

Gymnastics safety

A PARENT'S GUIDE FOR GETTING KIDS BACK IN THE GAME

Gymnastics injuries send more than 26,000 young athletes to the emergency room each year. As the complexity of routines increases, so does the athlete's risk of injury. This reference guide provides information on the most common gymnastics injuries that require treatment.

ANKLE INJURIES

The most common injury in sports is a **lateral ankle sprain**. This injury occurs in gymnastics by rolling the ankle over the outside of the foot. This often occurs when landing from a jump, taking a misstep during a dismount or planting awkwardly during a tumbling routine. A lateral ankle sprain causes damage to the ligaments just below the bone on the outside of the ankle. In some cases a "pop" is felt or heard by the athlete.

Treatment recommendations vary with the severity of the injury:

- Mild sprains require rest, but not necessarily medical treatment (follow the PRICE treatment plan, printed on back).
- Injuries with persistent swelling, pain or any deformity should be seen by a physician.

KNEE INJURIES

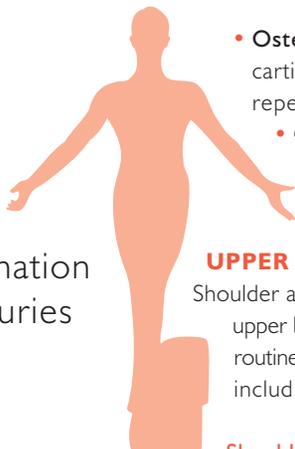
A common injury in gymnastics is an **Anterior Cruciate Ligament (ACL) sprain or tear**, which occurs when the knee is twisted forcefully, or hyperextended. This often occurs when landing from a jump or planting awkwardly during a tumbling routine. Athletes with a damaged ACL often describe a "pop" at the time of injury, followed by a lot of swelling within a few hours.

Athletes should see a pediatrician or pediatric sports medicine physician if pain and/or swelling persist after PRICE treatment. In addition:

- In younger athletes, bone maturity helps to determine the treatment plan. Injury to an open growth plate requires special consideration by a pediatric orthopedic specialist.
- Training in proper jumping and landing technique may help to prevent this injury.

Knee pain that comes on slowly over time can indicate other problems, such as:

- **Patello-femoral Pain Syndrome (Runner's Knee)** – pain in the front of the knee related to muscle and tissue stress around the knee cap. This can be addressed with proper training in physical therapy.



- **Osteochondritis Dissecans** – a defect in the knee's cartilage that can become evident over time during repetitive activity such as jumping.
- **Osgood-Schlatter Disease** – stress-related inflammation in a growth center at the front of the knee.

UPPER BODY INJURIES

Shoulder and wrist injuries are common in gymnastics because the upper body is required to bear the body's full weight during routines. A wide range of injuries can occur to these joints, including:

Shoulder injuries

Gymnasts can suffer **overuse injuries** to their shoulders when they repeatedly use their shoulders as a weight-bearing joint. Overuse injuries occur when tissue is damaged by repetitive-motion activities over time. Without adequate time for recovery, the tissue cannot adapt to the demands placed on it and further damage is likely.

Common shoulder injuries in gymnastics include:

- **Shoulder Instability** – the ligaments and capsule that hold the shoulder in place may be loose and lead to symptoms in some individuals.
- **Shoulder Tendonitis** – inflammation and pain caused by repetitive use of the shoulder muscles when the arm is brought above the athlete's head.

Wrist Injuries

Tumbling routines in gymnastics subject the wrist to forces greater than twice the athlete's body weight. This can lead to overuse injuries in the hand, wrist and forearm. Tissue such as bone, cartilage or tendon can become damaged by repetitive pounding on the hands, which causes the wrist to be forcefully bent backward.

Without adequate time for recovery, the tissue cannot adapt to the demands placed on it. Common wrist injuries in gymnastics include:

- **Wrist Sprains** – sudden or repetitive stretching of the ligaments in the wrist. This is caused by landing on the hand and forcing it backward, placing added stress on the ligaments of the wrist.
- **Carpal Stress Fractures** - fractures to the small bones of the wrist. Fractures can occur over time when these bones are continually compressed against themselves and the bones of the forearm.

Damage caused by repetitive stress in the shoulders and wrists leads to tissue inflammation that causes pain. Symptoms include:

- Pain when performing the activity or sport.
- Intermittent swelling.
- Decreasing performance.
- Dull pain even at rest.
- Loss of motion at the shoulder or wrist.

continued on back

The Sports Medicine Center at Children's offers the only comprehensive, integrated program in North Texas specifically designed for young and growing athletes. The center goes beyond treatment and rehabilitation of traumatic injuries that occur on the playing field to problems associated with sports participation, including cardiac disorders, asthma and nutrition.

The Children's Sports Medicine Center at the Legacy campus in Plano features a 5,000-square-foot facility complete with diagnostic imaging capabilities, a dedicated sports therapy gym, video motion analysis, isokinetic muscle testing and state-of-the-art rehabilitation equipment – all geared to provide your child with the best medical evaluation by the experts treating young and growing athletes.

Sports Medicine Center

Children's Medical Center at Legacy
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For more information visit
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UPPER BODY INJURIES *continued*

If symptoms persist, athletes should see their pediatrician or a pediatric sports medicine physician. In each consecutive season, repetitive maneuvers by certain body parts can lead to fatigue and long-term damage.

BACK PAIN

Gymnastics puts a lot of demand on a young athlete's back due to repetitive maneuvers that require hyperextension of the back (such as back walkovers or back bends). Some injuries to the back occur suddenly, and are commonly known as a **back strain**. Others occur more gradually, especially if the body doesn't have time to recover properly.

Over time, repeated hyperextension of the low back can cause:

- **Spondylolysis** – a stress fracture of the bones in the lower spine, or lumbar vertebrae.
- **Spondylolisthesis** – the lumbar vertebrae slip forward, if an athlete with a stress fracture continues to participate in the sport. This is much more serious, and can lead to continued pain that may require treatment.

Therefore, it is important that gymnasts experiencing low back pain be restricted from activity until evaluated by their pediatrician or a pediatric sports medicine specialist.

WEIGHT MANAGEMENT

Gymnasts should aim to stay close to their competition weight in the off-season in order to avoid dangerous weight-cutting practices during the competitive season. Weight-loss practices such as dehydration by excessive sweating, or drinking nothing or very little, spitting, using laxatives and diuretics and fasting/starvation are dangerous and can lead to severe health problems. Dehydration prior to competitions also decreases strength and performance.

Gymnasts who desire to lose weight should not lose more than 1-2 pounds a week to avoid break down of lean body mass. Once a gymnast achieves a healthy body weight, weight maintenance should be emphasized.

Weight loss is best achieved using a combination of reducing caloric intake and increasing calories burned. Nutrition tips for good weight control include:

- Give your body energy from sources of carbohydrates, proteins and fats. Do not omit any food groups.
- Choose whole-grain foods, lean protein and healthy fats at meal times.
- Eat a balanced diet rich in fruits, vegetables and fiber.
- Drink calorie-free beverages; eat fresh fruits instead of drinking fruit juices.
- Watch your portion sizes.
- Choose low-fat dairy products.
- Do not skip meals. Eat a healthy snack if hungry in between meals.
- Limit high-calorie foods with added sugar and fat – read food labels to compare calories and look for reduced-sugar and reduced-fat varieties of your favorite food products.

BUMPS, BRUISES, TWISTS & MUSCLE STRAINS

These can affect all areas of the body. Recommended treatment is the **PRICE** formula: **P**rotect the area with a sling or crutches, if necessary.

Rest the injured area.

Ice the injury for 20 minutes at a time. Do not apply the ice directly to the skin.

Compress the injured area with a wrap. Do not pull tightly, as this can cut off circulation.

Elevate the injured area above the heart, if possible.



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