

PREVENTION AND TREATMENT OF GYMNASTIC INJURIES



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OVERVIEW

Each year, more than 86,000 gymnastics-related injuries are treated in hospitals, doctors' offices, clinics and ambulatory surgery centers. Gymnasts must consistently prepare for the rigorous physical and emotional toils that the sport requires. With the complexity of routines, the risk of potential injury increases. The most common injuries occur in the ankles, feet, lower back, knees, wrists and hands, often from overuse or simple stress. Injuries are rarely severe, but if left untreated can lead to chronic pain and possibly bone fractures.

WHAT INJURIES OCCUR IN THE UPPER BODY OF GYMNASTS?

Because the upper body is used as a weight-bearing joint in gymnastics, injuries to the shoulder, elbow, and wrist are very common. A wide range of injuries can occur to these joints, but some are more unique to gymnasts, including:

- **Superior Labrum, Anterior-Posterior (SLAP) Lesions in the Shoulder**

SLAP tears may occur during any gymnastic exercise, but ring specialists seem particularly vulnerable. An MRI can be helpful in establishing a definitive diagnosis. The most common treatment for SLAP lesions is arthroscopic surgery. Talk to your doctor about the possible limitations on future performance.

- **Elbow Dislocation**

In an elbow dislocation, ligament tears may occur which require putting the elbow back in place.

However, a careful examination from a qualified physician should occur before resetting the elbow. If the elbow does not go back into place easily, it should be immobilized and the athlete transported to the nearest emergency department. X-rays should then be obtained to evaluate the elbow for any possible fractures. It is important to begin rehabilitation exercises within the first two weeks after the injury, to prevent loss of movement.

- **Wrist Sprains**

In gymnastics, the wrist is subjected to forces that can exceed twice the body weight. The first step in treating these injuries is to determine the training volume of the athlete, relieve symptoms, and prevent an injury from recurring. After injury, gymnasts should avoid extensive pressure on the wrist joint for six weeks. If X-rays are clear and physical examination is normal, the gymnast may gradually resume training under supervision of a physician and/or athletic trainer. If the gymnast is experiencing pain with non-gymnastic activities of daily living, using a brace or cast to immobilize the wrist may be helpful.

WHAT INJURIES OCCUR IN THE LOWER BODY OF GYMNASTS?

The most common gymnastics injuries to the lower body involve the knee and ankle. Lower extremity injuries usually result from the landing and dismount activities that are common in most gymnastic routines.

- **Anterior Cruciate Ligament (ACL) Injury to the Knee**

ACL injuries result when a gymnast lands "short" or over rotated while tumbling, dismounting, or vaulting. MRI is often used to confirm ACL injury. As with other sports, ACL reconstruction is recommended for gymnasts that wish to return to full sports participation. Recent data suggests that return to the same level of sports after ACL reconstruction occurs in approximately 65 percent of athletes.

- **Meniscus Injury to the Knee**

The meniscus is a horseshoe-shaped band of fibrocartilage in the knee which acts as a shock absorber. Injuries to the meniscus are common in gymnastics due to the continuous jumping, landing and twisting that occur. Symptomatic knee injuries often lead to knee arthroscopy and/or partial surgical knee repair. Surgery for meniscal tears can involve removing a torn piece of meniscus or repair of the tear. Rehabilitation after surgery involves knee strengthening exercises. After surgery a patient will need to restrict activity for three to six months to allow healing.

- **Achilles Tendon Injury**

Gymnasts can suffer from a variety of injuries to the Achilles tendon located on the back of the heel, as a result of the repetitive stress of jumping and landing. Achilles tendonitis results in calf soreness that is aggravated with jumping and landing. Treatment should initially consist of ultrasound, stretching, activity modification, and calf exercises. Foot immobilization for

seven to ten days may be beneficial for severe symptoms. After an Achilles tendon rupture (tear) there is significant pain and an inability to actively flex the foot. Options for treatment vary and can include both non-operative immobilization treatment or open surgical repair. Speak with your physician for the most appropriate solution.

WHAT ARE THE TYPES OF LOWER BACK AND SPINE INJURIES IN GYMNASTS?

Low back pain is common for gymnasts at all levels. The cause of low back pain can include muscle strain, ligament sprain, fracture, and/or disc disorders. Frequently, low back pain will worsen with activity, especially with extension movements (arching the shoulders backwards). Low back pain in gymnasts related to muscular strain or ligament sprain usually responds to rest and physical therapy exercises, focusing on the muscles of the low back, buttocks, abdomen and thigh. Occasionally, low back lumbar support braces can help improve symptoms. An MRI or a bone scan are often helpful to rule out more significant injuries with worsening back pain or pain that persists despite rest and therapy. It is generally accepted that a gymnast can return to action when they become pain-free.

HOW CAN INJURY BE PREVENTED?

Most gymnastics injuries can be prevented by following proper training guidelines, using safety equipment, and incorporating the following tips:

- Wear all required safety gear every time while competing or training. Special equipment may include wrist guards, hand grips, footwear, ankle or elbow braces and pads.
- “Do not play through the pain.” If you are hurt, see your doctor and follow instructions for treatment and recovery.
- Make sure first aid is available at all competitions and practices.
- Inspect equipment to ensure it is in good condition, including padded floors, secured mats under every apparatus, and safety harnesses for learning difficult moves
- Insist on spotters when learning new skills
- Warm-up muscles with light aerobic exercise, such as jumping jacks or running in place, before beginning training or new activities

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