

Common Basketball Injuries

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Given the amount of lateral movement, pivoting, and jumping that is required to be successful in a sport such as basketball, it is no surprise that participating athletes are at risk for injury. In fact, there are 1.6 million injuries related to basketball, reported each year. Of these injuries, 574,000 occur in children ages 5-14. The majority of basketball injuries involve ankle sprain (40%). Knee and calf injuries are the second and third most reported injuries. Interestingly, at the high school and recreation levels, most injuries occur in practice, with most injuries occurring during rebounding. At the collegiate and professional levels, the majority of injuries occur during competition. Also of note, is the fact that a large proportion of basketball injuries are non-contact injuries.

In previous articles, the two most common basketball injuries, ankle sprain and ACL tear were covered. For more information regarding these injuries, please refer to the archived news section of the website at www.lifestrengthpt.com or www.athelites.com. This article will cover the third most common basketball injury, which is calf strain.

Calf strain involves a partial tear of the muscles located on the back of the lower leg. The calf is composed of two muscles that provide force for jumping and running. The more superficial muscle is named the *gastrocnemius* and the deeper muscle, the *soleus*. Injury can occur to either calf muscle depending on the mechanism of injury. Typically, injury is caused by stretching beyond the amount of tension that the muscle can withstand, i.e. sudden overstretch of the calf muscles that occurs when landing on another player's foot. Other mechanisms of injury include stress that the muscles are not ready for, such as explosive jumping without proper warm-up, or a blow to the calf muscle.

Muscle strains are graded based on severity on a scale of I to III. Grade I strains involve some microtearing of the tissue and typically resolve in 2 weeks. Grade II strains involve partial tearing of the muscle fibers and typically require 1-2 months to heal. Grade III strains are complete tears of the muscle and may require surgery to achieve full recovery. Larger muscle tears are often characterized by bruising seen 1-2 days after injury.

Treatment of calf strains varies depending on the grade, but there are elements of treatment common to all strains. Treatment follows the PRICES acronym.

P – Protection from further injury through bracing, taping, etc.

R – Rest. In minor cases, may mean “relative rest”, or continuing the activity, but at a decrease in intensity. In more severe cases, may call for complete rest with non-weight bearing.

I – Ice, to decrease pain and inflammation. Apply as soon as possible.

- C – Compression, wrap injured muscle with compression bandage or neoprene sleeve to facilitate circulation and provide a degree of protection.
- E – Elevate the lower extremity above the heart to reduce swelling and prevent pooling of fluid in the injured area.
- S – Support both passively by bracing and actively through rehabilitation and coordination drills.

Physical Therapy treatment may be necessary following the acute injury to reduce pain and inflammation and regain flexibility and strength of the muscle(s) involved. In addition to physical therapy, agility training and sport-specific training is essential to prevent re-injury.

As noted above, a large number of basketball injuries, calf strains included, are non-contact injuries. There are a few strategies that should be employed to prevent injury and/or recurrence. Adequate stretching to maintain proper length and flexibility of the calf muscles is important, as well as increasing strength to make the calf muscles more resistant to injury. It is essential to ensure a proper warm-up before beginning play or before drills that require fast speed or explosive jumping. In addition to the strategies noted above, it is advisable to spend considerable time developing coordination and agility. The performance of sport-specific training that places similar demands on the muscles that they would encounter in competition goes a long way in preventing sprains and strains. It is best to perform these activities under supervision so that incorrect movement patterns can be identified and rectified prior to competing.

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