, there is no such thing as a concussion proof helmet. Prevention strategies to minimize concussion in youth hockey have focused on removing hits to the head, raising the checking age, and eliminating fighting.

## ICE HOCKEY INJURIES AND PREVENTION



### Shoulder Injuries

Hockey shoulder pads have increased flexibility and are not as rigid as football pads. A high percentage of these shoulder injuries occur as a result of checking and collisions along the boards. The most common injuries to the shoulder are fractures of the collarbone and shoulder separations. Often, these injuries require a sling and a period of time away from the ice. Serious cases may sometimes necessitate surgery.

### Elbow Injuries

Properly fitting elbow pads are helpful at minimizing injury. The tip of the elbow is called the olecranon and comes into frequent contact playing hockey. Inflammation of this area is called olecranon bursitis and causes the soft tissue overlying the olecranon to become irritated. Treatment for olecranon bursitis can involve taking an anti-inflammatory medication (NSAID), ice, compression and in recalcitrant cases, aspiration.

### Hip Injuries

Femoroacetabular impingement (FAI) is the most commonly diagnosed cause of hip and groin pain in ice hockey players of all ages and activity levels. Hockey players are predisposed to FAI because of ice skating mechanics. Studies have shown that the hockey sprint start places the hip in two "at-risk" positions of abduction and external rotation during the initial push-off phase and flexion and internal rotation during the recovery phase at the end of the skating stride. Groin strains, hip flexor pulls, and hip pointers are also common injuries involving the hip. Prevention for these injuries starts in the offseason with a workout program dedicated to strengthening core muscles and maintaining flexibility.

### Knee Injuries

Injury to the medial collateral ligament (MCL) is common in youth and amateur hockey, though the MCL is one of the strongest ligaments of the knee. The MCL is susceptible to injury as a result of an ice collision causing an outside stress to the knee or from the knee position with the push off on the inside edge of the skate. Depending on the severity, treatment for this injury usually requires rest, a hinged knee brace and a course of physical therapy

### Ankle Injuries

"Skate bite" is a common injury in ice hockey players at the beginning of a new season. It usually occurs from the stiff tongue of the skate rubbing up against the ankle and causing irritation of the tibialis anterior tendon. Treatment can be a foam pad between the skate tongue and the anterior ankle or placement of an anti-inflammatory gel. Skate bite can be prevented with a new pair of skates by flexing the stiff tongue back and forth to break it in.

"Boot-top lacerations" can also occur in hockey from the skate blade of an opponent cutting the leg just above the skate. Seemingly innocuous skin lacerations can result in serious injury to tendons and neurovascular structures. Kevlar socks can be worn and have been shown to minimize the damage that can occur from this injury.

"Everyday is a great day for hockey."

—Mario Lemieux

## ICE HOCKEY INJURIES AND PREVENTION



### How can injuries be prevented?

Hockey is a fast paced game with collisions, sticks, boards, and a puck traveling over 30 MPH. There are some clear dangers to the sport that cannot be eliminated. However, the majority of injuries in ice hockey are minor, mostly contusions and strains.

Here are key take away points for injury prevention in ice hockey:

- Properly fitting equipment is essential. Protective equipment from helmets to shoulder pads to breezers can't protect if they do not fit correctly!
- Full facial protection with the helmet can significantly reduce ocular and dental trauma
- Preseason screening examination
- Zero tolerance for hits to the head
- Enforcing rules of No Checking from Behind
- Referees need to enforce the rules and promote an environment of fair play
- Speak with a sports medicine professional or athletic trainer if you have any concerns about injuries or prevention strategies

The goal is to ensure that our young hockey players heading to the ice rink have fun, improve their skills, and develop a passion to make playing ice hockey a lifelong recreational activity.

### References

1. Smith AM, Stuart MJ, Roberts WO, et al. Concussion in ice hockey: current gaps and future directions in an objective diagnosis. *Clin J Sport Med*. 2017.
2. Stuart MJ, Smith AM, Malo-Ortiguera SA, Fischer TL, Larson DR. A comparison of facial protection and the incidence of head, neck, and facial injuries in Junior A hockey players. A function of individual playing time. *Am J Sports Med*. 2002;30(1):39-44.
3. Popkin CA, Schulz BM, Park CN, Bottiglieri TS, Lynch TS. Evaluation, management and prevention of lower extremity youth ice hockey injuries. *Open Access J Sports Med*. 2016;7:167-176.
4. Stull JD, Philippon MJ, LaPrade RF. "At-risk" positioning and hip biomechanics of the Pee wee ice hockey sprint start. *Am J Sports Med*. 2011;39 Suppl:29S-35S.
5. Emery CA, Kang J, Shrier I, et al. Risk of injury associated with body checking among youth ice hockey players. *JAMA*. 2010;303(22):2265-2272.
6. Popkin CA, Nelson BJ, Park CN, et al. Head, neck, and shoulder injuries in ice hockey: current concepts. *Am J Orthop* (Belle Mead NJ). 2017;May/June:123-134.

An AOSSM & STOP Sports Injuries Collaborating Organization



Sports Tips are brought to you by the American Orthopaedic Society for Sports Medicine. They provide general information only and are not a substitute for your own good judgment or consultation with a physician. To learn more about other orthopaedic sports medicine topics, visit [sportsmed.org](https://sportsmed.org).

Copyright ©2022. American Orthopaedic Society for Sports Medicine. All rights reserved. Multiple copy reproduction prohibited without specific written permission.