

The Evolution of Kinesiology Tape

More than pretty colours?

Pink bands in a criss-cross pattern on a tennis player's shoulder, blue strips surrounding a cyclist's knee, a red streak along a hurdler's Achilles tendon: clearly athletes, Olympic and otherwise, subscribe to the use of elastic therapeutic, or kinesiology, tape. But is this a fashion statement or does kinesiology tape have a real function?

Despite its recently ostensible and technicolored appearance on the world stage, kinesiology tape has been in use for over 40 years. Japanese chiropractor Kenzo Kase is credited as its developer and it took 50,000 free rolls and gold medal beach volleyball athlete Kerri Walsh (2008 Olympic Games) before eyebrows were raised.

In many areas of medicine, the use of a modality by athletes and practitioners often pre-dates the scientific explanation of how it “works”. Kinesiology tape seems to be following in those footsteps. Tape companies claim it “reduces muscle soreness, improves function, decreases bruising, and decreases pain” amongst other benefits. So where does the rubber meet the road?

HOW IS IT USED AND HOW DOES IT WORK?

There are differing schools of thought on the methodology for applying kinesiology tape. Early and persistent reasoning suggested that origin-insertion, muscle innervation and muscle action taping best serves to support/stimulate external body areas. This “anatomical approach” probably makes the most intuitive sense to medical practitioners as it follows anatomical “rules of engagement.”

Dr. Steven Capobianco, chiropractor and developer of the Fascial Movement Taping (FMT) method, argues kinesiotaping 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.” (Performance Taping Chain - Rotational Movement Dysfunction)

Dr. Capobianco is not alone in this line of thinking. Leading fascia researcher, Robert Schleip, PhD, underscores movement and its role in pain and dysfunction. New research in addressing movement impairment, rather than joint and muscle pain, has initiated a fast growing movement model.¹

Additional support for this model comes from Thomas Myers in his groundbreaking book, *Anatomy Trains*.² He offers a template to assess, treat and manage body-wide motor dysfunction based on myofascial meridians, and movement impairment.

Application models aside, how is kinesiology tape theorized to work and what is the support?



By stimulating large skin mechanoreceptors, kinesiology tape can downgrade painful stimuli from the nociceptors to decrease pain perception.

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As with anything that touches our body's biggest organ, kinesiology tape has a cutaneous mechanoreceptor effect that stimulates those receptors to enhance body kinesthesia, or movement awareness. By stimulating large skin mechanoreceptors, kinesiology tape can downgrade painful stimuli from the nociceptors to decrease pain perception.

Recent research indicates that kinesiology tape has a greater stimulatory effect on compromised tissue (due to injury and/or fatigue). Thedon, et al.³ 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 the ability of an "auxiliary" system, such as the skin, to augment treatment and training outcomes. Some of the "stickier and stretchier" kinesiology tape brands remain on the skin for up to five days thereby extending the stimulatory effect.

Visual evidence that "something" is happening occurs when kinesiology tape is used on bruising. The elastic pull on the epidermis/dermis layers creates an area of lower pressure to assist in fluid dynamics (acute/chronic edema⁴). The pre-tape and post-tape photos (please see below) are most compelling. Where the tape was applied directly to the skin, bruising dissipates more rapidly than areas without tape.



Bruising with kinesiotape freshly applied.



Post removal of kinesiotape.

OUTSIDE THE BOX

A 2012 study⁵ 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 kinesiotape during surgery. This may have far-reaching implications for other jobs/activities where sustained positions result in musculoskeletal pain.



Application of Baby Belt configuration for later pregnancy.



Fascial sling to offload abdominal strain by redistributing stress to upper scapula-thoracic area.

A final and anecdotally successful use for kinesiology tape, also developed by Dr. Capobianco, is "power taping" during later pregnancy. An example is the "baby belt" application, which attempts to offload the abdominal strain by redistributing the stress to the upper scapula-thoracic area. The tape follows a fascial sling Thomas Myers calls the "spiral and superficial front lines." He and other fascial pioneers suggest that skin stimulation enhances fascial proprioception and as the fascia encompasses the entire body in a "neuromyofascial web" a broader improvement in body posture results.

Clearly the use of kinesiology tape is popular (millions of users) and the appli-

cations 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. Kinesiology tape 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 kinesiology tape is the panacea for all aches and injuries, health-care practitioners should keep this tool in the chest due to its vast possibilities in treating patient complaints. •

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ADDITIONAL READING

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