



## Swimming Injuries

Swimmers are well versed in early morning practices, team workouts, and living healthy lifestyles. What many may not know is that swimming with poor stroke mechanics or decreased flexibility and strength may cause an overuse injury. This may keep the swimmer out of the sport. But taking part in a strength training and stretching program can help improve the young athlete's muscular and cardiovascular endurance, leading to better stroke mechanics throughout their laps.

### Common Injuries

Neck and shoulder injuries are among the most common that swimmers face. These can include irritation and inflammation in the shoulders, which can lead to rotator cuff tendonitis or tears. They also may experience shoulder impingement syndrome, which is a result of pressure on the rotator cuff muscles from part of the shoulder blade when the arm is lifted overhead.

Other potential injuries include tears in the cartilage around the shoulder socket, neck pain, and low back pain. Stress on the knees can result in pain under or around the kneecap or at the inside of the knee.

### Causes of Injury

- overtraining
- not enough rest periods
- poor stroke mechanics
- poor breathing technique
- poor flexibility or range of motion
- decreased rotator cuff or scapular muscle (shoulder blade) strength
- poor core strength or stability
- decreased hip muscle strength

## Treating Injuries

The best ways to prevent injuries are to warm up properly before swimming, and take part in preseason and in-season strengthening and conditioning programs.

Strength training should focus on rotator cuff and scapular muscles to improve stability of the shoulders. It also should include strengthening of quadriceps (thigh muscles) and hip muscles to improve the kick, specifically for the breaststroke, as well as abdominal and core strengthening.

Using pull-buoys or paddles for gradual resistance in the water also provides sport-specific strengthening. It is important to gradually increase the intensity and length of swims to avoid overtraining. Allow the body proper rest periods between competitions and training sessions. Athletes with pain or soreness that lasts more than 48 hours should be evaluated by a medical professional.

## Preventing Injuries: Stroke Mechanics

**Freestyle stroke:** When breathing, keep the head in line with the body to avoid neck pain or numbness and tingling in the arms. Rotate the body toward the breathing side to avoid turning the neck too far and overreaching with the arms. Breathe equally to both sides to prevent excess stress on one side of the neck.

**Backstroke:** Weak muscles in the front of the neck will tire more quickly than strong ones, resulting in neck soreness with increased laps. Swimmers just starting to swim this stroke should gradually increase both distance and intensity. Rotating the body properly with each stroke also will help decrease stress on the neck and shoulders.

**Breaststroke:** Keep the head in line with the body to avoid increased stress on the neck. Strong thigh and hip muscles will make for a stronger kick and a faster swim. They also help decrease the stress and strain placed on the knees as swimming distance increases.

**Butterfly:** Proper timing of this stroke decreases the possibility of neck, shoulder, or back pain. Focusing on a strong kick and upper body will aid in body position as well as breathing during this stroke.

## 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](http://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**.