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Sled Safely to Keep Up the Winter Fun

By Kenneth Fine, MD

Recreational sledding may be one of the few remaining activities available to children that is all about fun and isn't tainted by the shadow of over training and super-competitiveness. Although sledding can be fun, there are risks associated with sliding sports that must be minimized in order to prevent injury. Each year, there are between 20,000 and 90,000 sledding injuries in the United States requiring emergency department care. Some of these injuries are fatal or result in life-long disability. More than 60 sledding related deaths have been reported since 1990.

The main risks in sledding occur when the sled or sledder hits a fixed object such as a tree or rock or a collision occurs between a sled and a person. Injuries include sprains, strains, cuts, and fractures. Sleds can reach speeds of up to 25 miles per hour. The most dangerous injuries are to the head and neck. Collisions with motor vehicles are particularly dangerous.

Guidelines to Prevent Injury

- The area for sledding should be free of obstructions such as trees, rocks, and posts. The potential path of the sled should not cross streets, water, or any drop-offs. Ideally, the area chosen will be specifically designated for sledding. Never allow a sled to be pulled by a motor vehicle.
- Helmets should be worn by all children, especially those younger than 12.
- All children should have adult supervision.
- Make sure that children or adults supervising children control sledding "traffic" to make sure that active sledders don't run into sledders who are finished or who are walking back up the hill.
- Sit on a sled facing forward. Headfirst sledding is more dangerous.
- Sledding should be done in well-lit areas, if done in the evening.
- Physical and mental fatigue may be factors that contribute to injury risk.
- Sleds with steering mechanisms are safer than unsteerable products such as toboggans or discs.
- Plastic sheets or other objects that can be penetrated by rocks or vegetation should not be used.
- Be aware of conditions.
- Hydrate regularly with water and/or warm fluids.

Summary

Sledding can be a truly fun activity and perhaps one of the few pure sources of entertainment that is still available to kids. As long as the above guidelines are followed, sledding can also be a safe activity.



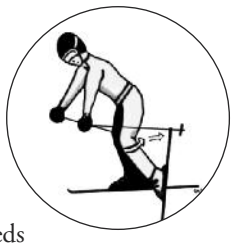
Know Your Ability and Prevent Knee Injuries on the Slopes

By Kevin Shea, MD, and Noah Archibald-Seiffer

For over a century, downhill skiing has been at the forefront of popular, recreational winter activities. Like any other specialty sport, skiing comes with a unique set of physical demands and risks. While continuing advancements in equipment have created decreasing trends in most ski injuries, knee injuries have remained static, and in some studies, increased in the past forty years.[1,2] It is estimated that there are approximately 100,000 acute knee injuries in North America in recreational skiers annually.[3] Studies have identified four common mechanisms by which most of these injuries occur:



- **Valgus-external rotation** (falling forward and losing control of the skis)
  This commonly occurs at high speeds when the inside edge of one of the skis catches the snow, causing the skier to fall forwards and the lower leg attached to the ski to rotate outwards.[8–11] Studies have found that this is often the most common mechanism of knee injury in recreational skiers.[10,11]



- **Hyperextension/internal rotation** (center of gravity shifts forward as the skier begins to lose control)
  This occurs when one of the skis catches the snow and rotates inward into the common "snowplow" position and the knee hyperextends, causing injury.



- **Boot induced mechanism** (landing after losing contact with the ground such as after a jump)
  Instead of a proper landing, the back edge of a ski makes contact with the snow first, causing the top of the boot to force the lower leg forward relative to the upper leg, isolating and focusing the landing force on the knee joint.[4,7,8,10,12]



- **Phantom foot mechanism** (falling backwards)
  In this injury, the skier falls backwards in a seated position, placing the hips below the knees and hyperflexes the knee.[4,7,8,10,12] As modern ski boots become more rigid, this injury is becoming more common compared to the use of previous, more flexible boots.[10]



Like any other recreational activity that has potential hazards, the key to preventing knee injuries while skiing is to enjoy the sport safely and conservatively. Many of the above injuries are the result of high speeds and/or aggressive skiing. A skier being able to gauge his or her own ability level and ski accordingly is perhaps the most important factor in minimizing injuries.[8,10,13]

For more information on preventing ski injuries visit www.stopsportsinjuries.org and search "ski injury."

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Sports Medicine Myths vs. Truths

By Matthew Matava, MD, Kevin Farmer, MD, Kevin Shea, MD, Lance LeClere, MD

Preventing and recovering from sports injuries is an ongoing issue for athletes of all ages. Below we address some of the misperceptions about some common injuries and their treatment.

Myth: Throwing curveballs leads to the highest risk of injury in young pitchers.

Truth: Overuse, high pitch counts, and poor mechanics are the highest risk factors for injury. Throwing only fastballs with inappropriate rest and high pitch counts is a significant risk in young arms.

Myth: A reconstructed ACL is stronger than the original ACL.

Truth: An original ACL is always stronger than one that has been reconstructed from foreign materials. No reconstruction allows an athlete to perform better than the native tissues.

Myth: A dislocated finger takes longer to heal than a fractured one.

Truth: Fractures are typically worse in terms of prognosis and return to play than ligament injuries such as dislocations.

Myth: Both heat and ice should be used immediately following an injury.

Truth: Ice should be used after an injury in order to reduce inflammation and inhibit pain. Heat should be used prior to exercise to warm and stretch injured soft tissues.



Myth: A patient is able to throw faster following ulnar collateral ligament reconstruction ("Tommy John" surgery).

Truth: A common myth about Tommy John surgery is that having surgery when the ligament is not torn will add speed/strength to a player's pitches. Many players will begin to lose accuracy and speed because of pain, muscle fatigue, and ligament damage before their ligament ruptures completely. Having surgery on a healthy ligament will not improve a player's performance.

Myth: An ankle sprain is worse than an ankle fracture.

Truth: An ankle fracture typically takes longer to heal than a sprain and occasionally requires surgery. Even "high" (eversion) ankle sprains, which take longer to heal than the more common "low" (inversion) sprains heal sooner than most true ankle fractures.

Myth: Weight lifting in preadolescents and adolescents causes growth plate injury.

Truth: Weight lifting and more generally, strength training, requires proper technique to avoid injury. While a few older, retrospective case reports have demonstrated growth plate injury due to weight lifting, these injuries were caused by improper technique, inadequate adult supervision/direction, or inappropriate weight selection. With the exception of these settings, youth resistance training can be done safety. Appropriate supervision, technique, and loads are important to ensure safer training with minimal risk of injury.

AOSSM

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About AOSSM and *In Motion*

As a world leader in sports medicine education, the American Orthopaedic Society for Sports Medicine (AOSSM), we have designed the publication to highlight relevant information for multiple age groups from exercise and rehabilitation to nutrition and psychology.

This important educational tool is published quarterly and distributed electronically.

AOSSM members can add their practice name and logo to *In Motion*. Personalizing *In Motion* is an easy way to get pertinent, patient-friendly sports medicine information to your patients with just a click of a mouse. For more information, please e-mail Lisa Weisenberger at lisa@aossm.org or contact the Society at 847/292-4900.

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Variety of Tape Techniques Aid in Different Ways

By Robert Gray, ATC

Kinesio Taping has been around for more than 25 years, assisting the sports medicine practitioner in the areas of pain management, sports performance, physical therapy, and athletic training. This taping method was designed to facilitate the body's natural healing processes while allowing support and stability to the muscles and joints without restricting the body's range of motion. The tape was designed with a texture and elasticity, close to the tissue of the human body. There are 3 main taping techniques recognized in North America. These techniques are:

1. White Athletic Taping

This is the most common technique. The white tape is extremely rigid and usually requires pre-wrap prior to application. It is used for both acute and preventative measures, and if left on for an extended period of time, may cause skin irritation, due to moisture entrapment and muscular compression. The primary advantage of this technique is to limit the motion and help stabilize an injured joint (e.g., ankle sprain).

2. McConnell Taping

This technique is a bracing or supportive measure using a super-rigid, cotton mesh highly adhesive tape. It is most commonly used in knee conditions, shoulder dislocations, and back, foot, and hip impingement syndromes. It may be left on for an extended period of time without causing skin irritation (<18 hours). This technique may affect the biomechanics of the patient.

3. Kinesio Taping



This technique offers the patient or athlete both the support and rehabilitative properties of the affected area. This technique uses a specifically designed tape that will allow the body's full range of motion. Because there is no compression to the skin and it is light to the touch, this tape can be worn over a period of three to five days. The tape may increase circulation in order to rehabilitate and relieve pain to the affected area. This technique can be used for many clinical conditions.

Be sure to speak with your athletic trainer or sports medicine professional to determine the best taping technique for a given issue or condition.