

# Kinesiology Tape

A crucial part of providing top level care to athletes, as well as the general patient base

By Dr. Kevin Jardine



As progressive therapists, we are always looking for innovative and effective ways to help patients recover and get back into action. One of the tools I have added to my skill set is the use of kinesiology tape. Kinesiology tape offers people of any age and any activity level the opportunity to naturally reduce the discomfort associated with muscle and joint aches and pains.

Advancements in pain neurophysiology have shed light on the treatment potential of kinesiology taping and form the basis of modern education into its use. Current research documents the negative neuromuscular consequences of injuries on a patient's recovery following musculoskeletal injuries. This has led to an increased understanding of the importance of sensorimotor stimulation for both therapeutic and rehabilitative success.



FIGURE A



FIGURE B

What the research has shown us is that virtually all painful conditions are associated with altered neuro-sensory signaling between the muscles and joints affected, and the central nervous system (CNS). The clinical presentation of this is what we call neuromuscular deficits (FIGURE A). This is ultimately where injuries result in an alteration of information coming into the central nervous system and if you have altered information coming in, you will have altered information going out. Therefore, what we are attempting to do with our treatment and rehab strategies is provide the right type of afferent stimulation in order to change the efferent output in the direction of therapeutic intent. This is exactly what we achieve with the use of kinesiology tape (Fig B).

The altered signals experienced by the nervous system after an injury can be normalized due to the afferent stimulation of the tape on the skin. This process occurs through a combination of mechanotransduction and mechanodisruption, leading to neuroplastic changes if prolonged. When the tape is adhered to the skin's surface, it mechanically stimulates the touch receptors. This stimulation is converted into an electrical signal through the process of mechanotransduction. The electric impulse is then sent rushing through the nervous system. Since the impulse is traveling on A-beta fibers, touch receptors, which are bigger and faster than C-fibers and pain

transmitting neural pathways, the end result is the modulation or dampening of the sensation of pain. In the nervous system, as the signaling of pain diminishes, the ability of affected muscles to activate properly is restored.

Rigorous scientific testing is still needed, but anyone who has used kinesiology taping in practice will vouch for the benefits seen in clinical practice. The introduction of pre-cut, ready-to-apply applications like those offered by SpiderTech™ now make applying kinesiology taping more clinic-friendly and time-efficient. The sound understanding of the clinical relationship between a patient's complaint and how you apply the tape underlies the importance of an educational program. The education behind the use of kinesiology tape helps the clinician

understand the multitude of conditions taping can benefit and can also help explain the different ways that the same piece of tape can be applied in order to achieve a different clinical outcome.

One of the main therapeutic benefits of using kinesiology tape in practice is the ability to extend therapeutic input to the patient beyond the office walls. As an example, we can look at something as common as knee pain. With the signals of discomfort actively transmitting to the CNS, the brain will be telling the muscles supporting the knee to "turn off," which leads to an alteration in the timing and sequence of activation and thus a loss of function. In clinical practice, after treating the area I would apply kinesiology tape and instruct the patient to leave it on for 5 days. In this case an upper knee Spider would be applied using a neuro-sensory technique (there are various techniques that are dependent on clinical objectives) resulting in a reduction in discomfort for the patient, but more importantly, a restoration toward normal motor activation. This is crucial if movements and exercise are used as a part of the treatment plan.

Different from traditional forms of tape, kinesiology tape is designed to be flexible, so it moves with the body in motion. The tape also has a very special adhesive that allows kinesiology tape to be in contact with the skin for multiple days of continuous wear without leaving any residue or skin irritation. As seen with many of the Olympic athletes in London, the tape can be worn in very vigorous physical activity as well as during water events like diving.

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The advent of kinesiology taping provides patients, whether athletic or not, an opportunity to "wear their therapy" whether demanding the most out of their bodies or simply trying to get through their day.

*Dr. Jardine is a Chiropractor, health and fitness expert, entrepreneur and innovator in the field of physical and rehabilitative medicine. As a leading therapeutic strategist, Dr. Kevin Jardine owns a multidisciplinary sports therapy and conditioning facility in Toronto called The Urban Athlete and personally treats and advises numerous professional and Olympic athletes and teams. Dr. Jardine is the president and owner of Collaborans, a multimedia healthcare and fitness education company dedicated to helping people live better lives through better health. Dr. Jardine is the original creator of SpiderTech™ products and education, an industry leader in the field of kinesiology taping.*