

# Gymnastics safety

## A parent's guide for keeping kids 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, which occurs in gymnastics by rolling the ankle over the outside of the foot. 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 varies with the severity of the injury.

- Mild sprains require rest but not necessarily medical treatment; (follow the **PRICE** treatment plan, printed on pg. 2).
- 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. Athletes often describe a "pop" at the time of injury, followed by a lot of swelling within a few hours after the injury.

Athletes should see their pediatrician or pediatric sports medicine physician if pain and/or swelling persists after **PRICE** treatment (printed on pg. 2). 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.
- Core strengthening and training in proper cutting, jumping, and landing technique may help to prevent this injury.

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

- **Patellofemoral pain syndrome** (runner's knee) — pain in the front of the knee related to muscle and tissue stress around the knee cap; 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.

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.
- **Shoulder tendonitis** — inflammation and pain caused by repetitive use of the shoulder muscles when the arm is brought above the head.

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.
- **Carpal stress fractures** — fractures to the small bones of the wrist.



# Gymnastics safety (cont.)



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, dull pain even at rest, intermittent swelling, loss of motion at the shoulder or wrist, decreasing performance.

## Back pain

Gymnastics puts a lot of demand on a young athlete's back due to repetitive maneuvers that require hyperextension of the back. 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 slips forward, if an athlete with a stress fracture continues to participate in the sport.

## 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. Gymnasts who desire to lose weight should not lose more than one to two pounds a week to avoid breakdown of lean body mass. 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.

## Bumps, bruises, twists, and 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.
- R**est the injured area.
- I**ce the injury for 20 minutes at a time. Do not apply the ice directly to the skin.
- C**ompress the injured area with a wrap. Do not pull tightly, as this can cut off circulation.
- E**levate the injured area above the heart.

## SSM Health Cardinal Glennon SportsCare

SSM Health Cardinal Glennon SportsCare is the premier pediatric sports medicine provider in St. Louis and St. Charles. We provide exclusive, direct access to comprehensive medical care for young athletes.

Specialists your child has access to include adolescent medicine physicians, cardiologists, emergency medicine physicians, neurologists, nutritionists, orthopedists, pediatric psychologists, physical therapists, pulmonologists, radiologists, and rehabilitation specialists. We also keep kids in the game through educational programs and supports for parents, coaches and athletes that focus on injury prevention, proper technique and overall athletic health.

For more information about SSM Health Cardinal Glennon SportsCare or to find a specialist for your athlete, call or text us **24/7 at 314-577-5640**.

Expert care for young athletes by SSM Health Cardinal Glennon Children's Hospital providers, **24 hours a day in the ER at:** SSM Health Cardinal Glennon Children's Hospital, DePaul Hospital, St. Clare Hospital, St. Joseph Hospital-St. Charles, St. Joseph Hospital-Lake St. Louis, Anderson Hospital, and HSHS St. Elizabeth Hospital.

During the COVID-19 pandemic, SSM Health ministries implemented enhanced safety measures, which are evaluated periodically based on COVID-19 transmission numbers. To ensure your protection and that of others, we continue to require face masks upon entry along with ministry-specific screening processes.