



Sprains & Strains

Boot Camp & Military Fitness Institute

Sprains and strains are injuries to muscles, tendons and ligaments. They are very common sports injuries, but can also happen during normal daily activities. Correct treatment gives the best possible recovery in the shortest possible time.

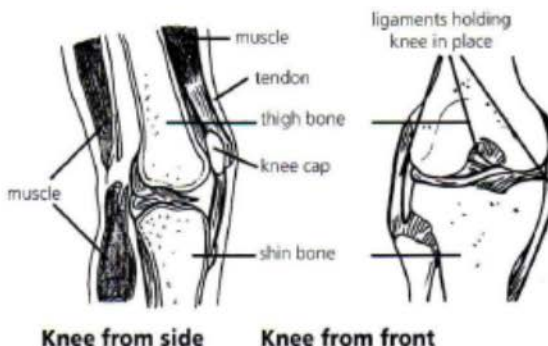
Injuries to muscles, tendons and ligaments are called soft tissue injuries.

Muscles

A **strain** (or 'pulled muscle') is a stretching or tearing of muscle fibres causing pain, reduced movement and sometimes swelling. A strain often causes some bleeding within the muscle, and may lead to a haematoma (blood-filled swelling) in the muscle. A corks thigh ('corky') is a haematoma in the thigh muscle. Muscle strains often also involve tendon damage.

Tendons

Tendons join muscles to bones. **Tendonitis** is inflammation of a tendon. It causes pain and tenderness near a joint. Tendons are surrounded by a protective sheath. **Tenosynovitis** is inflammation of the tendon sheath. It causes pain, swelling and sometimes a grating feeling or crackling sound when the joint is moved. Tendonitis and tenosynovitis are often caused by overuse of a tendon (e.g. due to repetitive movements).





Ligaments

Ligaments join bones to bones to help form and stabilise joints. A **sprain** is a stretching or tearing of ligaments (and other tissues that hold a joint together) usually due to twisting or pulling (e.g. sprained ankle). A sprain causes pain, tenderness and swelling around the joint, sometimes followed by bruising and problems with movement.

First aid

It is advisable to use the **RICER** method for the first 48 hours after soft tissue injury.

- **Rest** and support the injured part for at least 48-72 hours to protect from further damage.
- **Ice** the injured area for 15 minutes every two hours for 24 hours, then 15 minutes every four hours for 24 hours. Use ice, a pack of frozen peas, or a cold pack. Wrap in a damp cloth to avoid 'burning' the skin. Ice reduces pain, inflammation and bruising.
- **Compression** - apply a firm, wide, elastic bandage to reduce swelling and bleeding and to support the injured area. The bandage should extend well above and below the injury and should not be too tight (do not cut off circulation). When using an ice pack, hold it in place with the bandage. Continue compression between ice treatments.

- **Elevation** - if possible, keep the injured part above the level of the heart, to reduce swelling and bleeding. This is most important in the first 24-48 hours and while applying ice.
- **Refer** to a doctor, physiotherapist or other qualified health professional for advice and ongoing care.

Note: If any part of the hand is injured, remove rings from fingers immediately, in case swelling occurs.

Medicines

Always ask a doctor or pharmacist for advice about medicines for pain relief. Medicines that may be used to relieve pain due to a soft tissue injury include:

- Paracetamol - relieves mild to moderate pain and has a low risk of side effects
- Non-steroidal anti-inflammatory drugs (NSAIDs e.g. ibuprofen, naproxen, diclofenac) - relieve pain and inflammation. Always check with a pharmacist or doctor before using NSAIDs, especially in the early stages of an injury, as NSAIDs may cause side effects.
- Liniments and heat rubs - can help reduce pain and stiffness. Avoid for first 48-72 hours after injury or while injury is still swollen or warm.
- Local anaesthetic sprays - can numb the pain.



Self care

Preventing injury

- Wear correct footwear and clothing when playing sport or exercising.
- Stay flexible with regular stretching exercises.
- Keep up your physical fitness for sport.
- Warm up prior to sport or vigorous activities, to warm and loosen muscles. A warm up should involve 2-5 minutes of light activity (e.g. walking, jogging).
- Stretch before and after moderate exercise - warm up before stretching.
- Cool down after exercise by gradually reducing your activity level and then stretching.
- Run on even surfaces.
- Keep to a healthy weight.
- Eat regular, healthy meals, including plenty of fruit, vegetables and grain foods. Limit foods high in fat, sugar or salt.
- To reduce your risk of falls, have your eyesight and balance checked regularly. Remove things you can trip over around your home.

Note: Some medicines can increase your risk of falls by making you dizzy, slowing your reactions or affecting your eyesight. Ask a pharmacist for advice.

Recovery from injury

- As pain and swelling reduce, gently and gradually increase your movement.

Important

It can be difficult to know if an injury is a sprain, break or dislocation. Support the injured part and seek medical advice if:

- Injury swells immediately, with severe pain.
- Any part of the injured area is numb.
- Range of movement in any joint changes a lot.
- Injury is to a child under 12 years or an elderly person.
- Injured part cannot support any weight.
- Pain and swelling does not reduce after 2-3 days.

For the first 48-72 hours after a soft tissue injury, or while the injury still causes severe pain and is swollen, follow **NO HARM** together with RICER first aid:

- **No Heat** - it increases bleeding.
- **No Alcohol** - it increases swelling and bleeding.
- **No Running or Exercise** - it can make the injury worse.
- **No Massage** - it increases swelling and bleeding.



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EXERCISE

- You may need to support the injured area with strapping.
- Strapping can reduce the risk of re-injury.
- Strains and sprains can take from two to 12 weeks or more to heal completely.

Ask a doctor or physiotherapist for advice.

You can read more about injury symptoms and prevention at:

<https://bootcampmilitaryfitnessinstitute.com/injury/>