

SPRAIN:

The most common soft tissues injured are muscles, tendons, and ligaments. These injuries often occur during sports and exercise activities, but sometimes simple everyday activities can cause an injury.

A sprain is a type of joint injury that typically involves tearing of the ligaments.

A sprain is an injury to a ligament, the strong bands of tissue that connect a bone to another at a joint. The severity of a sprain can be classified by the amount of tissue tearing, impact on joint stability, pain and swelling.

A sprain is an injury to a ligament, while a strain is an injury to a muscle or tendon. Both can result in significant lost time from sports.

A sprain is a stretch and/or tear of a ligament, a strong band of connective tissue that connects the end of one bone with another. Ligaments stabilize and support the body's joints. For example, ligaments in the knee connect the thighbone with the shinbone, enabling people to walk and run.

The areas of your body that are most vulnerable to sprains are your ankles, knees, and wrists. A sprained ankle can occur when your foot turns inward, placing extreme tension on the ligaments of your outer ankle. A sprained knee can be the result of a sudden twist, and a wrist sprain can occur when falling on an outstretched hand.

Joints are held together and supported by tough bands of connective tissue called ligaments. The entire joint is enclosed inside a membrane filled with lubricating synovial fluid, which helps to nourish the joint and provide extra cushioning against impact. A sprain is a joint injury that typically involves small tears (micro-trauma) of the ligaments and joint capsule. Common sites for sprains include the thumb, ankle and wrist.

- **Causes of sprains:**

Soft tissue is made from bundles of fibres. Muscle and tendons contain specialised cells that monitor the degree of contraction and stretch. With general use, muscles and tendons use soft contractions to resist overstretching. However, sudden twists or jolts can apply greater force than the tissue can tolerate, resulting in a tear of the fibres. Bleeding from broken blood vessels causes the swelling.

Injuries to soft tissues such as ligaments and tendons can come on suddenly or may get worse gradually. A sudden injury is related to a specific incident and is often called an acute soft tissue injury. This means it has occurred within the previous 24 to 72 hours. An injury that gets worse over time (for example, over three months) is often referred to as a chronic soft tissue injury. These are commonly caused by overuse or changes in normal tissue stress.

Soft-tissue injuries fall into two basic categories: acute injuries and overuse injuries.

Acute injuries are caused by a sudden trauma, such as a fall, twist, or blow to the body. Examples of an acute injury include sprains, strains, and contusions.

Overuse injuries occur gradually over time, when an athletic or other activity is repeated so often, areas of the body do not have enough time to heal between occurrences. Tendinitis and bursitis are common soft-tissue overuse injuries.

- **Symptoms of sprains:** The symptoms of a sprain or strain may include -
 1. pain
 2. swelling
 3. stiffness
 4. Reduced efficiency of function.

- **Degrees of Sprains:**
 1. **First degree (mild)** – little tearing, pain or swelling; joint stability is good.
 2. **Second degree (moderate)** – broadest range of damage, with moderate instability and moderate to severe pain and swelling.
 3. **Third degree (most severe)** – ligament is completely ruptured; joint is unstable; severe pain and swelling; other tissues are often damaged.

[[[Grade 1 sprain (mild): Slight stretching and some damage to the fibers (fibrils) of the ligament.

Grade 2 sprain (moderate): Partial tearing of the ligament. There is abnormal looseness (laxity) in the joint when it is moved in certain ways.

Grade 3 sprain (severe): Complete tear of the ligament. This causes significant instability and makes the joint nonfunctional.]]]

While the intensity varies, pain, bruising, swelling, and inflammation are common to all three categories of sprains. Treatment for mild sprains includes RICE and sometimes physical therapy exercises. Moderate sprains often require a period of bracing. The most severe sprains may require surgery to repair torn ligaments.

- **Acute Treatment:**

There are several decisions you must make when you injure yourself, including how serious the injury is and whether you should go to a health care provider. Look for deformities, significant swelling and changes in skin color. If there are deformities, significant swelling or pain, you should immobilize the area and seek medical help. Many fractures will not cause a deformity.

- **Treating A Sprain:** Management of sprains:

Follows the PRICE principle.

- P – Protect from further injury.
- R – Restrict activity.
- I – Apply Ice.
- C – Apply Compression.
- E – Elevate the injured area.

This PRICE principle limits the amount of swelling at the injury and improves the healing process. Splints, pads and crutches will protect a joint or muscle from further injury when appropriately used (usually for more severe sprains or strains). Activity restriction, usually for 48- 72 hours, will allow the healing process to begin. During the activity restriction, gentle movement of the muscle or joint should be started. Ice should be applied for 15 -20 minutes every 60-90 minutes. Compression, such as an elastic bandage, should be kept on between icings. You may want to remove the bandage while sleeping, but keeping it compressed even during the night is best. Elevating the limb will also keep the swelling to a minimum. If you suspect more than a mild injury, cannot put weight on the limb, or it gives way, you should consult with a health care provider.

- **Rehabilitation:**

The next stage of rehabilitation begins following the first 48 to 72 hours. The second stage focuses on gentle movement of the muscle or joint, mild resistive exercise, joint position training and continued icing. During this stage, you may gradually return to more strenuous activities, such as strengthening. Pain should remain low during rehabilitation. If pain increases, it usually means you have attempted to do too much. Throughout your recovery you can still maintain an aerobic training program. Options for training include stationary bicycling, swimming, walking or running in the water. If the injury is more than mild sprain or strain, it is best to consult your health care provider.

- **Prevention:**

Injuries often occur when people suddenly increase the duration, intensity, or frequency of their activities. Many soft tissues injuries can be prevented through proper conditioning, training, and equipment. Other prevention tips include:

Use proper equipment: Replace your athletic shoes as they wear out. Wear comfortable, loose-fitting clothes that let you move freely and are light enough to release body heat.

Balanced fitness: Develop a balanced fitness program that incorporates cardiovascular exercise, strength training, and flexibility. Add activities and new exercises cautiously. Whether you have been sedentary or are in good physical shape, do not try to take on too many activities at one time. It is best to add no more than one or two new activities per workout.

Warm up: Warm up to prepare to exercise, even before stretching. Run in place for a few minutes, breathe slowly and deeply, or gently rehearse the motions of the exercise to follow. Warming up increases your heart and blood flow rates and loosens up other muscles, tendons, ligaments, and joints.

Drink water: Drink enough water to prevent dehydration, heat exhaustion, and heat stroke. Drink 1 pint of water 15 minutes before you start exercising and another pint after you cool down. Have a drink of water every 20 minutes or so while you exercise.

Cool down: Make cooling down the final phase of your exercise routine. It should take twice as long as your warm up slow your motions and lessen the intensity of your movements for at least 10 minutes before you stop completely. This phase of a safe exercise program should conclude when your skin is dry and you have cooled down.

Stretch: Begin stretches slowly and carefully until reaching a point of muscle tension. Hold each stretch for 10 to 20 seconds, and then slowly and carefully release it. Inhale before each stretch and exhale as you release. Do each stretch only once. Never stretch to the point of pain, always maintain control, and never bounce on a muscle that is fully stretched.

Rest: Schedule regular days off from vigorous exercise and rest when tired. Fatigue and pain are good reasons to not exercise.

Avoid the "weekend warrior" syndrome: Try to get at least 30 minutes of moderate physical activity every day. If you are truly pressed for time, you can break it up into 10-minute chunks.

Whether an injury is acute or due to overuse, if you develops symptoms that persist, contact your doctor.