

Softball Injury prevention

By: Dr. Christopher Dean, CC, EMT, ART of Premier Sports and Spine Center

www.premiersportsandspine.com

Sports related injuries account for a substantial proportion of non-fatal injury and disability in the United States. Estimates from the National Health Interview Survey indicate that approximately seven million individuals receive medical attention each year for sports related injuries. Emergency room visits alone are costly—medical charges for US emergency department visits for sports injuries put this figure at roughly \$500 million annually.

There is an estimated 2,636,000 fast-pitch softball participants in the U.S. (2010). That's only fast-pitch, with such a high number of participation in this sport, we need to be aware of the possible injuries that can occur and how to prevent them from happening, or treat them if an injury occurs.

Softball players are vulnerable to a wide range of injuries, some acute and some chronic. A few are potentially serious, though the game is generally considered less dangerous than baseball. Collision with the ball or another player can cause contusions or fractures in the face, upper or lower body.

Some acute injuries that can possibly occur during softball include twisting the knee during running or diving with injury to the anterior and posterior cruciate ligament or ACL/PCL, tearing of the meniscus, or spraining the ankle. But more commonly, softball players suffer from a range of overuse injuries including rotator cuff tendonitis, an acute irritation of the tendons and muscles of the shoulder. This injury is most common in pitchers. Knee tendonitis, an irritation of the tendons and muscles of the knee is another common acute injury. The frequent stops and starts involved in the game are particularly stressful to the patellar tendon and the other ligaments in the knee.

Overuse injuries tend to produce sore or aching discomfort, which worsens with continuation of the activity and may last after play has stopped. Pain that follows is due to inflammation and swelling of injured tissues. Rotator cuff tendonitis is one of the most common injuries in both baseball and softball. (Elbow injuries on the other hand are largely restricted to baseball, due to the different nature of the pitch.)

A significant percentage of softball pitching injuries are shoulder and rotator cuff problems caused by too much pitching, often by using incorrect pitching mechanics. Although there is no single recommendation on the number of pitches, innings pitched, or rest between pitching appearances that can apply to all ages and sizes of pitchers, some restraint is advised. A pitcher who repeats the same pitch over and over faces the potential of developing an overuse injury.

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Leg and ankle sprains and various contusions are quite common but often - unlike overuse injuries - do not require as significant of a time off the field. Diagnosis of injuries may initially be based on the nature of pain involved and the mechanism of injury. When the pain is stabbing or acute (rather than a dull ache), a mechanical problem is often to blame. Such pain is often the result of tearing injuries. Mild overuse injuries may be treated with manual soft tissue therapies, rest, as well as with alternating ice and heat on the affected area, and anti-inflammatory medication. Chronic overuse injuries may require avoidance of stressful activity in the injuries region and in severe cases, surgical intervention. Fractures and more severe sprains likewise necessitate medical care from your local sports medicine physician.

Musculotendinous overuse injuries; (particularly in the shoulder) are common afflictions for softball players. Pre-season training and conditioning are critically important in helping to prevent both overuse injuries and traumatic or sudden injuries like sprains. Strength training and attention to cardiovascular fitness are believed to reduce overuse injuries by over 50% while diminishing the severity of injuries that can occur. Attention to proper technique, particularly during throwing activity can help reduce the likelihood of overuse injuries as well as sudden injuries including muscle or ligament tearing.

Ligament sprains, muscle strains and bruises account for most of the acute injuries. However, overuse injuries are more common in adolescents than acute injuries. Research studies have shown that up to forty-eight percent of adolescent athletes sustained one injury during their playing season. Most of the injuries were considered to be minor where no playing days were lost.

Overuse injuries occur over time due to stress on the muscles, joints and soft tissues without proper time for healing. They begin as a small, nagging ache or pain, and can grow into a debilitating injury if they aren't treated early.

Acute or traumatic injuries occur due to a sudden force, or impact, and can be quite dramatic.

Many sports injuries result from overuse, lack of proper rest, lack or proper warm ups or poor conditioning

Some more common softball injuries include:

Shoulder

Shoulder tendinitis, bursitis and impingement syndrome, torn rotator cuff, frozen shoulder (adhesive capsulitis), shoulder separation, rotator cuff tendonitis, shoulder instability, glenohumeral arthritis, scapular dyskinesis.

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Elbow

Little league elbow (medial epicondylitis) also called golfers elbow, bursitis of the elbow, tennis elbow (lateral epicondylitis).

Wrist and Hand

Wrist sprains, finger fractures, wrist tendinitis, tenosynovitis

Back

Muscle strains of the upper, middle and lower back, low back pain, herniated discs, backaches and stress caused from poor technique or posture, spondylolysis and or spondylolisthesis,

Knee

Anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL) injuries, medial collateral ligament (MCL) and lateral collateral ligament (LCL) injuries

Ligament injuries to the knee are very common in sports that require stopping and starting or quickly changing directions. These extreme forces on the knee can result in torn ligaments. The anterior cruciate ligament (ACL) and the medial collateral ligament (MCL) are the most often injured, but the posterior cruciate ligament (PCL) and the lateral collateral ligament (LCL) can also be injured. Cruciate ligament injuries don't always cause pain, but typically cause a loud "pop." Most of these injuries are confirmed with an MRI

Torn Knee Cartilage

Torn knee cartilage is usually a torn meniscus. These small, "c" shaped pieces of cartilage act as cushions between the thigh bone (femur) and the tibia (shin bone). There is one on the outside (lateral meniscus) and one on the inside of the knee (medial meniscus). Meniscus tears are often the result of twisting, pivoting, decelerating, or a sudden impact. It can be identified by various manual tests a sports chiropractic physician can perform to detect torn cartilage.

Chondromalacia

This term refers to softening and deterioration of the underside of the kneecap that result in a dull pain around or under the kneecap that worsens when walking down stairs or hills, climbing stair other weight bearing activity.

Knee Tendinitis and Ruptured Tendons

Tendonitis is an inflammation or irritation of a tendon often caused by overuse. Tendonitis is often identified due to tenderness at the point where the patellar

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tendon meets the bone, just below the kneecap. Impacts and sudden movements (such as trying to break a fall) can force the quadriceps muscles to contract forcefully and cause the quadriceps tendon to be strained or possible tear (rupture).

Miscellaneous Pain and Injuries

Blisters

Blisters are fluid-filled sacks on the surface of the skin that commonly occurs on the hands, or the feet.

Delayed-Onset Muscle Soreness

Also called "DOMS," this muscle pain, stiffness or soreness occurs 24-48 hours after particularly intense exercise or a new program.

Other Knee Pain

In order to treat the cause of the pain, it is important to have an evaluation and proper diagnosis.

Sprains and Strains

These are acute injuries that vary in severity but usually result in pain, swelling, bruising, and loss of the ability to move and use the joint.

Stress Fractures

Stress fractures in the leg are often the result of overuse or repeated impacts on a hard surface

The following tips can also help avoid injury:

- Always properly prepare before a game with warm-up and stretching. Stretching is one of the most under-utilized techniques for improving athletic performance, preventing sports injury and properly rehabilitating sprain and strain injury. The most productive time to stretch is after working up a sweat during your warm-up or after your event during the cool down.

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- Comprehensive pre-season conditioning aids flexibility, endurance and strength, reducing likelihood of injury.
- Proper technique, especially in pitching, can help limit both traumatic and overuse injuries.
- Proper headgear protects the player from blows to the ear or temple area from ball impact.
- Proper energy absorbing chest padding should be used by catchers.
- Mouth guards should be used to prevent dental injuries.
- Fences, walls and posts should be padded to help prevent injury, should players run in to them attempting to catch the ball.

See your sports medicine provider early in an injury versus waiting. The sooner you get it addressed the sooner you can get back on the field.

My name is Dr. Christopher Dean and I work as a Sports Chiropractic Physician at Premier Sports and Spine Center in Eden Prairie. I specialize in injury management and performance enhancement in athletes of all ages, from beginners to weekend warriors. It is my goal to help provide the best care to you so you can continue to play with a cutting edge!

Through the soft tissue treatments that I perform, I have been able to drastically decrease the injury rate and loss of playing time due to injury of my patients, thus saving the players loss of playing time and at the same time helping them reach their full potential. I understand the importance of determining the cause of my patients' condition and getting to the root of the problem versus offering only symptomatic relief. At Premier Sports and Spine Center, we pride ourselves on our treatment model, which allows us to take time to listen to patients and to offer extended appointments for all-inclusive treatment.