



**STOP  
SPORTS  
INJURIES**

SPORTS TIPS

DISTRIBUTED BY:



*A STOP Sports Injuries  
Collaborating Organization*

## ROWING INJURIES

Rowing is an unusual sport in that the athletes sit facing the stern of the boat with their feet anchored in sneakers attached to a foot stretcher. The rowing stroke is a continuous repeated cycle, from a position with the legs extended, elbows flexed, and the oar handle drawn into the body, to the movement of the hands and body and flexing of the knees toward the stern of the boat. The back, shoulder, and arms act as connections so that the force generated by the legs is applied to the oar and not dissipated.

### WHAT ARE THE CAUSES OF ROWING INJURIES?

Most rowing injuries are caused by overuse. Any abrupt changes in training level, technique, or the type of boat rowed and a rapid increase in training volume contribute to their occurrence. Most rowing overuse injuries affect the wrist and forearm, rib cage, knee, and lumbar spine.



## WHAT ARE THE MOST COMMON ROWING INJURIES AND HOW ARE THEY TREATED AND PREVENTED?

### Extensor Tenosynovitis of the Wrist

Extensor tenosynovitis commonly occurs in early spring with the return to high-intensity rowing in relatively cold weather. This condition is associated with pain, swelling, and crepitus (a sense of creaking) with motion of the wrist. It can cause pain with rowing and other activities such as writing.

Treatment involves the use of a cock-up wrist splint when not rowing, anti-inflammatory medication, and ice. Local cortisone steroid injections may be helpful. The key to prevention is keeping the hand and wrist as warm as possible while rowing. Rowers should make sure that they wear long-sleeved shirts and fleece covers that encase the hand, wrist, and oar while rowing in cold weather.

### Rib Stress Fractures

Pain along the rib cage is a common complaint among rowers. The vast majority of these injuries are rib stress fractures, which account for 10% of all rowing injuries. The most common site is at the junction of the middle and back one-third of the rib. Rib stress fractures generally occur during periods of intense training in the winter and early spring when rowers spend a significant amount of time on the rowing ergometer, with a low stroke rate and high load per stroke.

Rib stress fractures typically present with achiness of the chest wall before progressing to a painful stress fracture. Recognizing the onset and decreasing the intensity of training may prevent the progression to an acute fracture. When the fracture occurs, there is a sharp pain that worsens with coughing, deep breathing, changing position, and rolling over in bed. The fracture is rarely seen in an x-ray and may require a bone scan to confirm its presence.

Initial treatment involves stopping activities until the athlete is comfortable with performing daily living activities. This is followed by cross-training on a stationary or spinning bike. Running and impact-loading activities are to be avoided during the early healing phase. As the fracture heals, ergometer training is allowed at a high stroke rate and low resistance with progression to rowing on the water with a decreased load on the oar.

Prevention involves incorporating core and upper-back strengthening exercises as part the regular training program and avoiding long, high-load ergometer training pieces.

### Low Back Pain

Many rowers experience pain in the lower back, the second-most common site injured in the collegiate rowing population. For collegiate rowers, back pain is associated with ergometer pieces of greater than 30 minutes and lifting free weights. Young rowers often present with lower back pain that may radiate into the buttocks due to an injury to the lower back disc. They may complain of pain while sitting in class and at the finish of the rowing strokes with the legs extended. They also may have a back spasm and find it difficult to bend forward to touch toes.

Most rowers with disc injuries do well with conservative management by stopping rowing and cross-training when tolerated. Flexibility exercises and a core stabilization program should be started and continued as long as the athlete is rowing. Prevention of back pain in the rower requires a comprehensive core stabilization and flexibility program. It is important to limit ergometer pieces to 30 minutes and allow stretching between rowing intervals. All weightlifting activities—especially using free weights—should be carefully monitored.

### Knee Pain

Patellofemoral (kneecap) pain generally presents with pain while ascending or descending stairs and a clicking sensation during rowing. Training activities such as squats and squat jumps will increase the pain. Treatment consists of anti-inflammatory medication and a stretching program of the anterior hip, quadriceps, and iliotibial band.

Iliotibial band (ITB) friction syndrome is also fairly common in rowers. The ITB glides across the outside of the knee with knee bending. If the ITB is tight, it may result in inflammation and localized pain. Treatment for ITB friction syndrome consists of active rest, ice, anti-inflammatories, ultrasound, and stretching. All stair running and squatting activities are eliminated.

Always be sure to speak with your athletic trainer and physician if you are experiencing any type of pain, and remember not to play through the pain.

## EXPERT CONSULTANTS

Timothy Hosea, MD  
Jo A. Hannafin MD, PhD

Sports Tips provide general information only and are not a substitute for your own good judgement or consultation with a physician. To order multiple copies of this fact sheet or learn more about sports injury prevention, please visit [www.STOPSportsInjuries.org](http://www.STOPSportsInjuries.org).

