

## EXERCISES FOR A SPRAINED ANKLE

A sprain occurs when the ligaments, which join bones together, are over stretched and damaged. An ankle sprain can occur on the inside or the outside ligaments of the foot. The most common injury affects the outside ligaments, particularly the anterior talofibular ligament.

Sprains are often graded according to how much the ligaments have been affected. A mild or grade I sprain would involve mainly stretching and perhaps micro tearing of some of the smaller fibres which make up a ligament. A bad sprain could involve significant tearing of the ligaments or a complete rupture and be classified as a grade III.

The first sign that you have sprained your ankle is pain. If there has been tissue damage, there will also be swelling. The degree of swelling and bruising can be an indicator of how badly the ankle has been sprained. Muscles and nerves lie close to the ligaments and may also be damaged.

### Self help

Over the years, acronyms guiding self-management of acute injuries have evolved from ICE to Rest Ice Compression Elevation (RICE), then added Protect (PRICE). Following this, the need for some movement was added with 'Optimal loading'. Unfortunately, these ignore the subacute and chronic stages of tissue healing.

The latest acronyms are **PEACE & LOVE** that encompass the rehabilitation continuum from immediate care to subsequent management.

Immediately after injury, do no harm and let **PEACE** guide your approach.

### Protect

- Unload or restrict movement for 1–3 days to minimise bleeding, prevent distension of injured fibres and reduce the risk of aggravating the injury. Rest should be minimised as prolonged rest can compromise tissue strength and quality. Pain signals should guide the cessation of protection.

### Elevation

- helps the body to drain the swelling away from the injury site. In the first 72 hours after an injury it is advisable to elevate it as much as possible. This would ideally mean resting the ankle on a cushion, above the level of your heart.

### Avoid anti-inflammatory modalities

- The various phases of inflammation help repair damaged soft tissues, therefore inhibiting inflammation using medications may negatively affect long-term tissue healing, especially when higher dosages are used.
- The use of cryotherapy (cold packs, ice, etc) is questionable. Despite widespread use, there is no high-quality evidence on the efficacy of ice for treating soft-tissue injuries. Even if mostly analgesic, ice could potentially disrupt inflammation, angiogenesis and revascularisation, delay neutrophil and macrophage infiltration as well as increase immature myofibers. This may lead to impaired tissue repair and redundant collagen synthesis.

### Compression

- can help reduce bleeding and limit swelling to speed the recovery process. The bandage, or tubigrip applied must be sufficient to accommodate swelling and should be removed when the ankle is in elevation.

### Education/Exercises

- Clinicians should educate patients on the benefits of an active approach to recovery. Passive modalities, such as electrotherapy, massage or acupuncture, early after injury have insignificant effects on pain and function compared with an being as active as tolerated and may even be counterproductive in the long term. Better education on the condition and load management will help avoid overtreatment. This in turn reduces the likelihood of unnecessary injections or surgery and supports a reduction in the cost of healthcare. We strongly advocate for setting realistic expectations with patients about recovery times instead of chasing the 'magic cure' approach.

After the first days have passed, soft tissues needs **LOVE**.

### Load

- An active approach with movement and exercise benefits most patients. Mechanical stress should be added early, and normal activities resumed as soon as symptoms allow. Optimal loading without exacerbating pain promotes repair, remodelling and builds tissue tolerance and the capacity of ligaments through mechanotransduction.

### Optimistic

- Patient expectations are associated with better outcomes and prognosis. Psychological factors such as catastrophisation, depression and fear can represent barriers to recovery. Beliefs and emotions are thought to explain more of the variation in symptoms following an ankle sprain than the degree of pathophysiology.

### Vascularisation

- Pain-free aerobic exercise should be started a few days after injury to boost motivation and increase blood flow to the ankle. Early mobilisation and aerobic exercise improve physical function, supporting return to work and reduce the need for pain medication.

### Exercise

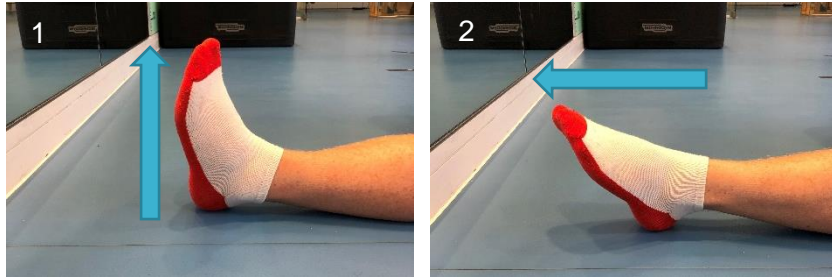
- There is a strong level of evidence supporting the use of exercise for the treatment of ankle sprains and for reducing the prevalence of recurrent injuries. Exercises help to restore mobility, strength and proprioception early after injury. Pain should be avoided to ensure optimal repair during the subacute phase.

### Exercises:

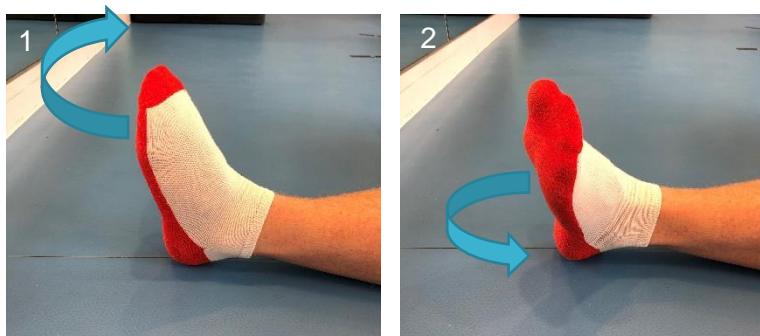
There are four basic movements that occur at the ankle joint and these are the best exercises to start with. You should find that the more you do, the easier they become. You may not manage many in one go in the beginning. It is a good idea to do these little and often.

### Range exercises:

- Bend your foot up and down slowly.



- Move your foot in and out slowly.



### Weight bearing:

Putting weight through the foot is also important for a fast recovery. When walking you should avoid limping even if there is still some discomfort or it means slowing down. Initially you may need to practise to make sure you are walking with a normal gait pattern. The heel is the first part of your foot that should hit the floor and then as you step through, ensure you allow all your weight to move on to your supporting foot. You should also check your strides are the same length. If you need to shorten one stride, do the same with the other leg to make your walking pattern symmetrical.

These progressive exercises look at restoring balance, strength and flexibility:

- Practise standing on your affected foot without holding on and count to 60.



- Stand with your affected foot behind you and keep your heel on the floor as you lean forwards until you feel a stretch on your calf.
- Make sure your feet are both pointing straight ahead.
- Hold this for 20 seconds.
- Repeat the exercise 3 times.



- Stand with your affected foot in front of you and keep your heel on the floor as you bend and push your knee forwards until you feel a stretch in the bottom of your calf.
- Make sure your feet are both pointing straight ahead.
- Hold this for 5 seconds then straighten the leg to let off the stretch.
- Repeat the exercise 10 times. 3 sets.



- Stand and hold on to a support, raise up on to your toes and slowly lower
- Repeat 20 times
- You can progress by doing this exercise with just your affected leg.



### Seek help

When you sprain your ankle, it is important to regain full movement, strength and balance. Seeing a specialist musculoskeletal physiotherapist will ensure your ankle is given the best chance of a full recovery. The initial assessment will identify any reduction in range, strength and importantly, balance. Once you have sustained an ankle injury, you are a lot more susceptible to further sprains if you do not adequately rehabilitate the injured structures. Even if you feel that the ankle is OK in day to day activities, it is worth making an appointment to check that no underlying problems exist.

The exercises and advice offered in this leaflet should not increase your symptoms. If your symptoms worsen or stop improving, seek appropriate medical attention.

### References:

*Dubois B, Esculier J, Soft-tissue injuries simply need PEACE and LOVE. British Journal of Sports Medicine, 2020;54:72-73.*