Sprains and strains

Summary

- A sprain is an injury to the ligaments and capsule at a joint in the body.
- A strain is an injury to muscles or tendons.
- Immediate treatment of sprains or strains includes rest, ice, compression and elevation (RICE).
- Ongoing treatment and supervision of return to work or sport is suggested through your physiotherapist.

About sprains and strains

Soft tissue injuries may be sudden (acute) or long-standing (chronic). Healing depends on factors including the type of tissue and severity of injury, treatment undertaken, previous injuries, and the age and general health of the person.

Causes of sprains and strains

Soft tissue structures are made from bundles of fibres. Muscles 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 or rupture 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 often related to a specific incident and is termed an acute soft tissue injury. This means it has occurred within the previous 72 hours. An injury that has been present for at least three months is often referred to as a chronic soft tissue injury. These are commonly caused by inappropriate loading (often termed ‘overuse’) where the tissue capacity becomes unable to cope with the physical demands placed on it.

Sprains

Joints are stabilised by a joint capsule 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 an injury that involves tearing of the ligaments or joint capsule or both. Common sites for sprains include the thumb, ankle and knee.

Strains

Muscles are anchored to joints with connective tissue called tendons. Injury to these tendons or the muscles themselves is called a strain. Common sites for strains include the calf, groin and hamstring.

Symptoms of sprains and strains

The symptoms of a sprain or strain may include:

- pain
- swelling
- stiffness
- reduced efficiency of function.

Degrees of severity of a sprain or strain

Acute soft tissue injuries can be graded according to their severity:

- **grade I** – a small percentage of fibres are torn and the site is moderately painful and swollen, but function and strength are mostly unaffected
• **grade II** – a moderate percentage of fibres are torn and the site is painful and swollen, with some loss of function and strength

• **grade III** – the soft tissue may be completely ruptured, with considerable loss of function and strength. It’s recommended to seek a medical opinion for these injuries.

**First aid for sprains or strains**

Suggestions for immediate treatment of acute sprains or strains include:

- Stop your activity.
- Rest the injured area.
- Put icepacks on the area for 20 minutes every 2 hours, separated from the skin by wet towelling.
- Compress or bandage the injured site firmly, extending the wrapping from below to above.
- Elevate (raise) the injured area above heart height whenever practical.
- Avoid heat, alcohol, running and massage of the affected area in the first 72 hours after the injury, as this can increase swelling.
- If symptoms get worse in the first 24 hours, see your doctor for further medical investigation.

**Overuse injuries**

An overuse injury can affect anyone from athletes or those who play regular sport, to those who spend hours every day at a computer keyboard.

An overuse injury often worsens over time if it’s not properly dealt with. These injuries can result in pain during activity and possibly pain at rest. Contributing factors to overuse injuries include exercising too frequently without enough time for recovery, structural abnormalities and poor technique. Understanding the natural progression of the injury and adjusting any contributing factors is necessary in any treatment plan.

A rehabilitation program that includes progressive ‘reloading’ of the injured area is essential. Overuse injuries can take time to rehabilitate properly, and require patience and commitment from clinician and patient to see improvement.

**Treatment for sprains and strains**

Most soft tissue injuries take a few weeks to heal, depending on the severity of the sprain or strain, any subsequent injuries or issues such as weakness, stiffness, poor balance or function, and the general health of the person. It’s important to get the correct treatment as soon after the injury as possible to help faster recovery. See your doctor or physiotherapist if you don’t have full function of the area, or if the pain and swelling don’t subside after a couple of days.

Treatment may include:

- exercises, under the guidance of your doctor or other health professional, to promote healing, strength and flexibility
- manual techniques, such as mobilisation and massage
- electrotherapy
- pain-relieving medication (talk to your doctor or pharmacist before taking any medications, as they can sometimes disrupt the healing of soft tissue injuries)
- gradually introducing activities to back-to-normal levels.

Severe injuries, where the tissue has completely ruptured, may need surgery to put the torn pieces back together. Surgically repaired grade III injuries will require significant treatment to regain strength and function. Whether you have surgery, or a period of immobilisation and physical therapy, as the treatment for a grade III injury, medium to long-term functional outcomes is similar for either treatment.

**Where to get help**


betterhealth.vic.gov.au