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Finding the Right Cleat for the Job

By Jeanne Patzkowski, MD, and Brett Owens, MD

Cleats are a class of athletic shoes with protrusions, or studs, on the sole of the shoe. Cleats are typically used in sports played on grass or turf surfaces, such as football, soccer, baseball, and lacrosse. The number of different brands and models of commercially available cleats can at times be overwhelming, leading the athlete to wonder which type of cleat is best for their chosen sport.

Cleats may be rubber or metal, and permanently attached or removable. Metal cleats are not allowed in certain sports due to risk of injury to other players, and athletes should be aware of these restrictions. Different sports may require certain types of cleats to account for variations in playing surfaces and athletic demands. Cleats are offered in firm, hard and turf conditions. Rounded cleats are typically rubber and located around the outside of the shoe, with most of the cleats located in the toe region. Blade cleats are more rectangular in shape with varying orientations based on their location in the shoe.

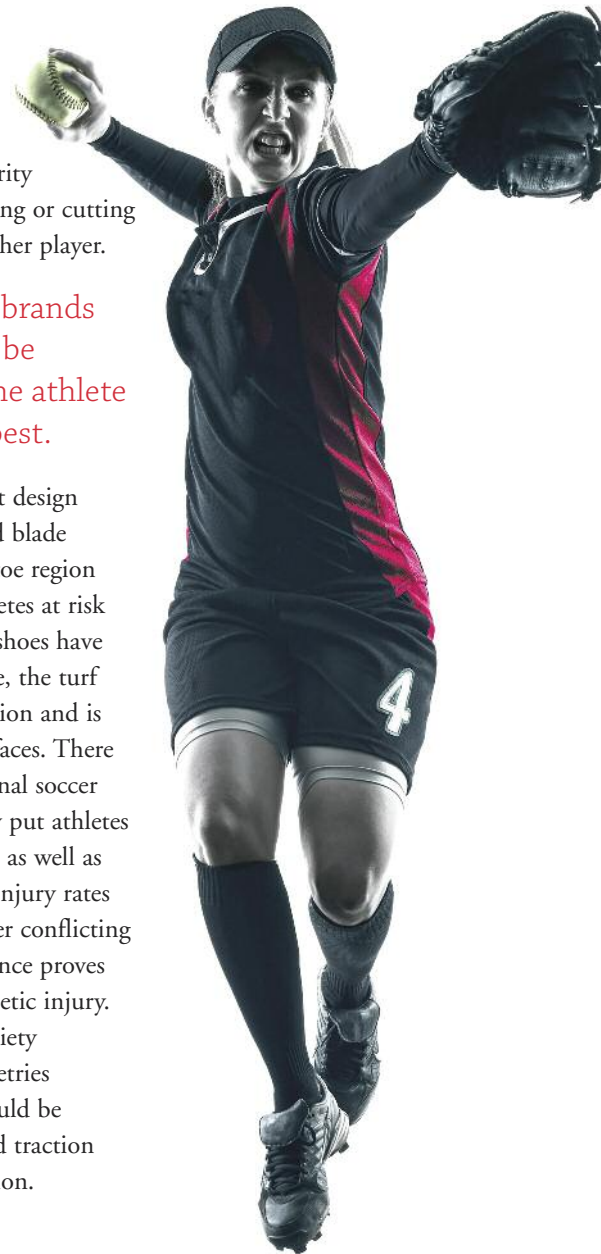
The ideal cleat will give the athlete the appropriate level of traction for the typical playing surface. Too little traction leaves the athlete at risk for falls, particularly in wet or muddy conditions. However, excessive friction may “lock” the foot in place and put the athlete at risk for injury. This is a particular concern

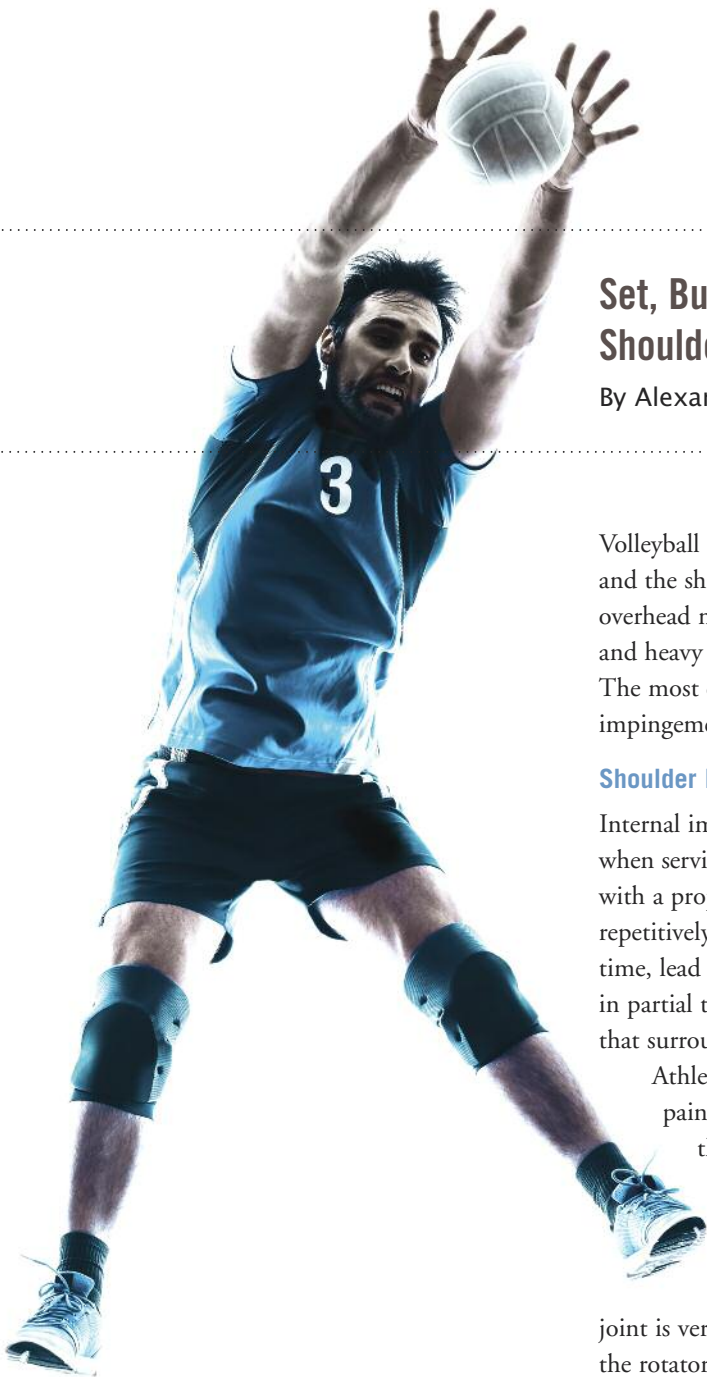
for knee injuries, such as anterior cruciate ligament tears, as the majority of these injuries occur during twisting or cutting maneuvers without contacting another player.

The number of different brands and models of cleats can be overwhelming, leading the athlete to wonder which one is best.

Many studies have looked at cleat design on risk of injury. Both rounded and blade cleats may increase pressure in the toe region of the foot, potentially putting athletes at risk for foot bone fractures. While turf shoes have been found to decrease this pressure, the turf shoe provides significantly less traction and is not the ideal shoe for “natural” surfaces. There has been some concern in professional soccer leagues that blade cleat designs may put athletes at higher risk for outer foot injuries as well as knee injuries. Research comparing injury rates between round and blade cleats offer conflicting results, and no clear scientific evidence proves a link between blade cleats and athletic injury.

In summary, the athlete has a variety of cleat materials, shapes and geometries to choose from. The right cleat should be comfortable and provide the needed traction regardless of cleat shape or orientation.





Set, Bump, Spike, and Remember to Keep Shoulders Free of Injury During Volleyball

By Alexander Golant, MD

Volleyball involves repetitive and strenuous use of the upper extremities, and the shoulder joint is at risk for both acute and overuse injuries. The overhead motions such as serving, spiking, and blocking can place sudden and heavy strain on a number of structures around the shoulder joint. The most common shoulder injuries in volleyball players include internal impingement and labrum tears.

Shoulder Internal Impingement

Internal impingement of the shoulder may result from improper techniques when serving or spiking the ball, or from extensive overuse of the arm, even with a proper technique. Overhead athletes, including volleyball players, repetitively place the arm into extreme positions. This motion may, over time, lead to excessive stretching in the front part of the shoulder, resulting in partial tears of the rotator cuff and tears of the labrum (ring of cartilage that surrounds the shoulder socket).

Athletes with shoulder internal impingement typically complain of pain with overhead activities, especially during the wind-up part of the serve or spike. The condition is usually diagnosed by a careful physical examination; special imaging tests such as an MRI or an ultrasound. The typical initial treatment for internal impingement is non-surgical, unless the tears are significant.

Stretching of the shoulder to properly balance the shoulder joint is very important, and is also combined with exercises to strengthen the rotator cuff and normalize motion of the shoulder blade. The more severe cases may require surgical intervention to repair the rotator cuff tear and/or the labrum, and possibly to tighten the front part of the shoulder.

SLAP Tears

The other injury seen relatively commonly in volleyball players, as well as in other overhead athletes, is a tear of the superior labrum, called the SLAP tear. The labrum—the ring of cartilage attached to the rim of shoulder socket—functions primarily to increase stability of the shoulder, and serves as an attachment for the shoulder ligaments and the biceps tendon. These tears typically occur from repetitive motions where the biceps pulls back on the arm as it is brought into rotation—a movement typical in overhead sports.

A SLAP tear may cause deep-seated shoulder pain, weakness of the arm, including an occasional “dead arm” sensation, as well as clicking and



To prevent injuries and overuse conditions of the shoulder, a volleyball player should have a regular training program with stretching and strengthening exercises.

catching sensation in the joint. Sometimes these tears allow joint fluid to leak out and form a cyst, which may compress the nerves that supply muscles of the rotator cuff. In such a case the athlete may present with no pain but complaining of weakness with overhead motion, for example a weak serve. Physical examination may reveal weakness of some of the rotator cuff muscles even without any tears of the rotator cuff. In these cases, surgical treatment to repair the SLAP tear and remove the cyst is warranted. The repair is typically done arthroscopically, and requires about six months of recovery and rehabilitation prior to return to overhead sport, such as volleyball.

Prevention

While the shoulder of a volleyball player is subject to high forces and potential for injury, significant problems can be avoided with a proper training program and adequate time for rest and recovery. Volleyball players may be particularly predisposed to overuse shoulder injury if they have inadequate core strength, as well as abnormal position/motion of the shoulder blade. In order to prevent injuries and overuse conditions of the shoulder, a volleyball player should participate in a regular training program, which includes stretching and strengthening exercises. Specific attention must be paid to core strengthening. Timely evaluation by a sports medicine physician should be performed for all volleyball players who sustain an injury, or have symptoms that are persistent or recurrent.

For more information on preventing volleyball injuries visit www.stopsportsinjuries.org/volleyball-injury-prevention.

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Jersey Finger

By Michael J. Leddy III, MD

Jersey finger (also known as rugby finger) describes a detachment of the tendon that flexes the tip of the ring finger.

How does Jersey Finger happen?

The injury most commonly affects the ring finger.¹ It often occurs in rugby or football when a player grabs another player's jersey with the tips of one or more fingers while that player is pulling or running away. The force hyperextends the tip of the finger at the joint while the other portion of the finger is flexed. This results in rupture of the tendon at or near its attachment. The injury can also occur in sports that require a lot of arm and hand strength, such as rock climbing and wrestling.

The athlete usually reports feeling a "pop" and cannot bend the fingertip. There is pain along the surface when touched and also into the palm. A lump may be present along these areas along with swelling and bruising.

Treatment

Jersey finger usually requires surgical intervention. Early recognition and treatment of these injuries increases success of repair and return to play. Seeing a trained sports medicine professional as soon as possible following the injury is critical for recovery.

Rehabilitation

Post-operative care includes splinting and occupational therapy. This is to prevent stiffness and scarring. Return to sport is usually 4–6 months to allow for full tendon healing.

1. Manske PR, Lesker PA. Avulsion of the ring finger flexor digitorum profundus tendon: an experimental study. *Hand*. 1979.10 (1): 52-5.



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.

Medical Editors

Bruce Reider, MD
Brett Owens, MD

Managing Editor

Lisa Weisenberger

Contributors

Alexander Golant, MD
Michael J. Leddy III, MD
Alexander K. Meininger, MD
Brett Owens, MD
Jeanne Patzkowski, MD



Prepare for Ski Season Before It Starts

By Alexander K. Meininger, MD

Physical fitness is the foundation of recreational and elite skiing performance. Fitness is what allows elite skiers to compete at their highest levels under extreme conditions. Fitness, however, plays not only a major role in skiing performance but in injury prevention. Appropriate levels of strength, endurance, and conditioning are necessary to safely meet the demands of skiing. Achieving a higher level of fitness is therefore, an obvious way to enhance your ski performance and enjoyment.

What types of exercise should my preseason ski training include?

A balanced training program focuses on aerobic fitness, strength training, core stability, and balance.

Aerobic fitness is essential to enduring a long day on the slopes or the racecourse. Both low and high intensity training are important to maximize the benefit. Cross training is an excellent way to build base fitness. Lower intensity workouts are maintained without losing your breath. These can be done for 30–45 minutes three or more times per week. Popular methods include lower extremity focused exercises such as road and off-road cycling, and jogging. Swimming is also a great way to build cardiovascular base fitness.

High intensity conditioning focuses on building the explosive power of the

anaerobic system. Interval exercises are a great way to improve your stamina, strength, and speed on the slopes. Thirty-second or one minute sprints nearing your maximum potential can be repeated on the bike, the trail, or the treadmill.



Consult your physician or trainer to create a program that is specific to your needs and desires for improvement on the ski slope.

Strength training is also critical to preseason ski conditioning. Weight room exercises focused on the quadriceps, hamstrings, calves, and abductors should be targeted. Exercises such as squats and lunges challenge different muscle groups. Weight lifting exercises can be done one or more times per week.

Plyometrics are dynamic exercises that stretch and contract your muscles and build your anaerobic potential at the same time. Common examples include jumping, squats, and single leg hops. Plyometrics require maximum force over a short period of time and help build power, strength, and agility. They can be an excellent way to prepare for skiing, though they are used with caution and avoided in some young athletes or those with prior injury.

For more information on preventing ski injuries visit www.stopsportsinjuries.org/skiing-and-snowboarding-injury-prevention.