# Bridging the gap

Kinesiology tape can extend the care you provide.

BY DANA MACKISON, DC

SOME PATIENTS NEED TO BE ADJUSTED FREQUENTLY TO ACHIEVE desired results. At times, a little help between treatments can be beneficial.

Kinesiology tape can assist in bridging this gap for patients with certain health conditions. According to Jake LaVere, DC, at Functional Sports Medicine, "Kinesiology tape can be an adjunctive extension of a practitioner in between visits. It can minimize pain while allowing for greater function and faster recovery. It can also be a great reinforcement to the patient as a takeaway from the office."

Any patient with proprioceptive or pain modulation difficulties will generally respond well to kinesiology taping, which works by using sensory input (i.e., tape on the skin) to correct a dysfunctional pattern. "Taping enables the use of the body's own response, rather than applying a strong external force, to affect change," says Vincent F. De Bono, DC, dean of Logan University. This explains why kinesiology taping applications are safe, gentle, and effective with minimal adverse effects.

To determine if a patient would benefit from kinesiology tape application, ask the following:

- Is the patient improving quickly?
- Will the patient achieve maximum improvement without tape?
- Would kinesiology tape shorten recovery time?
- If the patient's injury is causing mild instability, can kinesiology tape be as effective as a brace or athletic tape in securing the injured area without hindering range of motion?
- Would the patient's pain, swelling, spasm, or bruising decrease quicker with kinesiology tape than without it?

## Different populations, different concerns

As a general rule, younger or active populations tend to present with lower extremity complaints including patellar-tracking disorder, osteoarthritis, iliotibial band syndrome, plantar fasciitis, shin splints, and Achilles tendinitis. Sedentary or older populations often seek help for back, neck, and shoulder pain in addition to ankle and foot pain.

Gregory Doerr, DC, CCSP, head physician at Bergen Chiropractic and Sports Rehabilitation Center, finds that older populations require more neurosensory and osteoarthritis applications.

"Perform pretesting to determine which application should be used," Doerr says. For instance, a single leg squat test might determine when the pain occurs. Then apply tape and test again to see if the pain has subsided. If there is no improvement, the patient may not benefit from that specific tape application.

Application patterns are similar from pediatric to geriatric populations;

## Kinesiology tape tension guidelines

| Technique | Outcome | Tension guideline |
|---|---|---|
| **Note:** As you follow these taping recommendations or personal clinical preferences, make sure to accurately gauge tape tension. | | |
| **Pain reduction** | Pain perception | < 50% |
| **Joint support** | ROM, joint position, joint mobility | < 50% to facilitate motion<br>> 50% to limit motion |
| **Muscle support** | Muscle strength or endurance, power, EMG activation, flexibility, trigger point | < 50% |
| **Neurologic effect** | Proprioception, balance/postural stability spasticity/muscle tone, reflexes, motor function, muscle onset | < 25% |
| **Circulatory effect** | Edema, swelling, blood flow | < 25% |

These recommendations are based on a review of the literature by Phil Page, PhD, PT, ATC, and Performance Health's Global Director of Clinical Research and Education. According to Page, most higher quality studies with positive outcomes used tensions less than 50%.

what varies is the amount of tension applied. "A well-conditioned younger athlete can tolerate higher tension applications right from the start, while a deconditioned older patient would require more applications at a lighter tension," De Bono says.

For seniors 65 and older, skin fragility and irritation can be a concern, especially for individuals on corticosteroids. "Reduce tape tension in an effort to eliminate any skin irritation that could possibly occur," says Ted Forcum, DC, DACBSP, of Back in Motion Chiropractic and Sports Rehab Center. "Instruct patients to remove tape by saturating it with oil or lotion to break down the oil-based adhesive. Pull it off in the direction hair is laying, or if needed, use de-hesive spray."

In contrast, with young athletes Forcum focuses on making sure the tape application achieves the highest functional level by securely adhering it because these individuals will perform at a higher range of motion. "It is important to make sure that the tape application doesn't create limitations, especially with multijoint tape applications," he says.

### The stretch component

When applying kinesiology tape, consider these five main techniques. With each of them, the proper amount of stretch is critical.

**Muscle technique.** Kinesiology taping can provide mechanical correction to a muscle that is strained or requires additional support. According to LaVere, a 50-percent stretch is needed for maximum benefit. The tape should help to provide positional stimulus to the skin, prevent the muscle from overworking, and provide stabilization. Forcum adds that the technique to inhibit a muscle requires a tension of approximately 25 percent: "I use moderate to higher tension when applying the tape over structures where I want to store parallel elastic energy, or provide proprioceptive information to increase the tonal activity of the musculature."

**Pain or analgesic relief technique.** This simple application uses either no tension or tape-off tension. "This involves covering what hurts," Forcum says. "The goal is to inhibit pain sensation by creating afferent input via Merkel cell stimulation. For many, this helps to break the pain-spasm cycle."

In theory, the application of kinesiology tape lifts the skin to allow additional space to decrease inflammation and nerve-ending irritation, LaVere says. He suggests using 25 percent tension with stretched skin to allow for recoiling from the tape when returning to a neutral position. "This will cause a wrinkle effect on the skin, which will increase space above the inflamed site," he says.

**Circulatory or lymphatic technique.** Kinesiology tape is thought to remove edema by directing the exudates toward the lymph ducts. Cut tape into strips and place them in a fanning pattern along the area of complaint at paper-off tension, which ranges from 0 to 15 percent. This technique lifts the skin, LaVere explains, creating additional space and areas of decreased pressure, allowing excess fluid to drain into the lymph ducts and out of the injured area.

"It is thought that the tape will create a potential space and a negative pressure that pulls the fluids out of an area of higher fluid pressure, thereby reducing the inflammation or edema," Forcum says. "However, just a simple application of the tape to inhibit pain will increase a patient's inclination to move the part, which would also increase the normal pump action of the lymphatic system to reduce edema and inflammation."

**Fascia technique.** Fascial applications aim to improve the quality of a movement pattern. This involves applying long strips of kinesiology tape over multiple joints along the involved fascial plane. Other techniques target key areas or points with sections of tape along the dysfunctional fascial plane. "The main goal is to create a change in movement pattern, which will hopefully improve patient function and reduce pain," Forcum says.

## Kinesiology taping can provide mechanical correction to a muscle that is strained or requires additional support.

Sometimes the tape need not cross over the site of complaint.

Generally, the target tissue should be stretched when tape is applied. But if a fascial pull greatly reduces symptoms upon manual muscle testing or functional activity, then tape should be stretched 50 to 100 percent to reproduce the fascial pull, Doerr says. Always use caution when stretching tape beyond 50 percent, as that may increase skin irritation.

**Correctional (joint or postural) technique.** Structural techniques require increased stretch. While 100 percent may be necessary, Doerr suggests that the normal range be between 25 and 75 percent, depending on the condition and patient presentation—including body type. "The tape is applied to assist in mechanical stability in movement and to be a postural reminder to avoid injurious positions," he says.

### Education and training

When applying tape, be consistent. "Knowing anatomy, biomechanics, and proper body function is advantageous," LaVere says. "Getting comfortable with different applications is the most important element of using kinesiology tape."

Many tape companies offer specific training programs in line with their philosophy on kinesiology taping. Doerr offers a hands-on taping program that demonstrates several taping techniques including functional taping for musculoskeletal injuries. Forcum offers an online kinesiology taping program that goes step-by-step through each of the body parts.

### Kinesiology taping expert resources

**Functional Taping for Musculoskeletal Injuries:**
functionalsofttissue.com/about-seminars

**Kinesiology Taping Fundamental Applications: Basics, Upper Extremities, Lower Extremities, Axial Skeleton, and Edema:**
sportmedics.com/kinesiologytaping.html

**Motus Myofascial Kinesiology Taping:**
motustherapeuticmethods.com

De Bono's myofascial kinesiology taping course offers a foundational background to the physiology behind taping, giving the practitioner an understanding of what is happening when tape is applied.

You may benefit by taking other courses that are synergistic with kinesiology taping. Any program that enhances your appreciation of anatomy, fascial planes, biomechanics, neurology, and the pathophysiology of injury would be complementary.

If you are intimidated by kinesiology tape due to concerns about stretching it too much or too little, having an indicator on the tape can enable you to stretch it the right amount each time. CE

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