

Education & Training

Leg and Foot Injuries

Ankle Injury

I am the coach of an amateur football team. If an athlete sprains the ligaments of the ankle, how would I handle the situation in the first 48 hours? JM

Dear JM

The most common ligaments injured in an ankle sprain are the outside/lateral ligaments.

The sprain must be treated from the moment it happens and the player must be helped off the field without putting any weight on the foot and further injuring the ligaments.

The first aid principles are as follows (RICE):

- **Rest:** Activities and massage will increase bleeding and therefore increase tissue damage.
- Ice the injury for at least 20 minutes every two hours as often as possible.
- Use a Compression bandage, like BSN CoPlus to slow down the swelling which is caused by the damaged tissue.
- **Elevate:** Lift the foot to assist drainage away from the injury and towards the heart. At night, put a pillow lengthways under the mattress to keep the foot up.

Note: If you feel that the injury is severe, refer the player to a doctor or physiotherapist.

Strapping Tips:

Latest Tip:

STRAPPING AN ACUTE INJURY

At a recent rugby tournament in Johannesburg, a player was kneed by an opponent and had to leave the field due to severe quadriceps pain and spasm.

She was taken to the first aid area where an over enthusiastic student – not a physiotherapy student – explained to her that acute injuries must be rubbed as often as possible.

The result of this management was extensive bleeding with the formation of a large haematoma.

Although the message of R.I.C.E. has been given over and over again, it seems that many people involved in treating sports men, women and children, ignore this advice.

If tissue is injured, such as with a “Lammie”, there will be immediate bleeding. This bleeding has got to be slowed down and stopped in order to achieve as small a scar as possible. If one rubs the area, the haematoma will be irritated and will not be able to consolidate. This will result in further bleeding and ultimately a larger scar.

If one cools the area, compresses it and elevates the limb in order to promote drainage, the result will be less bleeding into the tissues and a smaller haematoma.



In the case discussed the bandage which should have been used for compression is Co-Plus LF. This

is a latex free, flexible, cohesive bandage. It sticks to itself and not to the skin.

Following an injury, a paper towel is placed on the skin and the ice bag is put on top of it. This is kept in place by the Co-Plus bandage. After 20 minutes the bandage is rolled back onto the reel and the ice bag removed. The bandage is then applied as a compression bandage and is only removed every 4 hours to re-apply the ice. At all times the foot is elevated.

After 48 hours the ice is replaced by warmth in order to encourage a good blood supply to the area. This will promote healing. The compression bandage is no longer needed.

TIP 1: PLANTAR FASCIITIS

Plantar fasciitis is an overuse condition of the plantar fascia at its attachment on the calcaneus. This pathology resembles a tendonosis and it is caused by a foot structure which puts strain on the fascia. Biomechanically, the foot may be flat or high arched with an over pronating gait. Activities which aggravate the condition include running or dancing. Incorrect footwear will also place the fascia at risk. There are many other aggravating factors such as muscle inflexibility and diminished ankle dorsiflexion which must be taken into account.

Leukotape P 3.8cm strapping is used as an essential part of the treatment

- To support the longitudinal arch and control pronation.
- To control the calcaneal neutral position
- Proprioceptively

The application of the strapping technique is as follows:

1. The patient lies prone with his foot over the edge of the plinth.
2. Two strips of Leukotape P are used as anchors round the foot. The first strip is just proximal to the metatarsal heads. The second, proximal to the first, overlaps the first by a third. N.B. The anchors must not be too tight.
3. This anchor gives the stability for the next two strips.
4. Starting on the lateral side of the anchor, tape along the lateral side of the foot to the heel.
5. Tape right around the heel and then tape across the medial calcaneus and plantar aspect of the foot to end on the lateral side of the anchor where you began. The last section of the tape is at 45 degrees to the anchor. Repeat a mirror image of the first tape by starting and ending on the medial side of the foot

- at the anchor.
6. Place two strips over the anchor starting laterally to medially to support the medial arch (Only one anchor is shown in the photograph. The second anchor would be more proximal.)
 7. Always question your patient after you have completed the strapping to ensure that the tape is comfortable.



Refer to the Leuko Strapping Guide for basic guidelines.

TIP 2: ANKLE SPRAIN

Much has been written about the treatment of a sprained ankle. The Leuko Strapping Guide shows different ways of strapping the ankle, depending on whether it is an acute ankle sprain or an ankle which needs to be taped for “return to play”. It is this “return to play” period which may put the ankle joint at risk if not correctly strapped.

The ligaments which stabilize the ankle joint are the ligaments which are injured in an ankle sprain. It is usually the lateral ligaments but sometimes it is the medial. This in turn has an effect on the subtalar joint.

The talus plays a very important role in gait and the stresses on this bone are enormous. Its stability depends on strong ligaments. If the player returns to sport when the ligaments have not completely healed the heel lock taping method utilizing Leuko Sportstape Premium 38mm or Leukotape P 38cm strapping is used for this stability. The heel lock is placed over the normal strapping such as the Figure of Six.

The application of the strapping technique is as follows:

1. The physiotherapist must be able to strap under the foot and ankle therefore the calf must rest on, for example, a kitbag to give the area height and space.
2. Because the ankle has already been strapped, an anchor is not necessary.
3. Tape 1: Starting on the anterior lateral aspect of leg just above the ankle, the strapping passes around the posterior aspect of the Achilles Tendon.
4. It then runs at 45 degrees over the medial calcaneus, passing under the foot and ending on the anterior aspect of the foot.
5. Tape 2: This is a mirror image of the first tape and passes at 45 degrees over the lateral calcaneus.
6. The aim of this strapping is to lock the heel by forming a triangle of rigid taping.
7. Always question your patient after you have completed the strapping to ensure that the tape is comfortable and that the ankle feels stable.

Refer to the Leuko Strapping Guide for basic guidelines.

TIP 3: PATELLA MALTRACKING IN A COMRADES MARATHON RUNNER

The ultra-marathon race, the Comrades Marathon is only a few months away. Every year BSN medical, makers of the Leuko products, offer free strapping advice at the Comrades Experience which takes place before the Comrades Marathon. Many runners complain of anterior knee pain and ask for help. A strapping technique for Patella Maltracking has been devised for these long distance runners which:

- Must remain in place for the gruelling 89 kilometres
- Must have an effect on the patella by placing it in a neutral position on the femur (any strapping placed over the patella will fall off during the race)
- Will have a proprioceptive effect to the advantage of the runner

Three products are used for this taping technique.

- Leukotape P 3.8mm is a strong tape with very good adhesive properties.
- Fixomull Stretch is an under-tape which is more gentle to the skin
- Leuko adhesive. This recent addition to the Leukotape basket of products, is a very effective adhesive. It has an added advantage of being a blue spray which is then seen on the skin.

The application of the taping technique is as follows:

1. With the knee in extension and the quadriceps relaxed start by placing two anchors of Fixomull Stretch around the thigh and lower leg, above and below the knee
2. Spray the Leuko adhesive on either side of the patella between the anchors.
3. Strips of Fixomull Stretch are then placed over the adhesive on either side of the patella. This can be done in a diamond shape or in a diagonal shape.
4. A strip of Leukotape P is put over the Fixomull Stretch strip from anchor to anchor right next to the patella. As it is placed on the leg, the patella is stressed medially in order to align it correctly. Due to the position of the tape, the patella remains in the medial position.
5. A second strip is placed laterally to the first strip in order to keep the first strip in place.
6. Strips are applied to the medial side in order to make the strapping stable.
7. Finally, tape is applied over both Fixomull Stretch anchors, in order to cover the ends of the strips.
8. If the runner finds Leukotape P too restrictive, Leukoband S (E.A.B.) 50mm may be used around the leg. In her experience, the author has not found the use of Leukotape P a problem.
9. The tape cannot be tested after it is applied but runners, using this taping technique, have reported back very favourably after completing the race.



Please forward any queries or comments with respect to injuries, techniques or Leuko products to askleuko@bsnmedical.com for advice from the Leuko Strapping Panel, who are members of the South African Society of Physiotherapy. Selected questions will be loaded onto the BSN medical website www.bsnmedical.co.za for reference purposes.

Refer to the Leuko Strapping Guide for basic guidelines.

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