

Skiing Injuries

Downhill skiing continues to increase in popularity. The skiing industry has made the sport accessible to more people. Faster ski lifts and expansion of trails at ski areas, as well as improved snow making capabilities, have increased the numbers of skiers on the slopes.

Dramatic changes have occurred in the equipment as well. Ski boots have evolved from soft leather cut boots to mid-calf plastic boots that rigidly support from the lower leg and ankle. Advancements in binding design continue to reduce the number of lower extremity injuries. The American College of Sports Medicine (ACSM) endorses the use of these more sophisticated multi-directional release bindings. Falls are an obvious cause of injuries, accounting for approximately 75 to 85 percent of skiing injuries. Collisions with objects including other skiers, account for between 11 and 20 percent, while incidents involving ski lifts contribute between 2 and 9 percent. Studies demonstrate that the majority of injuries are sprains, followed by fractures, lacerations and dislocations.

Though changes in modern ski equipment and improvements in slope design and maintenance have contributed to a decline in injuries, there are still a significant number of skiing injuries. While fractures were more common prior to these equipment changes, it is now more common to see injuries to the ligaments of the knee.

Several studies have demonstrated that the most common injury to the knee is damage to the medial collateral ligament (MCL). This injury occurs with slow twisting falls or when beginners maintain a snowplow position for lengthy periods and stress the ligament. Virtually all degrees of MCL sprains can be managed conservatively with bracing and limited range of motion.

Another common knee injury is rupture of the anterior cruciate ligament (ACL). Many factors can attribute to this injury, such as a backward fall as the lower leg moves forward. A similar shearing force can occur when the lower leg is suddenly twisted away from the upper leg as in "catching an edge." These injuries often require surgical repair and extensive rehabilitation. Fractures of both the femur and tibia occur more commonly with violent twisting falls or collisions. It is common to see fractures in older skiers who have more brittle bones. High speed collisions with a stationary object can cause significant major trauma of vital organs and clearly require emergency care and evaluation.

Injuries to upper extremities account for approximately 30 to 40 percent of all injuries. The most vulnerable joint of the upper body is the thumb. Injury to the ulnar collateral ligament of the thumb is second in frequency only to MCL injuries of the knee. These injuries occur when a skier falls on an outstretched arm that is still gripping the pole. The thumb is suddenly pulled outward, injuring this joint. ACSM supports the use of poles with straps rather than the fitted grip as these are associated with fewer injuries.

Like knee sprains, sprains of the thumb are graded first degree, second degree or third degree, depending upon the severity of damage to the ligament. Surprisingly, injuries to the thumb can be serious and, if not cared for properly, can result in long term disability. A protective cast is used in nearly all cases for lengths of time varying from three to six weeks. Infrequently surgery is required. While fractures of the upper extremity are infrequent, dislocations of the shoulder are quite common. After rehabilitation of a dislocation, protection of the joint to prevent recurrence is important. Despite aggressive rehabilitation programs designed to strengthen the shoulder, recurrent dislocations are possible. Surgical repair is often necessary to restore the joint to a more functional state. With any of these injuries, it is important to determine the severity of the injury. Skiing should be discontinued if it causes further pain. Wait for assistance. Initial first aid consists of "RICE" (Rest, Ice, Compression, and Elevation). ACSM recommends injuries be promptly evaluated and treated by appropriate medical personnel.



Many factors contribute to an individual's potential for injury. Attention to preseason conditioning with an emphasis on sport specific exercises will help delay muscle fatigue which often contributes to an injury.

ACSM recommends taking lessons to increase one's skiing ability and appreciation of varying ski conditions. Additionally, good equipment that is properly fitted and maintained by a certified ski shop will minimize risks. Skiers who understand the risks and attempt to control as many variables as possible can avoid many serious injuries. ACSM stands in support of safe sports participation and believes it is possible to reduce individual risk for injury while still enjoying the sport of skiing.

Written for the American College of Sports Medicine by Susan W. Ryan, D.O. (Chair) and Jack Harvey, M.D., FACSM

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*Street Address: 401 W. Michigan St. • Indianapolis, IN 46202-3233 USA
Mailing Address: P.O. Box 1440 • Indianapolis, IN 46206-1440 USA
Telephone: (317) 637-9200 • FAX: (317) 634-7817*

