

Ligament Injuries

During the past 15 years, the overall ski injury rate has decreased approximately 50%. This is primarily due to improvements in ski-related equipment, which have led to a decreased number of ankle injuries and lower leg fractures. However, a much smaller decrease in knee ligament injuries was noted and additionally, the severity of the knee ligament injuries has actually increased fivefold.

The increase in significant ski-related knee ligament injuries is thought to be multi-factorial. A major factor appears to be the changes in the boot design, which removes most of the significant stresses from the ankle and lower leg and places them mainly on the knee. Other factors which are likely important include skier experience, ski bindings and maintenance, modern snowmaking and trail grooming, and skis themselves.

The most common mechanisms of injury leading to a significant knee ligament tear include: crossing of one's ski tips leading to severe inward rotation of the lower extremity, catching an edge of a ski leading to significant outer or external rotation of the leg, and lastly, severe quadriceps contractions associated with sitting back on one's ski boots while attempting to negotiate moguls. Other contributing factors include fatigue, ski conditions, and skiing out of control.

Symptoms the skier with a knee ligament tear experiences include pain localized to the inner or outer side of the knee, an audible pop or snap felt inside the knee, the inability to continue skiing, and the rapid onset of knee joint swelling. Possible diagnoses include anterior cruciate ligament tears, meniscal (cartilage) tears; kneecap dislocations or knee joint fractures.

Appropriate initial treatments of such injuries include splinting, ice, and crutches emphasizing a nonweightbearing gait. Emergency room or orthopaedic sports medicine clinic evaluation where radiographs can be obtained are mandatory to exclude a knee joint fracture.

Patients diagnosed with anterior cruciate ligament tears are cautioned to avoid immediate "emergency surgery" at the ski lodge-related hospital. New orthopaedic sports medicine data suggests that waiting several weeks to perform the reconstruction is beneficial to the knee in avoiding postoperative rehabilitation difficulties and problems with knee joint stiffness.

Recommendations to help prevent or avoid knee ligament sprains include annual proper maintenance of boots and bindings, proper boot fitting, and skiing under control.