

Elastic Therapeutic Tape and the Foot Care Professional

As foot care professionals, sometimes our advice and treatment are undermined by patients resuming the same activities that landed them in our offices in the first place. How exciting would it be to have a sticky, stretchy little assistant that reminded our patients for 2-5 days about positional awareness?

Enter.... elastic therapeutic tape!

By now, the vast majority of practitioners have had some exposure to elastic therapeutic tape (ETT) or “kinesio-tape”, the commonly used brand name of developer Kenzo Kase. ETT companies claim it “reduces muscle soreness, improves function, decreases bruising, and decreases pain”. To varying extents, these claims appear to be accurate.

Anything that touches the body’s biggest organ, the skin, has a cutaneous mechanoreceptor effect that stimulates receptors to enhance body kinesthesia or movement awareness. By stimulating large skin mechanoreceptors, kinesiology tape can also downgrade painful stimuli from the nociceptors, which decreases pain perception.

Early and persistent reasoning suggested that using the tape in an “origin to insertion”, or “muscle action” methodology, best serves to support/stimulate external body areas. While this approach probably makes the most intuitive sense to medical practitioners as it follows anatomical “rules of engagement”, emergent theories, which consider entire postural muscle groups, are making a strong case.

Dr. Steven Capobianco, developer of the Fascial Movement Taping (FMT) method argues that taping should be *“based on the obvious yet largely overlooked concept of muscles acting as a chain... the body’s integration of movement via multi-muscle contractions as a means of connecting the brain to the body’s uninterrupted fascial web in order to enhance rehab and athletic performance via cutaneous (skin) stimulation. By taping movement rather than muscles, FMT has demonstrated greater improvement in both patient care and sport performance.”*

Dr. Capobianco is not alone in this line of thinking. Leading fascia researcher, Robert Schleip PhD, underscores movement and its role in pain and dysfunction¹. Additional support for this model comes from Thomas Myers in his ground-breaking book, “Anatomy Trains”². He offers a template to assess, treat, and manage body-wide motor dysfunction based on myofascial meridians, and movement impairment.

Recent research indicates that kinesiology tape has a greater stimulatory effect with compromised tissue (due to injury or fatigue due to poor posture). Thedon, et al³ conducted a study to evaluate body sway in individuals with and without tape. They found that the tape showed very little change in the uncompromised condition, but when the subjects were fatigued, the tape provided an added stimulatory effect to the skin helping to compensate for the loss of information fed to the brain from the muscles and joints. For the pain and performance community, this study provides insight into an “auxiliary” system, such as the skin, to augment treatment and training outcomes.

A 2012 study⁴ of 32 surgeons, showed a statistically significant reduction in neck and low back pain (using Oswestry Low Back Disability Index and Neck Disability Index) and functional performance (using neck and low back range of motion scores) with the use of ETT during surgery. This may have far-reaching implications for other jobs/activities where sustained positions result in musculoskeletal pain.

The value of ETT was underscored for me recently when a patient who had been suffering from plantar fasciitis for 2 years commented, “*the pain is growing*”. She traced a line from the insertion of the tibialis posterior along the peroneus longus and into her lateral gastrocnemius.

Out of desire to help her immediately, I pulled out the ETT. I made a continuous sling of tape



from her peroneus brevis, pulling her foot slightly into inversion, tracing a fascial spiral along the tibialis and peroneal group right up to the head of her fibula. I finished with a “compression strap” of 50% stretch across the lateral gastrocnemius where she indicated the most point tenderness. Then, like most busy practitioners, I forgot about Julie until 3 days later when our office manager received a call from her wanting to know “*what the heck was in that tape*” and why hadn’t she “*been offered this treatment months ago?*” She had apparently experienced 2 pain-free days in her calf for the first time in recent memory. Julie returned that very day to buy a roll of tape and to have me show her how to self-apply for her particular symptoms.

While not a panacea for all musculo-skeletal pain of the lower limb, Julie’s success using ETT is certainly not isolated. It works very well for patellar tracking issues (think of all the “colt-like” teenage female basketball/volleyball players with sore knees!), tibialis anterior/posterior tendonitis, gastrocnemius strain, Achilles tendonitis, inversion sprains and (here’s the semi-magical part) edema! The protocol for contusion and edema is nothing short of fascinating. Because the tape literally lifts the skin, rather than compressing it, the micro-circulatory system (lymphatic and venous) is enhanced rather than constricted. The elastic pull on the epidermis/dermis layers creates an area of lower pressure to assist in fluid dynamics (acute/chronic edema).⁵



There’s a notable difference in the hematoma on this biceps tear just 48 hours after the use of ETT.

Included are a few common musculoskeletal conditions where foot care professionals can utilize elastic therapeutic tape to enhance proprioception and quite possibly the outcome. For step-by-step video instruction on applying ETT for a variety of lower limb complaints, go to www.rocktapecanada.com (VIDEOS then "FEET & HANDS")

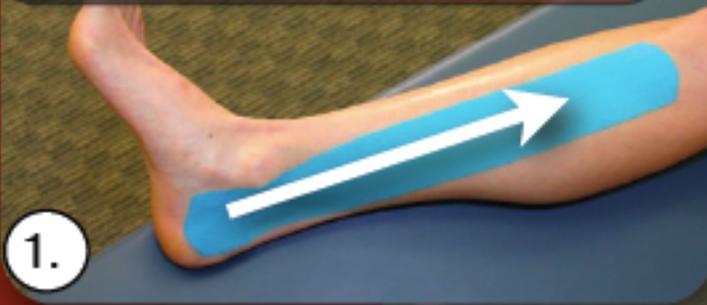
Plantar Fasciitis



1. Flex foot. Anchor tape to heel and run to ball of foot with no stretch. **Optional:** Cut tape into "fingers".

2. Anchor on top of foot and wrap tape from outside to inside to support arch. Use multiple pieces if needed.

Shin Splints



1. Flex foot. Anchor tape below ankle. Run tape along shin over pain. Tape other side of leg if pain is on outer side of leg. No stretch required.



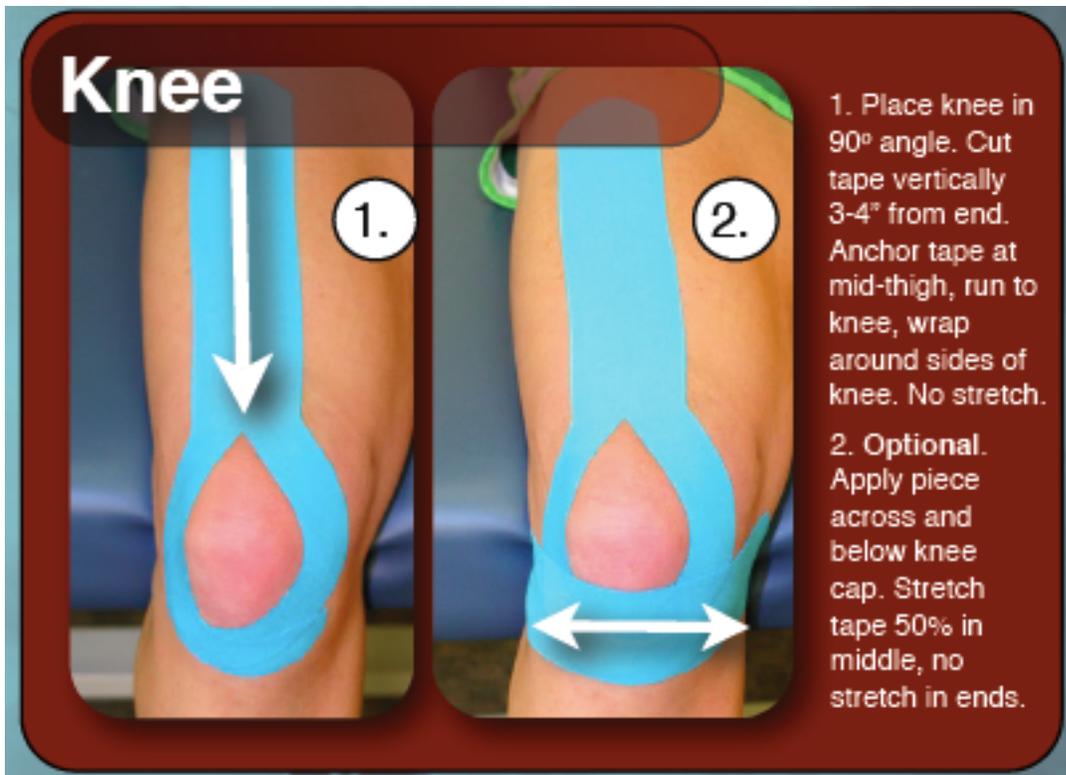
2. Optional. Apply piece across shin over pain or 'hot spot'. Stretch tape 50% in middle, no stretch in ends.

Achilles Tendon



1. Flex foot. Anchor tape at mid arch. Run tape over AT and finish at top of calf. Relax foot and rub down.

2. Optional. Apply piece across AT. No stretch.



Clearly the use of ETT tape is popular (millions of users) and the applications are broad (from athletic injuries to edema). Specific evidence for efficacy is scant but growing, and plausible. There are currently no reported dangers associated with using this elastic cotton mesh bandage, and the only significant contraindication is on open wounds. Good quality ETT breathes well and flexes like a second skin, unlike most braces that act more like abrasive exoskeletons. It withstands sweat and/or water and is by most comparisons a cost-effective treatment modality.

While science is unlikely to discover that ETT is useful for all aches and injuries, foot care practitioners should consider its use in their practices.

References:

1. Schleip R, Muller D. Training principles for fascial connective tissues: Scientific foundation and suggested practical applications. *J Body Move Ther* 2012;1-13
2. Myers, T.W. 2009. *Anatomy Trains: Myofascial Meridians for Manual and Movement Therapists*. New York: Churchill-Livingston.
3. Thedon T, et al. Degraded postural performance after muscle fatigue compensated by skin stimulation. *Gait Posture*, 2011 Apr;33(4) 686–9
4. Karatas N, Bicici S, Baltaci G, Caner H. The effects of kinesiotope application on functional performance in surgeons who have musculo-skeletal pain after performing surgery. *Turk Neurosurg* 22(1):83-9, 2012
5. Chou YH, et al. Case Report: Manual lymphatic drainage and kinesiotope taping in the secondary malignant breast cancer-related lymphedema in an arm with arteriovenous fistula for hemodialysis. *Am J Hosp Palliat Care*. 2012 Aug 9

Additional Reading:

- Konishi Y. Tactile stimulation with kinesiology tape alleviates muscle weakness attributable to attenuation of Ia afferents, *J Sci Med Sport*, June, 2012.
- Thelen M, et al, The clinical efficacy of kinesiotope for shoulder pain. A randomized, double blinded, clinical trial. *Journal of orthopaedic & sports physical therapy*, volume 38(7), July 2008



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