

# Your Guide to Playing Safe

Staying active by participating in sports is a great way to be healthy. All that running, jumping and stretching, though, carries the risk of injury. Play it safe with this quick guide to common problems.

*An adult sports medicine overview with contributions from sports medicine experts*

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## TOP INJURIES BY SPORT



### Running

- ◆ Knee injuries, particularly irritation of the cartilage on the underside of the kneecap
- ◆ Shin splints
- ◆ Achilles tendinitis
- ◆ Plantar fasciitis (irritation in the tendons and ligaments that run from the heel to toes)
- ◆ Ankle sprains and calf strains
- ◆ General overuse injuries such as sprains, strains and stress fractures



### Swimming

- ◆ Overuse and repetitive motion injury to the shoulder or knee



### Cycling

- ◆ Achilles peritendinitis (inflammation of the tendon sheath)
- ◆ Patellofemoral pain syndrome (cartilage irritation on the underside of the kneecap)
- ◆ Lower back pain from hunched posture and poor bike fit
- ◆ Traumatic injury from high-speed falls
- ◆ Pelvic nerve pressure and pain—alleviated with padded bike shorts
- ◆ Nerve inflammation in the hands—alleviated with cushioned bike gloves and padded handle bars



## Baseball/Softball

- ◆ Shoulder problems (rotator cuff injuries and shoulder tendinitis)
- ◆ Pitchers—tendinitis of the shoulder, back, neck, elbow, forearm and wrist; tears to the ulnar collateral ligament in the elbow
- ◆ Catchers—risk of back and knee problems
- ◆ Ankle sprains and fractures
- ◆ Traumatic injuries due to ball hitting body



## Basketball

- ◆ Jammed fingers
- ◆ Knee or ankle injuries from abrupt changes in direction or landing from jumps
- ◆ Traumatic injuries to face, teeth or eyes
- ◆ Achilles tendon rupture
- ◆ Anterior cruciate ligament (ACL) injuries
- ◆ Sprains, strains and stress fractures



## Tennis

- ◆ Overuse injuries of the elbow, wrist or shoulder, including “tennis elbow”
- ◆ Achilles tendon rupture and calf muscle strains
- ◆ Stress fractures in the legs or feet
- ◆ Plantar fasciitis (irritation in the tendons and ligaments that run from the heel to toes)



## Golf

- ◆ Lower back injuries from twisting and hunching
- ◆ Elbow and shoulder inflammation, tendinitis or rotator cuff injury



## Soccer

- ◆ Sprains, strains and overuse injuries in the legs
- ◆ Cartilage tears and anterior cruciate ligament (ACL) injuries in the knee
- ◆ Fractures, contusions and concussions
- ◆ Ankle and foot sprains (Lisfranc’s) and fractures (Jones)
- ◆ Achilles tendon rupture
- ◆ Groin strains



## Surfing

- ◆ Overuse injury to the shoulder, including rotator cuff injury



## Skiing/Snowboarding

- ◆ Knee injuries, including anterior cruciate ligament (ACL) tears, due to skiing falls
- ◆ Injury to hands or wrists in falls



## Football

- ◆ Contact injuries from collisions and tackles
- ◆ Knee injuries, particularly damage to the anterior or posterior cruciate ligament
- ◆ Ankle and foot sprains (Lisfranc's) and fractures (Jones)
- ◆ Injury to the labrum (cartilage bumper surrounding the shoulder socket)
- ◆ Concussion
- ◆ Sprains, strains and stress fractures



# Proceed With Caution

## Early Signs of Injury or Overuse

- ◆ Joint pain
- ◆ Tenderness at a specific point, especially if the corresponding point on the other side of your body doesn't hurt
- ◆ Swelling, redness and heat in the injured area
- ◆ A clicking sound in a joint if consistently associated with pain
- ◆ Reduced range of motion
- ◆ The body part on one side of your body is weaker than it is on the other side
- ◆ Numbness or tingling sensation in the injured area
- ◆ Pain accompanied by swelling

# Top Injury Risks by Body Part

**Head:** Injury from a fall, colliding with another player or getting hit by equipment. Warning: Concussion symptoms can be subtle.

**Shoulder:** Muscles in the front of your arm and shoulder are typically stronger than those in the back of the joint. This can put too much pressure on the rotator cuff muscles and tendons.

**Back:** Many sports put stress on the lower back and can cause overuse injury to muscles and ligaments, bulging or herniated discs, stress fractures in vertebrae or tears in the annulus, the tough cartilage that surrounds the jelly-like disk.

**Ankle:** Sprains are common. Achilles tendinitis often occurs with a sudden increase in repetitive motion in the ankle.

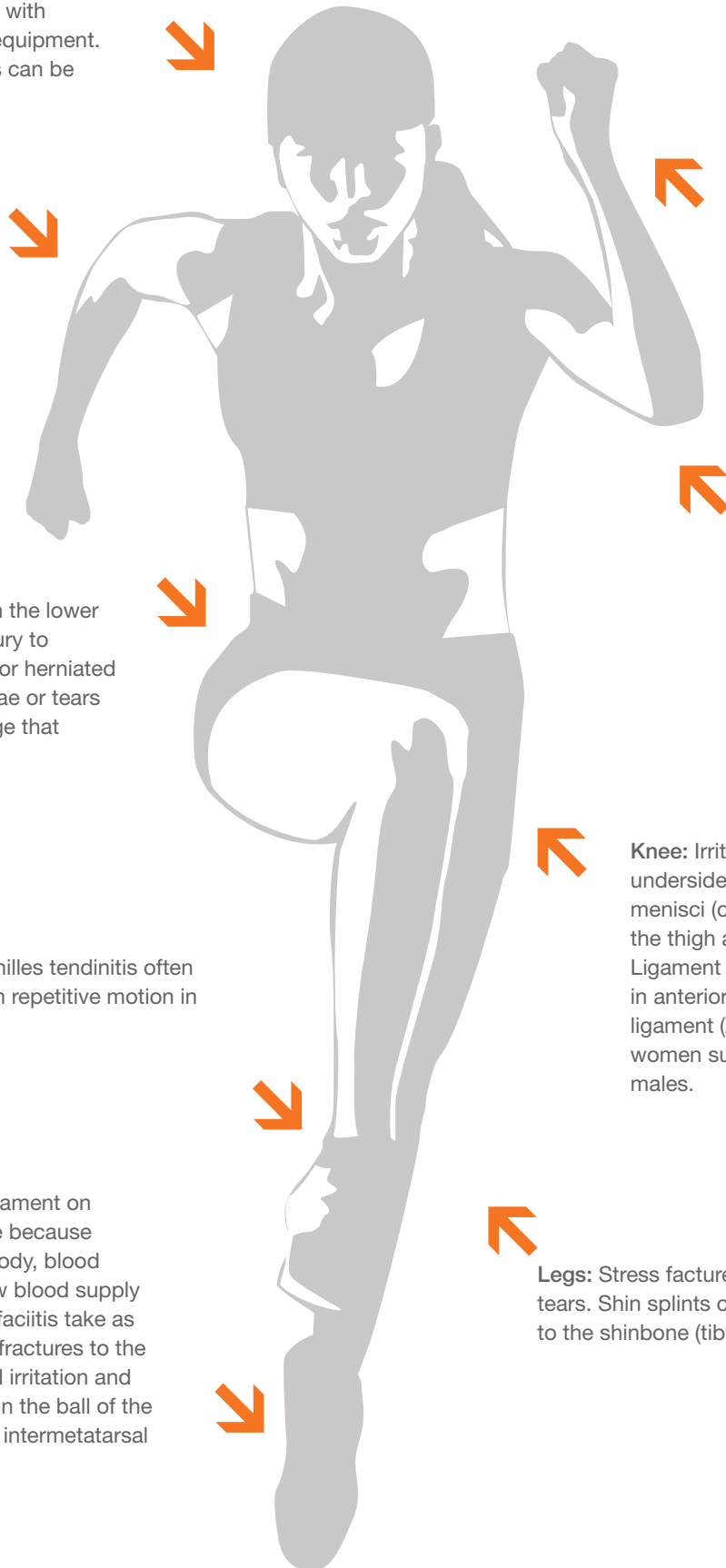
**Foot/Heel:** The Plantar Fascia ligament on the sole of your foot is vulnerable because compared to other parts of the body, blood supply to the area is low. This low blood supply also makes healing from plantar faciitis take as long as six to 12 months. Stress fractures to the many small bones in the foot and irritation and compression of the nerve tissue in the ball of the foot, called Morton's neuroma or intermetatarsal neuroma.

**Hand/Wrist:** A broken finger, hand or wrist bone. Tendon inflammation and dislocation, nerve injury and stress fractures.

**Elbow:** Inflammation and deterioration of ligaments and tendons from repetitive throwing and swinging motions. Ulnar Collateral Ligament (UCL) injuries are a risk.

**Knee:** Irritation of cartilage on the underside of kneecap. Injury to the menisci (cartilage padding between the thigh and shin) can also occur. Ligament strains or tears, particularly in anterior or posterior cruciate ligament (ACL/PCL). Teen girls and women suffer more ACL tears than males.

**Legs:** Stress fractures, muscle and tendon tears. Shin splints caused by repetitive stress to the shinbone (tibia) and surrounding tissue.



# 10 TIPS

## to Avoid Common Injuries

|    | Problem                                   | How to Prevent It  | Why It Helps   |
|----|---|--|--|
| 1  | Achilles Tendon Injury                    | Wear shoes that fit; strengthen leg muscles with training; practice good warm-up habits                        | Reduces the stress put on the Achilles tendon during exercise  |
| 2  | Anterior Cruciate Ligament (ACL) Injuries | Incorporate drills designed for ACL injury prevention  | You can manage a sudden change in direction of motion more smoothly  |
| 3  | Muscle Strain                             | Warm up, start slow, strength train and avoid muscle fatigue   | Injuries are more likely to occur when muscles are tired or pushed to do too much too fast                           |
| 4  | Knee Pain                                 | Strengthen leg muscles, practice good warm-up and stretching habits  | Reduces stress on the knee's ligaments, tendons and cartilage  |
| 5  | Plantar Fasciitis                         | Wear well-fitted shoes with appropriate flexibility for your sport   | Reduces stress that can lead to irritation and injury of the Plantar Fascia, the thick ligament on your foot         |
| 6  | Shin Splints                              | Wear proper footwear; strengthen calf and shin muscles. Run on softer surfaces.                                | Reduces repetitive stress on the connective tissues that attach muscles to shin bone                                 |
| 7  | Sprains                                   | Build up strength around the joint through conditioning exercise   | Strong muscles reduce the chance ligaments will be irritated or damaged  |
| 8  | Stress Fracture                           | Increase exercise intensity slowly and cross train. Improve biomechanics/technique. Evaluate sports equipment. | Exercising different parts of the body for overall fitness reduces the odds of oversteering any one bone in the body |
| 9  | Tendinitis                                | Cross-train for overall fitness; avoid rapid increases in exercise intensity                                   | Allows for better rest and healing of tendons; reduces risk of irritation  |
| 10 | Rotator Cuff Injuries (tears, tendinitis) | Limit repetitive overhead motion (adhere to pitch counts in baseball); strengthen the shoulder muscles         | Reduces the odds of joint instability that can lead to damage  |

# What's the Difference Between a Strain and a Sprain?

A strain is an overstretching or tear in a muscle or tendon, the strong tissue that connects muscles to bones. A sprain is a stretching or tearing of a ligament, the tough fibrous tissue that connects bone to bone.

Both injuries cause similar symptoms and are graded by doctors on their severity.

Grade 1 strains and sprains are mild, and typically heal with rest.

Grade 2 strains and sprains are moderate injuries that may require seeing a doctor and getting diagnostic imaging.

Grade 3 strains and sprains are serious, and typically require more extensive medical treatment and possibly surgery before they can heal.

# Doing R.I.C.E. Right

Treat sprains, strains, bruises and other soft-tissue injuries initially with rest, icing, compression and elevation to reduce inflammation.

- ◆ **Toughing it out and playing while hurt can worsen the injury and prolong recovery.**
- ◆ **Use an appropriate brace, boot and immobilize as needed.**
- ◆ **Ice the injury 10 to 15 minutes at a time with an ice pack filled with ice and water. Let the area warm completely before re-applying the ice pack to avoid mild frostbite.**
- ◆ **Compress swelling with a wrap applied firmly but not too tightly. You want to reduce blood flow to the area but not cut it off.**
- ◆ **Elevate the injured part above the level of the heart to allow gravity to reduce blood flow to the area.**
- ◆ **When appropriate, begin weight-bearing exercise or use a stationary bike to mobilize and strengthen.**

# ER, Urgent Care or Doctor's Appointment?

Assessing the urgency of the injury is important. When in doubt, select the option that will allow you to be seen more quickly. These are some general guidelines.

**Emergency Room:** ERs handle sports injuries that require immediate attention, including serious bone fractures, concussions, heat stroke, eye injuries and lacerations (cuts) where the bleeding is not stopping or slowing.

**Urgent Care:** These facilities can handle non-life-threatening fractures, dislocations, and cuts that require stitches/staples. In addition, they can deliver first aid for muscle, tendon and ligament tears and help arrange for additional care, such as an appointment for needed diagnostic imaging (X-ray/CT/MRI) and consultation with a sports medicine or orthopedic specialist.

**Doctor's appointment:** Many doctors now offer same-day or next-day appointments, which means that if you think you can wait 24 hours for care, you can be seen at your regular doctor's office. Sprains, strains and stress fractures can typically wait with rest and icing.

# How to Treat With Ice and Heat

## When to See a Doctor for a Joint Injury

- ◆ The pain is severe. Unable to hop.
- ◆ There is pain in a joint for more than 48 hours.
- ◆ The injured joint will no longer bear any weight or cannot be moved.
- ◆ The area over and adjacent to the injured joint is very tender when touched.
- ◆ The injured joint looks different from its mirror joint on the other side of the body, with significant swelling, lumps, bumps or a crooked appearance.
- ◆ There is numbness in any part of the injured area.
- ◆ Redness or red streaks spread out from the injury.
- ◆ The injured joint has been hurt several times before.
- ◆ There is pain, swelling or redness over a bony part of the foot.

Icing reduces the swelling of an injured or overworked area and is usually appropriate for both chronic injuries and acute or sudden injuries.

Icing shrinks (vasoconstricts) the blood vessels, reducing the flow of blood to a body part. This decreases the amount of swelling and pain that can occur.

The ideal way to ice is to put ice cubes in water to create a solution with a temperature of 45 to 50 degrees (7 to 10 degrees Celsius). Put the mixture in a sturdy plastic bag to create an ice pack that is malleable. Ice the painful body part for 10 to 15 minutes, ideally immediately after exercise.

For plantar fasciitis, rolling your foot on a frozen water bottle or a cube of ice formed from a paper cup for five minutes can offer relief.

Chemical (blue ice) packs can be handy, because they remain malleable at below freezing temperatures and are ready to use straight out of the freezer. However, they also are colder than ice water and can cause frostbite with prolonged use. Exercise caution with these and never apply them directly to the skin, but rather over a thin towel.

Heat attracts blood rich in oxygen and nutrients to an injured area and aids the healing process. It also loosens stiff muscles and joints, facilitating easier movement.

Use heat before exercise or during rehab when bleeding, bruising and throbbing has subsided. This is normally at least 72 hours after the injury. (Never heat a fresh injury as this will increase swelling.) Moist heat such as that provided by a whirlpool bath or hot tub is ideal.

Alternating heat and cold creates a flushing out or pumping action for ankle sprains a few days after the injury. Set the hot water temperature at 100 to 105 degrees (38-41 degrees Celsius) and then alternate with one minute in cold 50 degrees (10 degrees Celsius) water. Repeat for three cycles and then leave your ankle in cold water for four to five minutes after the third cycle to “ice down” the injury.



# Injury Rehab and Prevention

| Treatment Type                            | What It Is   | Most Commonly Used For  |
|---|--|---|
| R.I.C.E.                                  | Rest, icing, compression and elevation (R.I.C.E.) to reduce inflammation   | Initial at-home treatment of sprains, strains, bruises and other soft-tissue injuries |
| Physical Therapy                          | Exercises to help treat and prevent injuries   | Injury rehabilitation   |
| Strength Training & Conditioning          | Exercises to keep key muscles strong and flexible  | Improving fitness, flexibility and muscle strength                                    |
| Osteopathic and Chiropractic Manipulation | Hands-on adjustment of areas of the body   |   |
| Concussion Screening & Prevention         | Baseline testing of an athlete's balance and brain function before the season can be used to compare with an examination during the season if the athlete receives a strong blow to the head. Screening for concussion involves looking for symptoms of brain injury such as headache, dizziness, uneven pupils, mood changes and confusion. | Treatment and prevention of serious head injury and decreasing long term effects      |
| Soundwave/ESWT                            | Soundwaves that stimulate a healing response via controlled microtrauma  | Tendinopathies, plantar fasciitis, and shin splints                                   |
| Surgical Procedures                       | Will vary depending on type of injury or problem   | May be needed when other treatments don't provide relief                              |
| Arthroscopy                               | Looking inside a joint   | Repair of cartilage, ligament and some tendons  |
| Cartilage Restoration                     | Renewing or replacing cartilage  | Defects in your joint   |
| Ligament & Tendon Reconstruction          | Repairing torn or worn out ligaments (ACL) or tendons (Achilles)   | ACL, rotator cuff and Achilles tendon injuries  |