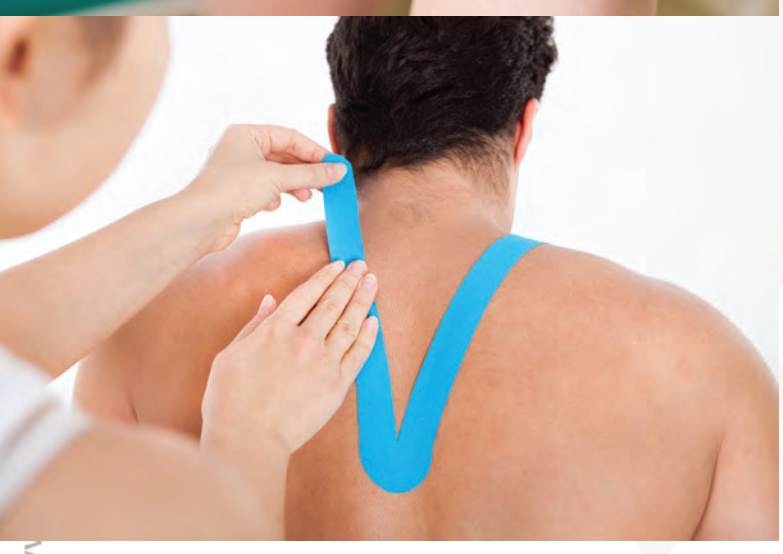

Tape update

Sarah Catlow, MFHT, and Lance Doggart discuss current research into taping and pain reduction

Pain is a major motivating factor which drives a patient to seek help from a therapist. Clients will invest their trust in the therapist's skills in anticipation that these will reduce the pain and make a difference to their health.[1] Kinesiology tape (KT) is designed to mirror the body's skin properties through its use of thin adhesive elastic material capable of stretching between 30 to 40 per cent of its resting length.[2] This distinctive elastic feature is the key factor behind claims that KT can potentially increase circulation, reduce pain and correct mechanical dysfunction.[2,3]

The underlying pain relief mechanisms of KT remain poorly understood.[4] It is speculated that KT decreases pain by lifting the skin and therefore relieving pressure and irritation of neurosensory receptors.[5] According to the gate-control theory proposed by Melzack and Wall (1965) the response to KT concerning pain relief may be explained by a decreased nociceptive input of skin, joints and skeletal muscles by sensory stimulation of the skin.[6]

Empirical research is currently contradictory and inconclusive. Some researchers have found that the application of KT to a pained area significantly reduces the pain perceived by the individuals,[7-9] while other studies have not found significant pain relief with the use of KT.[10,11] Gonzalez-Inglesias et al (2009) reported that there was a significant decrease in pain immediately after the application of KT and at 24 hours post application.[12] Thelen et al (2008) did not show a significant decrease in pain, although there was an increased range of movement, while Miller et al (2013) showed a three-day delay in a reduction of pain when using the visual analogue scale during movement.[2,13] Oliveira et al (2013) measured pain at rest, during daily living activity and movements that required effort, following the application of KT to the injured site.[14] The results showed there was not a significant decrease in pain when KT was applied following injury but there were positive effects in the pain reduction after two weeks of application.

Immediate reduction in pain, upon application of KT, appears to be a common finding although the degree to which it is reduced and the results associated with its long-term benefits vary considerably. Over a longer period of time KT seems to be less effective but there is a lack

of reliable empirical evidence to support this conclusively. This is highlighted by inconsistent methodological approaches (tension of tape and duration of application) to the analysis of such effects. None of the research within pain measures the patient's perception or beliefs of KT, which will also have an effect on the reduction of musculoskeletal pain.[4]

Despite the increasing use of KT in clinical practice, its true merit as a pain relieving ergogenic aid is uncertain.[15] The growing popularity of KT can only be attributed, in some respects, to anecdotal evidence for its therapeutic benefit. However, the research surrounding KT is still in its infancy and the scientific evidence to support its use and effects in the role of pain reduction is still being established.[2,16] We both still use KT in a clinical setting and our continued research in the area feeds into our clinical application.

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References

1 Jarrell LF and Mastnardo D (2011). Spinal reflex analysis and pain management, *Journal of the Australian Association of Massage Therapists* 2: 18-22.

2 Thelen M, Dauber J and Stoneman P (2008). The clinical efficacy of kinesio tape for shoulder pain: A randomized, double-blinded, clinical trial, *Journal of Orthopaedic & Sports Physical Therapy* **38**(7): 389-395.

3 Kase K, Wallis J and Kase T (2003). Clinical therapeutic application of the Kinesio Taping method (2 Ed.) Tokyo: Ken Ikai Co.

4 Lim ECW and Tay MGX (2015). Kinesio taping in musculoskeletal pain and disability that lasts for more than 4 weeks: is it time to peel off the tape and throw it out with the sweat? A systematic review with meta-analysis focused on pain and also methods of tape application. *British Journal of Sport Medicine* DOI:10.1136/bjsports-2014-094151

5 Mostafavifar M, Wertz J and Borchers J (2012). A systematic review of the effectiveness of kinesio taping for musculoskeletal injury, *The Physician and Sports Medicine* **40**(4): 33-40.

6 Melzack R and Wall PD (1965). Pain mechanisms: a new theory, *Science* **150**(3699): 971-979.

7 Campolo M, Babu J, Kataryzyna D et al (2013). A comparison of two taping techniques (Kinesio and McConnell) and their effects on anterior knee pain during functional activities, *International Journal of Sports Physical Therapy* **8**(2): 105-109.

8 Saavedra-Hernández M, Castro-Sánchez AM, Arroyo-Morales M et al (2012). Short-term effects of kinesio taping versus cervical thrust manipulation in patients with mechanical neck pain: a randomized clinical trial. *Journal of Orthopaedic & Sports Physical Therapy* **42**(8): 724-730.

9 Jung-hoon L and Won-gyu Y (2012). Treatment of chronic achilles tendon pain by kinesio taping in an amateur badminton player, *Physical Therapy in Sport* **13**(2): 115-119.

10 Merino-Marban R, Mayorga-Vega D and Fernandez-Rodriguez E (2013). Effects of kinesio tape application on calf pain and ankle range of motion in duathletes, *Journal of Human Kinetics* 3: 129-135

11 Aytar A, Ozunlu N, Surenkok O et al (2011). Initial effects of kinesio taping in patients with patellofemoral pain syndrome: A randomized, double-blind study, *Isokinetics and Exercise Science* **19**(2): 135-142.

12 González-Iglesias J, Fernández-de-Las-Peñas C, Cleland JA, et al (2009). Short-term effects of cervical kinesio taping on pain and cervical range of motion in patients with acute whiplash injury: A randomized clinical trial, *Journal of Orthopaedic and Sports Physical Therapy* **39**(7): 515-521.

13 Miller J, Westrick R, Diebal A et al (2013). Immediate effects of lumbopelvic manipulation and lateral gluteal kinesio taping on unilateral patellofemoral pain syndrome: A pilot study, *American Orthopaedic Society for Sports Medicine* **5**(6): 214-219

14 Oliveira V, Batista L, Pitangui A et al (2013). Effectiveness of kinesio taping in pain and scapular dyskinesis in athletes with shoulder impingement syndrome, *SciELO* **14**(1): 27-30.

15 Williams S, Whatman C, Hume PA et al (2012). Kinesio taping in treatment and prevention of sports injuries: a meta-analysis of the evidence for its effectiveness, *Sports Medicine* **42**(2): 153-164.

16 Zajt-Kwiatkowska J, Rajkowska-Labon E, Skrobot W et al (2007) Application of Kinesio taping for treatment of sports injuries, *Medical Sports Press* 113: 130-134.