



## Gymnastics Injuries

Young athletes, girls in particular, begin gymnastics at earlier ages, spend more time practicing, and perform more difficult skills compared with 20 years ago. Unfortunately, gymnastics also has one of the highest injury rates among girls' sports, with almost 100,000 gymnasts injured each year. These tips can help your gymnast prevent injury and improve performance.

### Common Injuries

Gymnasts must be both powerful and graceful. They first learn to perfect a skill and then work on making their bodies look elegant while performing that skill.

Some injuries, such as bruises and scrapes, are inevitable. Falls that result only in bruises and scrapes generally are not serious and don't require medical attention. Others are unpredictable and sometimes can be devastating. Gymnasts are taught how to fall and land safely to decrease the risk of damage to the spine, head, neck, or wrist.

Other injuries are the result of overuse or repetitive movement, often from kicking and turning on one side more than the other. This leads to muscle or flexibility imbalances, increasing the chance of injury. The gymnast can land in an awkward position, miss her footing on the beam or grip on the bars, or feel pain after practicing a skill over and over. These injuries may be more severe and could keep the gymnast from practicing or competing. Evaluation by a medical professional usually is advisable.

Gymnasts use their arms and legs, putting them at risk for injury to almost any joint in the body. Common injuries include wrist fractures, cartilage damage, anterior cruciate ligament (ACL) tears, knee and low back pain, spinal fractures and herniated discs, Achilles tendon strains or tears, ankle sprains, and shoulder instability. Injuries may result from player contact or a fall, and range from mild to severe. Symptoms may show up right away or hours later.

### Causes of Injury

- insufficient flexibility
- decreased strength in the arms, legs, or core
- poor balance
- imbalances in strength or flexibility (one side stronger than the other)

A gymnast can be a “righty” or “lefty.” This refers to the leg they kick with first when performing handstands, cartwheels, or round-offs, or the direction they tend to turn in doing full turns or twisting. This can leave one side of the body stronger and more flexible than the other. Care should be taken to balance strength and flexibility on both sides.

This chart shows what happens to a gymnast who normally kicks with the right leg when doing a handstand.

	Right side	Left side
Hip flexor strength	Stronger	Weaker
Hip extensors strength	Weaker	Stronger
Core stabilizers strength	Stronger	Weaker
Hamstring flexibility	More flexible	Less flexible
Hip flexor flexibility	Less flexible	More flexible

## Preventing Injuries

Strength training is good for injury prevention. It also keeps gymnasts motivated by helping them progress to the next skill level.

Having a strong core provides the gymnast with a stable base for the arms and legs as they move in different directions. When the core (specifically the transverse abdominis muscle) contracts, it decreases the pressure placed on the lumbar spine. This muscle contracts when you try to draw the belly button toward the spine. Contracting this muscle while performing exercises on a therapy ball or stable surface will strengthen the core muscles. Other good core exercises include planks, bridges, or tuck ups while hanging on the bar.

Flexibility imbalances can occur in the thighs, calf muscles, and hips. Performing stretches several times a day and holding each stretch for 30 seconds will make a difference in flexibility.

## Mental Training

### Fear

Gymnasts are typically viewed as fearless. They not only walk across a four inch beam, but they perform flips and jumps while landing on the beam. It's natural for a gymnast to feel excited, nervous, or afraid when performing a new skill or competing. But if these feelings force a gymnast to lose their focus they may end up “bailing” during a skill (stopping part way through) or not notice that a foot or hand is in an incorrect position to complete the skill safely. It is important for coaches to be prepared to help the athlete land safely if this occurs.

### Perfection

Gymnasts strive for perfection. This can wear on the athlete, causing frustration or lack of enjoyment. Parents should support and talk to their gymnast, but also let them know that if they no longer enjoy the sport it is okay to end participation.

## What is the Young Athlete Program?

UPMC Sports Medicine's Young Athlete Program brings together a network of specialists that provides individualized attention for injury prevention and management.

Our physicians and physical therapists use cutting-edge, science-based techniques to help speed recovery, and quickly and safely prepare the athlete to return to the field of play. Athletic trainers, sports performance coaches, and other experts focus on injury prevention, nutrition, conditioning, and activity-specific training.

Regardless of age or sport, the Young Athlete Program has the expertise, technology, and services to make a difference for your athlete. For more information or to make an appointment, call **412-432-3700** or visit [UPMC.com/SportsMedicine](https://UPMC.com/SportsMedicine).

Our partner, Centers for Rehab Services, offers your young athlete physical therapy services at more than 40 convenient locations. To find an office near you, or to make an appointment, call **412-432-3700**.