

## Common Sports Injuries

This guide is intended to help coaches treat, prevent, and speed recovery in their athletes. The most common 10 injuries are covered below. They include ankle sprain, groin pull, shin splints, tendinitis, hamstring pull, strained lower back, runner's knee, separated shoulder, wrist sprain, and ACL sprain.

### 1. Ankle Sprain

*Description:* The ligaments in the ankle that hold the bones together have been overstretched. This happens most commonly when the ankle twists and pressure is put on the ligaments on the outside of the foot. Ankle sprains commonly occur when an athlete is jumping or running on an uneven surface, or when an athlete puts weight on an improperly planted foot. There are different degrees of sprains, which require different treatment and healing time. A light sprain is when the ligaments are stretched but not actually torn. There will be swelling but no real damage done. A moderate sprain happens when the ligaments are partially torn but not completely so. A severe sprain includes those injuries that caused by violent twisting, when most of the ligaments tear. For all sprains, there will be swelling and bruising. If there is pain on the inside of the ankle when the athlete takes a step, they should be X-rayed for a hairline fracture.

*Prevention:* It is important to wear proper foot equipment for the exercise being performed. Wearing supportive, appropriate footwear reduces the ankle's ability to turn and protects the foot from injury. All exercise sessions should begin with a proper warm-up to loosen the ligaments properly and allow the ankle to achieve full range-of-motion. These exercises may include rolling the ankle both directions, pointing and flexing the foot repeatedly, writing the alphabet with the feet, and pushing up on the balls of the feet to raise the heels off the ground before releasing back to a normal standing position. Balance is also extremely important in preventing foot injuries, and should be practiced like any other skill. To improve balance, have athletes raise one foot slightly off the ground and tuck it in to the other ankle. Practice balancing for as long as possible, changing the conditions under which it is done; i.e., have athletes balance with

their arms at their sides, out straight, overhead, behind the back, etc, and have them do these drills with their eyes both open and closed.

*Treatment and Recovery:* The old injury treatment rule of RICE applies to ankle sprains. RICE stands for Rest, Ice, Compression, and Elevation. Rest allows the injury to heal without further straining the ligaments by putting pressure on them. It is important to allow the ankle time to heal without putting weight on it because the more pressure that is applied, the longer it will take to regrow the injured ligaments. Ice reduces swelling by constricting the blood vessels and helps prevent bruising. Ice should be applied in 4 20 minute intervals for several days following the injury. Compression also reduces swelling by refusing to allow the ankle to expand. This can be achieved by wrapping the ankle in an elastic sports bandage or wearing an ankle brace. Elevation reduces blood flow to the injured area and helps keep swelling and bruising to a minimum. When the pain is tolerable, the athlete should begin strengthening and range-of-motion drills. These drills include writing the alphabet in the air with the injured foot and practicing balance by holding all the weight on the injured foot and maintaining that position for as long as possible. If after 3-4 days there is no improvement, or if immediately after the injury the ankle is very loose, see a doctor. Some severely sprained ligaments require surgery to fix.

## **2. Groin Pull**

*Description:* A groin pull occurs when the muscle fibers in the inner thigh are overstretched. This can cause the fibers to tear and pull. The groin is used in pulling the legs together in a contraction and stabilizing the hip. This injury has immediate swelling and bruising, and it will be sensitive to the touch. Groin injuries most commonly happen with quick starts and stops or a sudden change of direction. Movement will be painful, so avoid stairs and hills during the recovery.

*Prevention:* Adequate stretching before an activity can reduce groin injuries by loosening the muscles and waking them up before requiring them to engage in strenuous activity. To stretch the groin, sit on the floor in a straddle position, with the legs out to the side as far as they will go without turning in. It is important that the legs only go as far as possible without the knees and

ankles turning forward, because this compromises the stretch and puts a strain on the knees. Slowly lean to one side and then the other, holding the stretch over one leg at a time. The leg not being stretched should stay turned up straight, so that the knees and shoelaces face the ceiling. The hips should remain on the ground, not letting one side lift up to increase the depth of the stretch. When both sides have been stretched, stretch the middle by walking the hands forward and holding the position. Again, knees and ankles must remain facing the ceiling, and the back should be straight. Athletes can imagine pushing their lower back down to the ground instead of their shoulders and arms. This helps achieve the deepest stretch possible.

Strengthen the groin muscles with resistance exercises, including laying on the ground with the legs in the air and pushing the legs together while holding a resistance band between the ankles. The added resistance builds muscle in the groin area. This exercise can also be done without a resistance band. In both instances, the exercise should be done slowly, to achieve the full potential of the resistance.

*Treatment and Recovery:* RICE works for this injury as well, as it does for most common sports injuries. Rest the injury by avoiding walking, as the groin is used to stabilize the hip during walking. Avoid stairs and hills during the recovery time. Ice the muscle for 20 minutes, 4 times a day, for several days. Compress the injury by wrapping it in a bandage to avoid swelling and to help stabilize the leg. Elevate the leg whenever possible by ensuring that the injured area is above the heart.

Avoid stretching the muscle or do resistance movements while it is injured. The injury needs 1 to 2 weeks to heal, and no exercise should be done during this time to aggravate the muscle. After activity is resumed, ice the area after a work-out to prevent any additional swelling. Stretching should be light at first, as should any running drills. Avoid sprints and other sudden movements that could reinjure the area. The area should be healed within 2 to 3 weeks.

### **3. Shin Splints**

*Description:* Shin splints involve pain in the muscles around the shin bones, on the front of the leg. Often, the muscle fibers will tear after repeated use, causing walking and other movements to be extremely painful. The tears cause small patches of bleeding around the bone as the fibers that connect the muscle to the shin bone pull away from the bone. This injury commonly occurs with running or jumping on hard surfaces or overuse of the area. Shin splints are generally seen in inexperienced athletes, though they are known to harm some trained athletes time and time again. Pain generally occurs on the outside front of the leg or on the inside back of the lower leg.

*Prevention:* To prevent shin splints, avoid running or jumping on hard surfaces, such as concrete or asphalt. Gradually increase running time to let the body get accustomed to prolonged exercise, and properly stretch the calves before and after a work-out.

Proper athletic shoes are a must for preventing shin splints. Well-made shoes provide adequate arch support that prevents the arch from falling, which strains the fibers attaching the arch to the shin bone and causing shin splints. Proper footwear also has shock absorption, which reduces the strain to the lower leg. If an athlete has weak arches, try an arch support inside the athletic shoe to prevent the arch from overworking.

To strengthen the calf and lower leg, practice calf raises by standing on a curb or other surface with a drop and lowering and raising the calf muscles. Also, strengthen the lower leg by doing small jumping exercises, focusing on the landing of the feet, ensuring that the athlete lands on the balls of the foot and rolls down through the foot to avoid injuring the foot or the ankle. Another activity is jumping lunges. The athlete stands in a middle lunge with the legs bent, but remembering to keep the knees level over the ankles. The athlete pushes off the ground and straightens the legs before landing back in the original middle lunge position. This helps strengthen the entire leg, which reduces injury to the shin and ankle.

*Treatment and Recovery:* There is no better treatment for shin splints than rest. All activity done during recovery should be non-weight bearing, such as cycling or swimming, until there is

no more pain. The RICE method works for immediate relief of shin splint pain, but it is important to stop all stressful activity on the area until there is no more pain, because the repeated activity can cause tiny cracks in the lower leg bones. These will heal on their own, but only when left to do so without further straining.

If pain has not subsided after 3 weeks, athletes should see a doctor about a possible stress fracture to the lower leg bones caused by repeated activity. Before that time, all activity should be light. When the athlete returns to full activity, they should tape the shin to reduce stress on it and gradually build back up to full activity. Vary the routine to avoid re-injuring the area and properly warm up and cool down before and after each exercise. When there is no pain before or after a work-out, the athlete can return to full participation.

#### **4. Tendinitis**

*Description:* Tendinitis is the inflammation of a tendon. The tendon is the thick cord that attaches the muscle to the bone. The tendons have been stretched beyond their capacity in a repetitive motion. Tendinitis is rarely caused by a sudden injury. Tendinitis can occur in different areas in the body, including the elbow, shoulder, hip, knee, thumb, and Achilles heel. Causes of tendinitis include poor posture, which strains joints and puts pressure on tendons, an abnormal bone or joint, such as those caused by arthritis, and improper stretching and conditioning.

Symptoms include tenderness in the affected area, which can run along the entire muscle. Pain is generally felt with gripping and turning motions. Pain may be gradual or sudden and severe, depending on the condition causing tendinitis. It is also characterized by loss of motion in the affected area.

*Prevention:* Proper exercise technique has more to do with preventing tendinitis than any other precautionary measures. Athletes should build up the activity level slowly, allowing the body time to adjust. Athletes should also avoid needless repetition, limiting themselves to avoid overuse. Major joints, such as the elbow, knee, Achilles heel, shoulder, and hip should be strengthened through resistance movements and weight training. Strong muscles prevent ligaments and tendons from having to absorb pressure the muscles cannot handle. Finally, stop if pain occurs and switch to another activity. Try the previous exercise again before ending for the day, and if there is still pain, avoid that exercise for several days.

*Treatment and Recovery:* Recovery time for tendinitis is slow, usually taking several weeks or months, depending on the severity of the tendon tear. All activities that cause pain to the area should be avoided for a week. Ice should be applied to avoid swelling and bruising, but only for the first day.

Athletes should ensure that they are performing moves using proper technique. For example, tennis players should remember to keep themselves in a proper body position while swinging the racquet to use the full force of the body in the swing. The proper body position reduces strain on the elbow. For golfers, a correct swing position keeps the hips and knees in line, allowing the golfer to use get the entire body behind the swing and takes pressure off the elbows. Other activities that should be performed with proper technique to avoid tendinitis include skiing, gardening, shoveling, throwing and pitching, scrubbing, and painting.

If after a week, the condition has not improved, the athlete should see a doctor about getting steroid injections, which help to decrease pain and inflammation. The doctor may also suggest physical therapy, which will help with range-of-motion. Also, see a doctor if there is a fever, swelling, redness, or warmth, multiple sites of pain, or an inability to move the affected area. These can be signs of other, more serious injuries, and need to be assessed by a doctor.

## 5. Hamstring Pull

*Description:* The hamstring is the group of three muscles at the back of the leg. A pull includes any tearing or stretching done to the tendons of this area. Hamstring pulls are often caused by sudden shifts in speed or beginning a sprint from a standing position. Hamstring injuries are characterized by a sharp, sudden pain in the back of the thigh that may cause sudden weakness in the area. Often, it is extremely painful to flex the leg when there is a hamstring injury.

Causes of hamstring injuries include improper stretching and conditioning, muscle fatigue, doing too much too soon, reduced flexibility, muscle imbalance between the quadriceps and the hamstring, and poor muscle strength.

In light hamstring pulls, there are microscopic tears in the muscle that cause minor bleeding in the muscle. In severe pulls, the muscle may tear completely apart, requiring surgery to repair the torn ends.

*Prevention:* To prevent hamstring injuries, ensure that athletes go through a proper warm-up and stretching exercise. To stretch the hamstring, lean forward with the legs straight, aiming at touching the toes. This stretch should be held for at least 10 seconds and the athlete should not bounce or change positions during this time. Another, similar stretch happens when the athlete sits on the floor with the legs out straight. Lean forward over the legs, keeping the knees straight and reaching for the feet. The lower back should be straight on this stretch. Keeping the lower back straight focuses the stretch on the hamstring and not the back of the knee, helping you maintain good posture and stretch correctly.

Maintaining equal muscle strength between the quadriceps and the hamstrings is also essential to preventing injuries. Because the quadriceps is the larger muscle group, it is often the more targeted and exercised of the two, but balance and strength comes from working both groups. To strengthen the hamstring muscle, do leg curls on a machine, laying face down and hooking the feet around a lever. Slowly bend the knees inward, using the hamstrings to lift the weight. Repetitions should be slow and controlled, focusing on only using the hamstrings.

Other important prevention measures include gradually working up to the intensity you desire, instead of starting at full speed. Giving your body time to warm up and adjust lets the muscles loosen and become flexible before pushing them. Reduce intensity and duration if you have fatigued muscles, as they cannot respond like normal under intense and prolonged pressure.

*Treatment and Recovery:* RICE is important to observe with hamstring injuries, especially the Rest aspect of the treatment. The muscle should be rested for 2 to 3 weeks, depending on the severity of the strain. As soon as pain subsides, light stretching should be done to retain flexibility and help return the muscle to normal. A thigh wrap can be used to stabilize the muscle during recovery.

If the athlete cannot contract the muscle, has trouble walking, or if pain has endured for more than a week, seek medical help. Inability to contract the muscle can signal a complete rupture of the muscle, which requires surgical repair.

## **6. Strained Lower Back**

*Description:* Lower back pain results from a tear or pull of the tendons and fibers, which results in back spasms or aches. It commonly occurs from bending or twisting awkwardly or lifting too much weight improperly. It happens because of improper strengthening and stretching exercises, lifting improperly, and doing unpracticed sports activities without proper technique.

Lower back pain happens in the lumbar spine, the region that connects your upper body to your hips and pelvis. This curve in the spine allows you mobility and strength, but it is also fragile. A sudden movement can injure the ligaments that connect the lower spine if they have not been properly exercised or have been overused. Another common cause for lower back pain is weak core muscles, including the abdominals.

*Prevention:* Several things can be done to prevent lower back injuries. Like all injuries, lower back problems are caused by improper stretching and conditioning. To stretch the lower back,



kneel, then sit back on the knees. Spread the arms out in front and lean forward. This should initiate a stretch in the lower back. After stretching the center, walk the hands slowly to the right, then to the left. Hold still in each of these positions, feeling the stretch in the lower back and on the side. Another stretch involves sitting on the ground with the legs out in front. Bend the left leg to the right knee and cross the left foot over the right leg. Twist the lower back to the left, holding onto the left knee for support if needed. Switch to stretch the right side of the back.

To increase lower back strength, work with an exercise ball. Lean backward over it, letting it support your back as it stretches it. You can also use the ball to strengthen the core muscles through balance exercises, abdominal crunches, and lower back contractions. For the lower back contractions, lay with the stomach against the exercise ball with the feet on the floor; knees should be straight. Lean over the ball in a relaxed position with the arms on the back of the head and use the lower back muscles to push upward, lifting the chest off the ball and suspending it in the air. The body should reach a straight position before relaxing back down to the ball. To increase abdominal strength, use the ball in stability drills and sit ups.

Other prevention methods include learning proper lifting techniques, which promote lifting with the legs and not with the back. The leg muscles are much more powerful than the lower back muscles, so using them to lift heavy objects keeps your body healthy and happy. Also, proper posture when sitting and standing takes pressure off the lower back and can help prevent an injury.

*Treatment and Recovery:* Recovery for lower back pain usually takes several weeks. Light activity actually helps speed recovery, so complete rest is not necessary. Bed rest for more than a day or two can actually make pain worse, so stay active and walking around. However, athletes should not continue with all normal activities if they cause pain. Activities should be reduced in intensity and length, making sure to stop at the first sign of pain.

If pain has not subsided after a week, see a doctor for treatment. Often, a chiropractor or orthopedic surgeon can realign the back to alleviate pain. The doctor can also prescribe muscle relaxers to prevent spasms and help with pain management. Once activity is resumed, the athlete

should be careful to stretch and condition the back to maintain flexibility and prevent re-injuring the area. Light stretching should be done just after the injury to help reduce stiff and sore muscles.

## **7. Runner's Knee**

*Description:* Runner's knee results from the misalignment of the kneecap in its groove. It is the most common of all knee injuries. When a runner takes a step, the kneecap usually slides up and down in its groove with no problems. When it is misaligned, it rubs against the sides of the groove and wears on the cartilage on the groove and on the back of the kneecap. Fluid can build up and cause swelling and discomfort. Pain is centered in the back of the knee after running exercises. This is a repetitive injury which generally does not occur from a sudden movement.

*Prevention:* To prevent runner's knee, athletes should focus on strengthening the quadriceps muscle, which helps align the kneecap in the center of the groove. To strengthen this muscle, do isometric exercises that isolate the quadriceps, such as sitting and contracting and releasing the muscles. Hold the contraction for several seconds and release slowly. Another exercise to strengthen the quadriceps is jumping lunges. The athlete stands in a middle lunge with the legs bent, but remembering to keep the knees level over the ankles. The athlete pushes off the ground and straightens the legs before landing back in the original middle lunge position.

Another overlooked but important part of preventing injury is wearing proper footwear. Worn down or old athletic shoes puts pressure on the wrong part of your foot or ankle, pushing the entire leg out of alignment and leading to injuries such as runner's knee. Research the length of time your athletic shoes are recommended for use and replace them after the prescribed mileage or length of time.

*Treatment and Recovery:* To treat runner's knee, start with quadriceps exercises which do not affect the knee, such as the sitting quad contractions, mentioned in the Prevention Section. Avoid quadriceps exercises that include bending the knee, such as the jumping lunges and any quadriceps machines at a work-out facility, because these will put unnecessary pressure on the

kneecap and groove. It is also important to stretch the quadriceps. To do so without causing further discomfort to the knee, kneel on the ground and put one foot on the floor in front of you, making a 90 degree angle with the leg. Extend the other leg behind you, keeping the lower leg and knee on the floor. Lean forward over your front knee, making sure not to let the knee extend over the ankle. You may need to reposition your front knee. This stretch lengthens the quadriceps without affecting the knee or forcing it to bend.

Massage therapy also helps treat runner's knee. Massages should start at the top of the leg and work down, helping elongate the muscle and strengthen muscle fibers. It also helps relieve muscle contractions, which pull the kneecap up and causes pain.

If pain has not lessened after a week or there is fluid buildup causing swelling, see a doctor for a diagnosis.

## **8. Separated Shoulder**

*Description:* A separated shoulder is the stretching or tearing of the ligaments that connect the bones in the shoulder. When they have been injured, the shoulder does not align properly and is pronounced separated. Separated shoulders are often caused by a blow to the front of the shoulder or falling on an outstretched hand. This is an impact injury, not a repetitive motion injury, and can happen suddenly. Shoulder pain and tenderness accompany this injury. On occasion, a small bump can occur on the top of the shoulder. It is sometimes accompanied by numbness, swelling, and stiffness. Also, it may be hard to move the arm on the side that is injured. Athletes need to be X-rayed to determine the full extent of the damage.

A separated shoulder is different from a dislocated shoulder. With a dislocated shoulder, the upper arm bone is dislocated from the shoulder socket. With a separated shoulder, the clavicle (collarbone) and scapula are separated from each other. The treatment of each injury is different and they should not be confused.

There are many different types of shoulder separation. For this reason, it is important to see a doctor to determine the best way to treat your athlete's specific injury.

*Prevention:* Because this is such a swift injury, there are few ways to prevent it. One important thing to do is to maintain good technique in whatever activity occurs. For example, there are correct and incorrect ways to fall in different sports. It is essential that the athlete learn the correct way to protect themselves from injury in the case of a fall, especially in sports like horseback riding, bicycling, and figure skating.

Strengthening exercises always help prevent injuries, though, and there are several weight training moves that can be done to increase strength. Using free weights, athletes can raise their arms out straight to the side, stopping at shoulder level. This exercise can be done to the side and to the front, but always stopping at the shoulder level. Another good exercise is a pectoral move, such as a lateral pull or a butterfly. These moves can be performed in a fitness center with appropriate equipment and supervision.

Finally, wearing properly fitting protective equipment can protect the shoulders from injury. Coaches should ensure that all athletes know how to wear and protect equipment so that it performs as well as possible.

*Treatment and Recovery:* Immediately after injuring the shoulder, the athlete should ice it to reduce swelling and make the shoulder easier to reattach. The shoulder should be iced for 15 minutes, 4 times a day for several days. However, this injury is fairly serious and requires medical care. An athlete should seek a doctor's care, because only an X-ray can show the full extent of the injury. The athlete will need to wear a sling a few weeks until the ligaments heal, and the shoulder should not be lifted straight or above the head. If the injury is serious, surgery may be required to pin the bones back in place. Less serious separations heal within 2 to 3 months.

## 9. Wrist Sprain

*Description:* A wrist sprain is an injury to the ligaments of the wrist. It usually occurs on the outside, either on the thumb side or the pinky side. It can happen suddenly, when the wrist gets fallen on or smashed, or after several occurrences. When an athlete falls on the wrist, the ligaments, tendons, and muscles take the majority of the beating, which causes the ligaments to stretch and tear. This injury can be brought on by brittle, weak ligaments.

Sprains are characterized by pain, tenderness, swelling, redness, warmth, and bruising. There will often be an ache in the wrist and the athlete will have reduced range of motion. The pain is especially concentrated where the wrist bends or rotates.

*Prevention:* Protective gear is crucial to preventing wrist injuries. Wrist guards will help keep the wrist from bending too far backward. Taping the wrist is another way to protect it from bending too much. Correct technique in the activity is another way to keep athletes injury-free. In sports that involve frequent falling, such as skiing, skating, hockey, and skateboarding, among many other sports. As a coach, it is essential that you teach your athletes correct ways of falling to prevent injury to their wrists and shoulders.

*Treatment and Recovery:* Recovery for sprains can take from 2 to 10 weeks, depending on the severity of the sprain. Mild sprains can be treated with RICE, focusing on resting the wrist and letting it heal. More moderate sprains will need a wrist brace, provided by a doctor to immobilize the wrist for a 7-10 days. Severe sprains may require surgery to repair a fully torn ligament.

If pain and swelling persist for more than 2 days, or if the athlete cannot move the wrist or it feels especially loose, medical attention is needed. These could be signs of a fracture, something requiring medical care.

After the sprain has healed, rehabilitation exercises are necessary. These include motions to strengthen the wrist and regain flexibility and range of motion. While these should be done with

a trained physical therapist, there are several moves athletes can safely do at home. The wrist should be flexed up as high as it will go and then pushed down as low as it will go, focusing on improving range of motion without pain. The wrist should be circled both directions to increase flexibility. When pain is completely gone, athletes can practice strengthening the wrist by pushing off something, such as a wall. Athletes can stand about 2 feet from a wall and lean forward, letting their wrists rest on the wall. They then push off the wall with the wrists, flicking through the wrist to strengthen it.

## **10. ACL Sprains**

*Description:* The ACL is the anterior cruciate ligament, which works together with the posterior cruciate ligament to stabilize the knee. The ACL is on the front outside of the knee. Together with the PCL, it forms an X. The ACL is most often torn or sprained when the feet remain planted on the ground but the knee twists or bends. ACL tears can occur when an athlete changes direction suddenly, twists without moving the feet, or misses a landing from a jump. A loud pop will generally accompany an ACL injury. After the pop will be immediate swelling, decreased range of motion, and decreased knee stability.

*Prevention:* Unfortunately, most ACL injuries are sudden and unpreventable. They often occur when an athlete is hit, stops suddenly, or during weight transfers in skiing. The only prevention tool is to maintain strong quadriceps and hamstring muscles. This strengthens the ligaments and provides stability during an activity. Leg stretching activities also help keep the ligament loose and flexible.

*Treatment and Recovery:* All activity should be stopped when the ACL is injured. The athlete often will not be able to put weight on the injured leg and should follow the RICE pattern for immediate relief. This injury is serious, though, and requires medical attention. Athletes should get to a hospital for X-rays. The doctor will probably prescribe a knee brace to stabilize the knee. Depending on the severity of the sprain, doctors may recommend immobilizing the knee for some time, wrapping it to provide support, or surgery. For complete ACL tears, reconstructive surgery is needed and rehabilitation is long and intense.

Activity can be resumed when the athlete is cleared by a health care professional, and after all pain is gone. The legs should be of equal strength when the athlete returns to activities, so this may require physical therapy of the injured leg to rehabilitate it.

## **10 Must-Have First Aid Items**

In any coaches' first aid kit, there are 10 essential items.

1. Adhesive bandages to cover minor cuts, scrapes, and abrasions. These prevent the spread of blood and reduce the risk of infection by keeping the wound clean.
2. Antiseptic wipes to clean minor wounds and prevent infection.
3. Elastic sports wraps to provide stability to weak ligaments and muscles and to help prevent injury.
4. Disposable instant ice packs to provide immediate relief for injuries involving swelling. Providing quick cooling power reduces bruising and swelling and will help your athletes heal faster.
5. Soft gauze bandages to absorb fluids and cover wounds.
6. First aid tape to secure the gauze and prevent infection by allowing the wound to be exposed.
7. Antibiotic ointment to reduce infection and speed healing for minor cuts, scrapes, and abrasions.
8. Sterile surgical gloves to protect those attending to an injured athlete from the spread of infection.
9. Medical scissors to cut gauze, tape, and bandages to the correct size for the injury.
10. CPR mouth barrier and instructions, in case an athlete is seriously injured and needs emergency medical treatment to stay alive.