Essentially, taping and strapping is an adjunct to total injury care, but it is by no means a substitute for treatment and rehabilitation. The main uses are to limit and restrict movement within a joint and the stretching of soft tissue, offer compression to oedema, or to maintain and correct alignment and posture.

**What it is and how it works**

Taping and strapping may help to both prevent and treat injuries for athletes and sportspeople, but also for clients in general. On a physiological level, taping helps to improve proprioception by maintaining joint alignment. It allows the affected area to rest, which may prevent and reduce swelling. If an injury is not rested and treated correctly, it can potentially lead to further inflammation, delay recovery, and even hinder the full regaining of normal function in the area.

The therapeutic benefits of taping and strapping may include a reduction in pain, muscle spasm and the risk of further injury. A study by Garrick and Requa (1973) demonstrated that use of taping reduced the risk of re-injury by up to a third and, in addition, it potentially reduced the risk of injury in previously uninjured athletes. However, one of the biggest implications of taping and strapping is the psychological impact that it has for many athletes and non-athletes. Hume and Gerrard (1998) demonstrated that taping has a positive effect on the injured athlete on a psychological level. It can be used to remind an athlete to be cautious of the injured or affected area. A specific example could be a client with rounded shoulders. If applied correctly, a technique can be administered so that whenever the client overlengthens the muscles causing the poor posture, the tape will draw them back and remind them to maintain good posture.

**Importance of professional treatment**

Unfortunately, taping is sometimes used without real understanding of why – and often incorrectly. Many people self-treat, taping an injury to try to continue activity, rather than aid recovery.

In some less severe circumstances, this can help, but at other times the problem is far worse than the client appreciates. For example, a volleyball player injures their ankle during a game, and without a professional assessment of the ankle ligaments, they apply a technique they have found on the internet. Incorrect application using the wrong techniques for the injury could potentially apply even more damaging force to the ankle, which may delay recovery and potentially lead to further (and even permanent) injury, especially if they continue to train when rest and rehabilitation is required.

It is important that trained professionals administer taping and strapping to ensure the correct restriction or limit is established in order to protect the injury. Pressure that is too tight can potentially affect circulation, but if it is too loose it may not offer enough support. Important factors, such as joint alignment or compensatory postural adjustment, which could affect the athlete’s recovery, require full assessment and treatment from a practitioner who has undergone correct training. A lack of professional treatment and incorrect application could mean that an injury repairs out of alignment or potentially develops into some form of deformity.

Even though taping and strapping has a number of positive effects, it also has a limited life span in which it is effective. Barick et al (1962) originally found that up to 40 per cent of support was lost after 10 minutes of vigorous exercise, so by resisting professional advice and not allowing time for full rehabilitation the injury is likely to persist or recur.

**Applications of taping and strapping**

Taping and strapping can be used to both prevent and treat a number of injuries all over the body, such as the shoulders, arms, wrists, knees and ankles. Research by Firer (1990) revealed that taping was effective in helping to treat lateral ligament injuries. As ankle sprains are the most common form of musculoskeletal injury that affects athletes (McGuine and Keene, 2006), this may explain why taping and strapping is most commonly used on ankle injuries, as well as knee injuries.

A study by Stasinopoulos (2004) compared three preventative methods to reduce the incidence of ankle inversions. The author compared the use of taping or braces, technical training and proprioceptive training. The study concluded effectiveness in all three conditions, providing the athlete had suffered no more than two ankle sprains in their career.

When using taping and strapping in a sports context to prevent a potential injury – rather than treat an existing one – consider whether the taping may impact on an athlete’s performance. For rehabilitative purposes, sport coaches tend to be more
If a player is injury prone then it may be necessary to use taping as a preventative measure, even if it slightly affects their performance.

lenient if the player’s performance is temporarily affected to promote injury recovery, but not so accepting if his team’s performance is compromised for preventative purposes. The body has natural protective mechanisms so it is important to have a programme that allows their body to function as well.

When using taping and strapping for preventative purposes, it is important to weigh up the balance between performance and risk of injury. If a player is injury prone then it may be necessary to use taping as a preventative measure, even if it slightly affects their performance. This may be the only way of keeping that player injury-free, at least until the player has strengthened the specific area that is weak and susceptible.

Taping and strapping is also suitable for a client outside the sports context, for example, to speed recovery of a wrist injury caused by slipping on ice, or for general conditions, such as poor posture.

There are a number of contraindications to taping, including open skin/wounds, bruising in and around joints and muscles, tape allergies and circulation problems. Before application, the client’s full history and an assessment of the injury and affected area requiring support is undertaken.

A few key points to take into consideration are:

- movement that needs to be limited in order to promote rest and rehabilitation;
- functionality and practicality for the client’s general everyday activities, such as walking; and
- full assessment and analysis after application to ensure normal sensation and circulation, and that the tape is fulfilling treatment objectives, such as protecting the injury or limiting movement.

Types of tape

The most common types of tape are zinc oxide, elastic adhesive bandage (EAB) and elastic cohesive bandage. Zinc oxide is a non-elastic, rigid tape that sticks to skin, which is mainly used for ligament problems to help restrict unwanted movement within a joint capsule, offer stability, and improve proprioceptive feedback.

EAB also sticks to the skin and is commonly used for compression purposes. It is mainly used over muscles to allow a certain degree of expansion during exercise. Zinc oxide is often used as the anchors and EAB is commonly taped from one anchor to another (depending on the technique). EAB would not be used in a first aid situation as compression could be too severe for the injury.

Elastic cohesive bandage sticks only to itself and not skin, and its general use is for covering and reinforcing other taping techniques, wrapping an injured joint for compression or wrapping a healthy joint for additional support.

Example of taping application

A common injury that many athletes suffer from is an ankle sprain. There are many different taping techniques that can be used to support an ankle sprain, some more complex than others. It is important to only tape once a full assessment has been carried out to gain complete understanding of the injury. Taping should not be administered if the skin is broken, or if there is excessive swelling and bruising, as it may make the problem worse.

The aim is to limit any unwanted movement in the lateral ankle ligaments, which will help to protect the area against further injury. It offers compression to areas with swelling and may provide confidence during functional activities. An athlete can exercise if the injury is not acute or if taping is being used for preventative measures. This taping technique can be kept on for between three and six days, but if an athlete is performing with the tape as a preventative measure, then it should be removed after training or games, and then re-applied if and when required.

Equipment used:

- Zinc oxide tape
- Cohesive bandage
- Under wrap (optional)
- Tape scissors

1 Area is prepared, under wrap is applied if required.

2 A first anchor is applied just below the belly of the calf muscles. A second anchor is applied to the mid foot. Tape is not applied so tightly that it restricts blood flow to the area.

3 A stirrup is applied from the first anchor medially under the foot and back to the first anchor.

4 A horizontal strip is applied from the second anchor medially, at the level of the ankle bone, around the heel back to the second anchor (more tension is applied on the lateral side).
Taping and strapping

Nick Hamblin is a sports therapist who specialises in sports injuries and is the founder of Sports Therapy Plus. He is also a qualified football, weightlifting, and speed, agility and quickness (SAQ) coach. He has a degree in sports science and offers a range of programmes including intervention strategies of performers, biomechanics (assessment), strength and conditioning, and general physical activity development. For more information, visit sportstherapyplus.com

References


TIP: As a general principle, tape in the direction that will shorten the injured structures.

5 A second stirrup is applied as in step 3 by overlapping the stirrup by two-thirds anteriorly.

7 The initial anchors (step 2) are applied to seal the ends of the tapes.

8 A heel lock is applied at this stage. This starts from the front of the lower leg. The rein of tape is run laterally behind the heel and under the foot.

6 A second horizontal strip is applied as in step 4, ensuring overlap by two-thirds and pulling strongly on the lateral side. Three or four stirrups and three or four horizontal strips are the aim (depending on client size).

9 The rein of tape is then brought over the outside of the foot and run to the inside of the lower leg.

10 The taping is completed with a cohesive wrap to help keep all of the tape on and offer additional support.

11 A heel lock is applied at this stage. This starts from the front of the lower leg. The rein of tape is run laterally behind the heel and under the foot.

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