



LACROSSE INJURIES

With its roots in Native American cultures, lacrosse is America's oldest and currently fastest growing team sport. Played by both girls and boys of all ages, it is a fast paced, free flowing game. Its combination of speed, quick change of direction, stick, ball, and contact make for a unique set of injury mechanisms and types.

Girls and Boys Lacrosse

Though sharing general concepts of play, girls and boys lacrosse are very different with regard to allowed contact, mandated protective equipment, and injury epidemiology. For girls, intentional body to body contact is not legal and stick checking must be directed away from an opponent's head and body toward the pocketed end of the stick only. Protective goggles and mouth pieces are mandatory, with lightweight gloves and soft headgear optional. Boys lacrosse is a higher contact sport which requires the mandatory use of helmets with full face guards, shoulder pads, padded gloves, and mouth pieces and suggested use of elbow pads and protective genital cups.

What are the common injuries in lacrosse?

Overall, lacrosse is a moderate risk sport in which the vast majority of injuries are minor strains, sprains, and bruises. However, more significant injuries can occur.

- Non-contact, ankle and knee ligament sprains, sustained while cutting and dodging are common in both girls and boys lacrosse. At the scholastic level, ankle sprains represent 21 percent of all reported injuries for girls and 16% for boys.
- Knee injuries, including anterior cruciate ligament (ACL) tears, are the leading cause of lost game and practice time for both girls and boys.
- Muscle strains of the hamstrings, quadriceps, and groin are common and related to similar, noncontact mechanisms.
- Head and face injury, including concussion, are less frequent but still an important issue for the game. Most commonly related to body to body or body to ground contact in the boys game and inadvertent stick or ball contact in the girls games, these injuries are more frequent in game than practice situations.

LACROSSE INJURIES



- Shin splints and foot blisters are common and related to continuous running and changing field surfaces.
- Abrasions about the uncovered lower extremities are common and require appropriate cleaning and protection.
- Seen more commonly in baseball and hockey, commotio cordis is very rare cardiac arrhythmia related to ball to chest contact. The few cases in lacrosse have involved adolescent boys. The condition is best treated by early activation of the EMS system and utilization of onfield AEDs.

How are lacrosse injuries treated?

With any injury, participation should be stopped until an assessment is made by a qualified health professional. For minor injuries, treatment usually includes rest, ice, and elevation.

Other injuries may be more serious, and require a longer period of rest and rehabilitation. These athletes may be allowed to participate with modifications, depending on the risk for re-injury. In the most severe cases, surgery may be required. All head injuries should be thoroughly evaluated. Athletes should return to play only after appropriate physician evaluation, on a graduated schedule, and only when completely symptom free.

How are lacrosse injuries prevented?

- **Know the rules and respect the game.** Although boys' lacrosse allows significant contact, it is still a game that prioritizes finesse and skill. Unprotected hits have no place in the game. For girls, rules which promote a free style of play and limited contact must be adhered to by coaches, officials, and players.
- **Maintain open communication.** Discuss your lacrosse goals and health concerns with your sponsoring lacrosse organization, coach, trainer, parents, and health provider to ensure the right steps are made to enjoy the game and to prevent and treat injuries.

- **Be proactive in your conditioning.** Stay in shape year round. Prior to the lacrosse season, start a graduated program of plyometrics, neuromuscular training, conditioning, and strength training geared to lacrosse demands. Warm up properly by thoroughly stretching and gradually increasing the intensity of your workouts. Hydrate regularly and get plenty of rest.
- **Wear the right equipment.** Protective equipment should be appropriately sized. Do not modify mouth pieces or gloves for comfort.
- **Take a break.** All lacrosse players should have at least one or two days a week and one or two months a year away from lacrosse to stay fresh and prevent burnout and overuse injuries.
- **Report all injuries.** Decrease training time and intensity if pain or discomfort develops.
- **Have a plan.** All lacrosse organizations should have a well established emergency medical plan and injury prevention/education programs for their membership.

Expert Consultants

Richard Hinton, MD, MPH
Karen M. Sutton, MD
Jennifer McCollum, ATC

References

- Hinton RY, Lincoln AE, Almquist JL, Douoguih WA, Sharma KM. Epidemiology of lacrosse injuries in high school aged girls and boys: a 3-year prospective study. *AJSM*. 2005. 33(9) 1305–14.
- Lincoln AE, Hinton RY, Almquist JL, Lager SL, Dick RW. Head, face, and eye injuries in scholastic and collegiate lacrosse: a 4-year prospective study. *AJSM*. 2007. 35 (2) 207–15.
- US Lacrosse. Available at: www.uslacrosse.org
- Yard EE, Comstock RD. Injuries sustained by pediatric ice hockey, lacrosse, and field hockey athletes presenting at United States emergency departments, 1990–2003. *J Athletic Training*. 2006. 41 (4) 441–9.