

Elastic Therapeutic Taping for the Lumbar Spine



By Steve Agocs, DC

Editor's note: This is the first article in a series on functional taping in the chiropractic setting.

Elastic therapeutic taping is a therapeutic approach rapidly gaining popularity in the chiropractic profession. It is a natural complement to adjustments and other adjunctive therapies and rehabilitation for common patient conditions such as low back pain. Use of taping procedures is supported by research, and quick and easy to perform. Furthermore, the effects last for as long as the tape is applied; one application can easily last as long as five days before it needs to be changed or removed.

Elastic therapeutic tape was invented more than 30 years ago ("Kinesio tape") and has gained enormous popularity, more recently thanks to the 2008 and 2012 Olympic Games, as well as from widespread use in sports **such as CrossFit**. This type of tape is different from standard athletic tape in that it is able to stretch as much as 180 percent along its length, whereas traditional sports tapes are rigid. This allows the tape to contour over the body comfortably and allows for full range of motion, rather than restricting movement.

Generally, the tape is woven from cotton and nylon fibers so it stretches along its length, but not across its width, and uses an acrylic medical adhesive that is hypoallergenic. The tape is applied to a paper backing that makes handling and applying the tape very easy, and it can be cut from rolls to the desired length and stretched as the practitioner desires.

Taping for Low Back Pain: Mechanisms of Action

Elastic therapeutic taping has two actions that produce several effects that help low back pain. The tape produces a decompression effect on the skin and the tissues beneath it (particularly the superficial and deep fascial layers). It also stimulates the myriad of sensory receptors found in these tissues, altering the afferent signals back to the central nervous system, as well as the subsequent efferent responses to the taped area. As a result, the tape can mechanically reduce pain and swelling, while improving range and quality of motion.

These effects enhance and support the use of chiropractic adjustments in low back pain patients, and translate to faster pain relief and a quicker, more complete recovery. Because of the movement effects of elastic therapeutic taping, it is recommended that it also be used in the rehabilitation phase of care to support complete range of motion and proprioception, helping to improve the outcomes of active care.

Research Support

Many chiropractors are surprised when they find out how much published research has been devoted to this procedure. Yoshida and Kahanov found that a single piece of therapeutic tape cut into a "Y-pattern" and placed along the paraspinal muscles has a significant effect on lumbar spine flexion in asymptomatic subjects.¹ Castro-Sanchez, et al., performed a study of chronic low back pain and found that pain and disability were significantly reduced, and also noted that ranges of motion and endurance of the trunk

muscles improved in the group who received elastic therapeutic taping.² While not specific to the low back region, numerous other studies describe significant results in pain reduction,³ movement changes³⁻⁵ and proprioception.⁶

Clinical Applications

While there are many approaches for elastic therapeutic taping of low back pain, one of the most popular is also extremely easy and quick to apply. The "H-pattern" utilizes three pieces of tape cut into strips and with the corners rounded off to reduce snagging on clothing. The two strips that run the length of the paraspinal muscles are called "stabilization strips," while the one (more could be used if needed) that goes across the low back from one side to another is called a "decompression strip."

For most low back pain applications, the two stabilization strips are measured for length from the sacroiliac joints to the upper part of the thoracolumbar junction. Cut the strips and round the corners. The decompression strip will be placed across the low back in the area of greatest pain, so measure it accordingly and also round the edges.

While the standard width of elastic therapeutic tape is 2 inches, 4-inch-width tape is also available that works well for the decompression strip in a low back application. The patient should have dry, clean skin that is hair-free or has hair trimmed very short before applying this type of tape.

So as not to limit range of motion, it is better to lengthen the tissue in the area being taped and apply the tape with "paper-off tension" (the natural stretch of the tape as it is removed from the paper backing) than it is to try to stretch the tape to fit the patient. In the case of the lumbar spine, have the patient stand or sit and go into as much lumbar flexion as they can comfortably tolerate.

While keeping the patient in this position, remove one end of the paper backing on the first stability strip, place it about the **sacroiliac joint** on one side and then apply the strip up the paraspinal muscles approximately 1-2 inches lateral of the spinous processes into the thoracolumbar area. Because of the way this tape is applied to the paper backing in the manufacturing facility, the tape will have 15-20 percent stretch as it is applied in this fashion, so even "paper-off tension" has some stretch to the tape. Repeat the process on the other side with the second stability strip (**Photo 1**).

Vigorously rub the strips of tape while being careful to not catch the edges. This helps activate the adhesive, which takes about one hour to fully bond to the skin. The decompression strip is applied over the area of greatest pain and should be centered so that equal portions of tape will run outward from the spine on both sides. For this strip, break the paper backing in the middle of the tape and peel the paper back several inches on both sides from the center as if applying an elastic bandage.

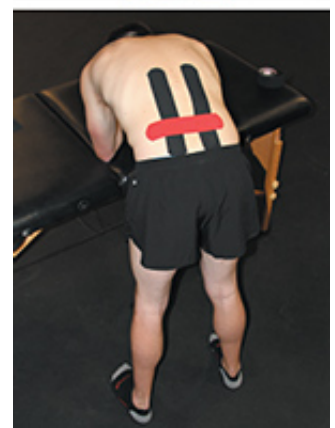
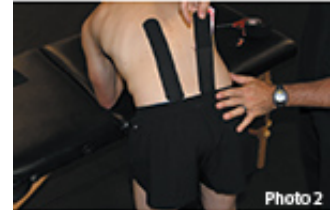
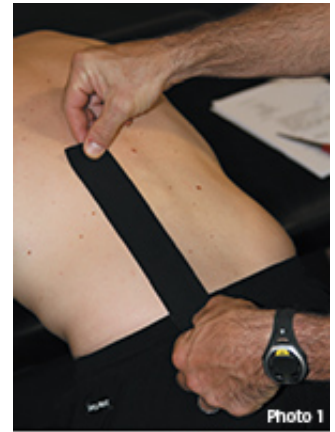
Stretch this central portion of tape approximately 50 percent and then apply it over the spine and rub to activate the adhesive (**Photo 2**). Then continue to remove the paper backing and apply the remainder of the tape on each side with paper-off tension. It is advised to never stretch the ends or "anchors" of elastic tape like this because it is both uncomfortable and the tension will cause the tape to begin peeling off prematurely (**Photo 3**).

When the patient returns to the neutral position, the clinician will notice a rippling effect in the strips of tape. This is the mechanical lifting effect previously mentioned and it is very noticeable on most patients in low back taping applications. Read the instructions and cautions / contraindications included in the box from the tape manufacturer and be sure to explain to patients that they should remove the tape if it becomes itchy, red or irritated; or if they experience a rare, but possible allergic reaction to the adhesive. The patient should also be advised on how to maintain and then safely remove the tape.

In most cases, the patient should keep the tape applied for three to five days, and new applications can be done throughout the acute and subacute / rehab phases of the patient's care without worry as long as they are tolerating the tape as expected.

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Taping the lumbar spine: application from start to finish

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