

Using Orthotics Made Easy: Taping & Orthotic Therapy

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I am often asked by patients if they can use tape to treat their condition, in place of customised foot orthotics. Sometimes this arises out of financial considerations, and other times because they do not understand the specific roll that a taping procedure plays when treating lower limb biomechanical dysfunction.

I frequently incorporate taping therapy into my treatment regimes to help patients who may be unsure of orthotic therapy, to identify whether orthotic therapy will be of benefit. I also incorporate taping in conjunction with orthotic therapy for a period of time to gain optimum results for the patient.

There are numerous conditions for which a taping procedure can be beneficial, including Plantar Fasciitis, Osgood Schlanders condition and knee pain (such as Chondromalacia Patella).

Plantar Fasciitis (or heel spur syndrome as it is often referred to as) is a classic case where the use of a low dye strapping technique is particularly effective as a temporary treatment to 'mimic' the realignment and support given by an orthotic. Low dye strapping seeks to control the foot and lift the longitudinal arch at the sustentaculum tali, and to limit excessive calcaneal eversion. It works by lifting the arch, controlling the rearfoot and hence shortening the foot structure, which in turn will reduce the

elongation of the plantar fascia and the tension at the calcaneal attachment.

This method of treatment is very effective, however, the tape must be replaced within 3-4 days, and some patients have allergic reactions to the zinc oxide tape. Low dye strapping is especially effective for long term foot pain sufferers, Severs Disease and Achilles Tendonitis patients, when used in conjunction with an orthotic device.

Note in figure 1 (below) how the tape is crossed over in a 'figure of eight'.

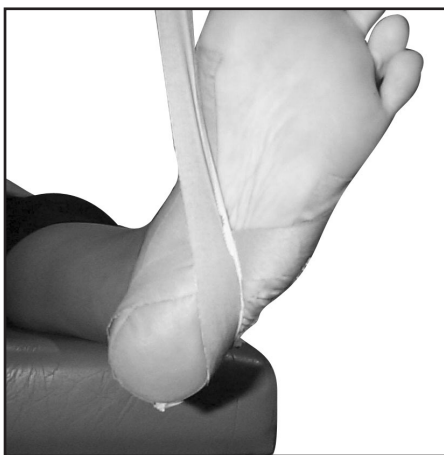


Figure 1: Low Dye is a temporary orthotic 'mimic'.

Osgood Schlanders Condition is interesting as it responds very quickly to a combination of orthotics (to treat the excessive pronation) and strapping (to reduce tension on the patella tendon). The complicating issue with Osgood Schlanders is external tibial torsion, which should be treated by a practitioner who uses 'gait plate' therapy to correct the torsion. Growth spurts combined with excess pronation, a highly active child and external tibial torsion are all contributing factors. Strapping may

be used exclusively to treat Osgood Schlanders (see fig. 2 & 3). However the condition and associated pain often appears to 'flare up'. Controlling the patients' biomechanics is essential for effective treatment and, in my experience, a combination of taping and orthotics is, in my experience, the most effective.

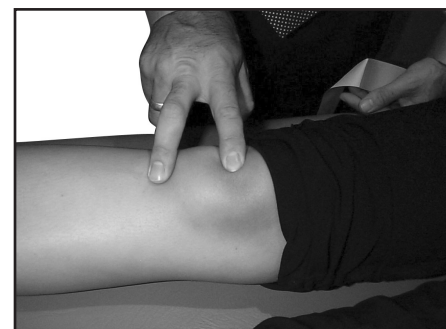


Figure 2: Identify position of the patella



Figure 3: Using tape affix, twist and firmly apply. Then cover with a protective piece of tape.

As discussed in Issue 8, medial knee pain can be controlled using orthotic therapy. Internal tibial rotation is associated with excessive pronation, resulting in medial displacement of the patello-femoral path and encouraging lateral displacement of the patella (knee cap). This is a common problem and elicits pain and around the medial

aspect of the patella, especially with excess loading activities such as running.

Internal tibial rotation is also responsible for creating medial collateral strain of the ligamentous structures that wrap around the medial aspect of the knee and lower leg (Cosgarea, 2002).

Excessive pronation causes excessive strain to the medial co-lateral ligament. As a factor of this condition the VMOs weaken and the ITBs tighten, causing external rotation of the femur as a compensation. The patella ends up tracking on the lateral aspect of the femoral condyle and a crepitus and grinding feeling is experienced on flexion to extension.

Strapping using the McConnell technique and strengthening the VMOs is a good treatment regime, however, it will NOT correct the cause of the problem, as it will only assist in pain relief. The condition and pain will generally recur constantly until the knee has degenerated or become OA (osteoarthritic) - at which time surgical intervention may be needed.

A basic requirement to reduce rotational stress on the knee is control and correction of the STJ (Subtalar Joint) and MTJ (Midtarsal Joint) pronation.

I have found the most effective biomechanical treatment for medial knee pain, involves 3 steps - performing 2 taping techniques, combined with biomechanical alignment:

1. McConnell Technique - to control lateral/medial patella displacement.
2. Low Dye Strapping - to mimic orthotic treatment. However, low dye is only a temporary treatment.
3. Orthotics to stabilise the structure and limit excess pronation. The orthotics should be moulded to the patient's NCSP (Neutral Calcaneal Stance Position) so as to control STJ and MTJ pronation - this is a more effective in producing long term results.

References:

COSGAREA, A.J., BROWNE, J.A., KIM, T.K. & MCFARLANE, E.G. (2002) Evaluation and Management of the Unstable Patella, *The Physician and Sports Medicine*, 30, 10