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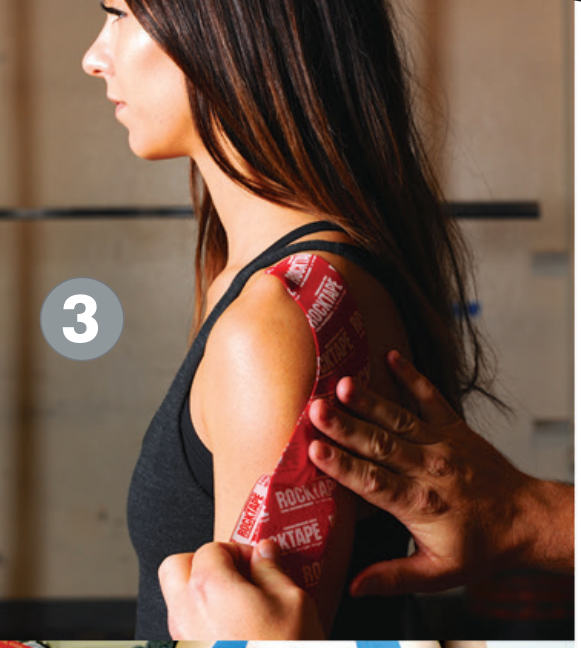

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THE ART AND SCIENCE OF KINESIOLOGY TAPING PART 1

BY STACEY THOMAS, LMT

It was difficult to believe all the colors that converged in rainbow hues on the back of my client's leg. It was as if a box of crayons had been strategically melted to form a Picasso-esque interpretation of a high hamstring pull.

She was a highly competitive athlete in my gym who had sustained what she thought was a minor muscle strain over the weekend during sprint training. On Monday morning, she stood in my office with a look of desperation and pain on her face—and one gnarly bruise spanning the back of her thigh.

Due to the obvious acuteness of her injury, my immediate treatment plan was to facilitate pain reduction and increase blood and lymph flow to the area by way of decompression, without applying any type of manual therapy. I reached for kinesiology tape.

My client wanted the pink tape with black skulls to adorn her battle scar. I happily obliged with a finger-taping pattern that would aid in increasing circulation and removing cellular waste products from the area. In a few days, my client came back with a much lighter bruise than the crayon-like meltdown she had been sporting before.

The lifting effect of the tape had increased fluid flow and acted as a decompression agent, resulting in faded channels within the bruise. Her pain had diminished and she was now ready for more direct manual treatment therapy.

As a licensed massage therapist with a background in strength, conditioning and biomechanics, and with a focus in athletic performance, I see this sort of presentation commonly.

Over the last 17 years in practice, 10 of those spent as a licensed massage

therapist, my continued education has been largely in understanding the movement and modalities that best serve this population.

While I stock many tools in my toolbox, I constantly reach for kinesiology tape. Whether I use myofascial release techniques, Active Release Technique, active isolated stretching or neurokinetic therapy, kinesiology tape complements, reinforces and in many ways strengthens my work.

ART AND SCIENCE

Kinesiology taping has been around for more than 35 years. Chiropractors, physical therapists, athletic trainers and massage therapists have used it for decades, and for many good reasons.

Kinesiology tape has been shown to reduce pain, positively affect fluid mechanics, improve posture and muscle function, speed recovery, and improve sporting performance. That's a giant basket of good reasons.

Today, you'd be hard-pressed not to see the colorful, cool-looking tape on amateur and pro athletes in various sports, as well as folks leaving physical therapy appointments at which they've been treated for common ailments such as knee replacements, shoulder injuries and low back pain.

Not all tape nor taping education programs are equal, however. There are many brands: RockTape, SpiderTech, and Kinesio Tape, among others, and a few schools of thought on how to apply it. Thanks to some forward-thinking folks, the evolution of application and successful client outcomes have led to a more global and more effective method of taping.

Pain is not the only player in the game of dysfunction. Those of us who apply tape in our practice are also able to invoke positive changes in biomechanics, performance, posture, awareness and neuropathies.

If you've read *Anatomy Trains* by Thomas Myers, or *Movement* by Gray Cook, you understand the importance of visualizing movement patterns and treatment along the kinetic chain.

Once a breakdown is identified in a movement pattern, tape can be applied to facilitate awareness and better biomechanics. This is contrary to the old method of taping muscles or

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joints in isolation. Nothing about the human form is static or isolated when it comes to function. Our client population is much better served when our methods of healing are dynamic. The ability to couple knowledge of movement with an effective toolbox of treatment modalities will set you apart from other providers.

Tape movement, not muscles. This is brilliantly simple and enormously effective. This ideology has resonated with me from the very moment it was taught during my education in taping, and it has proven itself every time.

Why tape? And, more importantly, how can tape benefit your work as a chiropractor and benefit your clients? If you're in the field of manual therapy, you already have a grasp of the benefits, the whys, and the how-tos of moving tissues, fluids and fascia, while increasing range of motion.

The power of touch is remarkable. That's why we do it. But how many times have your clients left your office and said, "I felt great for a while, but the pain came back"?

If you understand the role of stability, synergists and compensation patterns, you understand that a returning symptom points to the fact that the site of pain isn't necessarily the root of the issue and other contributing factors need to be addressed.

Once these underlying issues are discovered, kinesiology tape can reinforce therapies to more properly address not only the site of discomfort but also the cause. With taping, you can send clients out the door with the benefits of movement feedback, postural awareness and correction, stabilization and pain reduction. That's super for your clients—and even better for your practice. ●

Stacey Thomas, LMT, is the owner of Altitude Aptitude in Evergreen, Colorado, a manual treatment and performance training clinic where she works with athletes of all levels in a multitude of sports, ranging from CrossFit to mountain biking. She is a certified personal trainer through the National Academy of Sports Medicine, a CrossFit Level 1 coach, and a licensed massage therapist, specializing in Active Release Technique. Stacey is a Performance Movement Taping Instructor for RockTape Kinesiology Tape.

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THE ART AND SCIENCE OF KINESIOLOGY TAPING PART 2

BY STACEY THOMAS, LMT

Kinesiology tape has many benefits and potential uses in a chiropractic practice. Learn how tape works, the effects it produces and contraindications for use to effectively treat your patients.

HOW TAPE WORKS

Considering that the skin contains more mechanoreceptors than any other part of our body, it should come as no surprise that combining manual therapy with a tactile feedback mechanism like kinesiology tape can have incredible results that last long after our clients leave our treatment tables.

When taping athletes, I can literally invoke movement re-education—think posture correction, patterning corrections, and muscle activation; reduce pain and inflammation; and increase sports performance and recovery, all while reinforcing the work done during manual therapy. All of this can be accomplished without restricting range of motion, and in about five minutes or less. Common ailments we see in our offices, such as rotator cuff injuries, whiplash, shin splints, knee issues, low back pain, upper trapezius pain and plantar fasciitis can all benefit from kinesiology taping.

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We all want solid research and evidence to support a treatment modality before we go experimenting on our clients. Paul Coker, P.T., medical director for

RockTape, based in the United Kingdom, offers key scientific points for the role of kinesiology tape in treatment. According to him, the decompressive properties of tape provide three key effects to consider: the fluid effect, the mechanical effect and the neurological effect.

FLUID EFFECT

The fluid effect is induced by the elastic properties of the tape, which produce a vertical lift of skin from the underlying tissue, thus decompressing the space between skin and muscle. Understanding fascia, you get the importance of this. This direct effect on the subcutaneous layer promotes improved blood and lymphatic flow in the area where you apply the tape, thus creating speedy removal of injury waste products and pain-generating chemicals, which in turn promotes healing.

MECHANICAL EFFECT

If I had a dollar for every time the word "awareness" was used in movement and massage settings, I would own movement labs all over the world. We all know that body awareness is critical for numerous reasons, and tape is the superhero of awareness.

Tape has longitudinal stretch properties of about 140 to 180 percent. These stretch properties are similar to those of skin, muscle and connective tissues. Tape taps into the body's stabilization system like a metaphorical tap on the shoulder. By giving your clients a tool that provides a little extra spring and awareness of stretch to the muscles, ligaments, tendons, and joints, you've given them a tactile, mechanical feedback mechanism. As a bonus, it just might also play a role in restoring normal slide-and-glide mechanics between layers of tissue. That's awareness wearing a cape.

NEUROLOGICAL EFFECT

The neurological effect of tape is impressive, but again, not surprising. The decompressive properties of tape reduce pressure and compression on nerve endings just under the skin, making nerves fire less, thus having a direct effect on the pain gate. Do you have a client with

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really tight muscles? Tape the area to reduce the response to being stretched, and you've helped create a less sore and tight muscle. Do any of your clients have weak, sore and injured tissue? Taping will help the body's active stabilization by altering the activity and feedback from nerves in the skin and underlying tissue.

Research indicates kinesiology tape improves power and strength in uninjured muscles; reduces pain and improves function in painful conditions like plantar fasciitis and patellofemoral pain; improves pain, range of motion and function in people with shoulder impingement; and raises the anaerobic threshold of muscle during endurance activity.

WHEN NOT TO TAPE

It is imperative to understand when not to use kinesiology tape. Tape's benefits can cause complications in some instances. There are five conditions in which tape would be considered contraindicated, which is where a thorough client medical history is essential. Those conditions are deep vein thrombosis, kidney problems and renal insufficiencies, active cancer, infection, and congestive heart failure. Avoid these five conditions with your tape and be thorough with your intakes.

TRY TAPE

Tape doesn't discriminate. The benefits of taping reach far beyond athletic settings. Whether your work environment is in a gym or pregnancy work, pediatric therapies, neuropathy issues or geriatric adjustments, taping can make a dramatic difference for both you and the clients you serve. ●

Stacey Thomas, LMT, is the owner of Altitude Aptitude in Evergreen, Colorado, a manual treatment and performance training clinic where she works with athletes of all levels in a multitude of sports, ranging from CrossFit to mountain biking. She is a certified personal trainer through the National Academy of Sports Medicine, a CrossFit Level 1 coach, and a licensed massage therapist, specializing in Active Release Technique. Stacey is a Performance Movement Taping Instructor for RockTape Kinesiology Tape.

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KINESIOLOGY TAPING FOR PREGNANT CLIENTS

BY ETHAN M. KREISWIRTH, PhD and STEVEN CAPOBIANCO, D.C.

As the body changes size and structure, bones and tissue absorb new lengths and positions. As these changes occur, so do compensatory movement patterns, which may cause pain and discomfort.

As pregnant women incur pain and discomfort from their newly found tissue lengths and postural strain, proper taping procedures can alleviate these potential culprits of disability.

Painful segments, such as the inguinal region, lower back, cervicothoracic junction and pubic symphysis can all be addressed with changes in body cueing and positional related issues via kinesiology tape.

These taping treatments may result in a positive client outcome on associated pain syndromes.

INCREASE MOVEMENT CAPACITY

Later stages of pregnancy seem to create a more sedentary lifestyle. With kinesiology tape applications, it is the goal to establish a more preferred static body posture, thus creating a less painful body position. These changes may increase the body's movement capacity and encourage better movement patterns and a more active lifestyle.

Adding kinesiology tape as an adjunct treatment after an adjustment can assist in support and positional cueing of the skin.

Adding kinesiology tape as an adjunct treatment after an adjustment can assist in support and positional cueing of the skin. We now know that taping a muscle with kinesiology tape is a bit far-fetched.

When applying tape on skin, the first barrier and organ stimulated is the skin. Tape

on skin can tap into the body's neurosensory output. Once tape is applied, the skin will recognize it and make changes to the neurological system.

These changes will assist in down- or up-regulation of its fascial tone based on the tape's position.

There is limited research to suggest why pain occurs with some pregnant women. According to an article in *BMC Pregnancy and Childbirth*, low-back pain in pregnant women accounts for nearly half, with 25 percent of them having serious pain and disability.

Pregnancy-related pelvic girdle pain ranges from 4 percent to 76.4 percent, depending on the definition used, according to "Pregnancy-related pelvic girdle pain: an update," published in 2011 in *BMC Medicine*. As we let research guide our clinical decision-making, we also should take into account how our client is feeling, both mentally and physically.

Although most of us can assume pain is from increased weight gain, balance (proprioceptive changes) and movement compensation, it is important to understand how to treat for these changes.

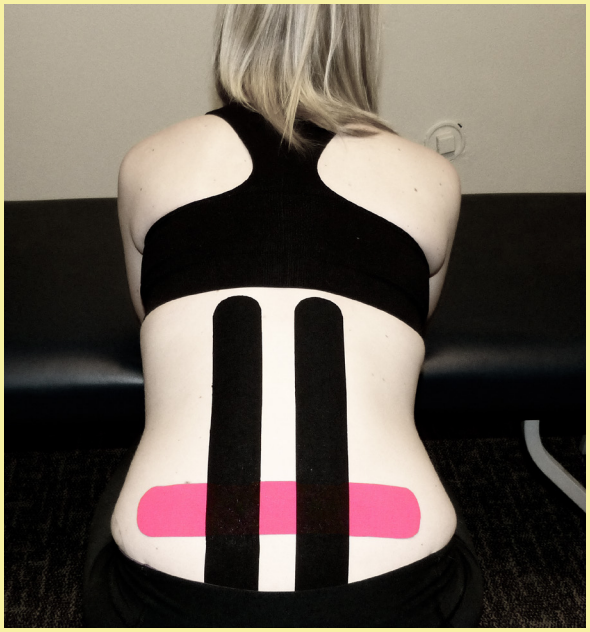
Providing support for your client via tape, increasing its neurosensory cueing and ability to freely move without compressive garments may lead to a more active, healthier lifestyle of late-stage pregnancy.

A LOSS FOR ANSWERS

Anecdotally, pregnant women have frequently been at a loss when looking for answers in respect to suggested pain associated with their growing abdomens.

Typical recommendations are multiple. Suggestions may include strapping, bracing, compressive garments and ergonomic pillows, although client compliance may be low due to comfort and cost issues.

Some healthcare practitioners have attempted taping methods similar to what we see on our athletic population, using traditional, rigid athletic tape.



Low-back pain in pregnant women accounts for nearly half, with 25 percent of them having serious pain and disability.

Unfortunately, the non-elastic qualities of rigid tape often result in skin irritation. In addition, taping with conventional athletic tape typically will only last a day at best, which does not result in mitigation of pain and symptomatology.

It is clear that this population is desperately seeking a comfortable, cost-effective, skin-sparing, postural-correction system that will provide pain relief for multiple days and nights.

BENEFITS OF KINESIOLOGY TAPING

Using the concept of taping movement, not muscles, kinesiology tape is applied not to individual muscle groups, but instead along fascial vector lines where force transmission occurs across the body to aid in a variety of aches and pains associated with pregnancy.

Proper taping methods may alleviate neck postural stress, lower back pain, sacroiliac pain and possibly, most importantly,

the pain that results from the additional weight and postural shift that occur with pregnancy.

Within the past decade, the fascial system has been revisited by such experts as Thomas Myers; Luigi Stecco, P.T., and Carla Stecco, M.D.; Robert Schleip, Ph.D.; and Gil Hedley, Ph.D. Schleip, a German fascial researcher and Rolfing practitioner, coined the phrase, "fascia is the Cinderella tissue of the body."

In other words, fascia has long been ignored—yet it acts on every part of the body, acting as a body stocking that is now well-known to be highly innervated and vascularized.

Schleip, along with his colleagues, systematically dissected out tissue in an attempt to expose underlying muscle-and-organ tissue; and in doing so, developed generations of tissue-specific practitioners and techniques.

This "Cinderella tissue" is now well-established as an important three-dimensional structure that aids in activation and support of the skeletal system, in addition to whole-body movement.

By taping these fascial continuities, it became apparent that a greater effect was experienced, potentially by improving communication, proprioceptively along these kinetic chains. But the question still remains: How can tape on skin affect the fascial system?

Hedley, a renowned fascial anatomist, stated, "The skin is the skin of the superficial fascial layer." When you distort one, others are affected as well.

With respect to taping, these fascial innovators are stating that stimulation of the skin enhances fascial proprioception. The fascial system encompasses all, from skin to core, hooking tissues together through what the fascial community likes to call the neuromyofascial web.

BODY OF EVIDENCE

A growing body of evidence has shown that the fascial system is 10 times more proprioceptive-rich in sensory function, providing the brain with augmented mechano-regulation (kinesthetic awareness).

By taping these fascial continuities, it became apparent that a greater effect was experienced, potentially by improving communication, proprioceptively along these kinetic chains.

If this is true, kinesiology tape applied to the skin can create a shearing effect to the underlying subdermal/superficial fascia layer, resulting in a stimulatory effect on a greater amount of sensory receptors that enhance body kinesthesia and, in turn, improve body postural positioning.

Kinesiology tape as an adjunct treatment can be an effective method for pain mitigation and increasing postural awareness without the compressive effects of other garments.

We conclude that enhancing postural strain along myofascial lines via tape will ultimately create a better position and increase movement capacity for a healthier lifestyle in pregnancy. ●

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Steven Capobianco, DC, DACRB, CCSP, runs a private sports practice in Denver, Colorado. He is a self-described "fascial geek," and adopted the model in the Functional Movement Techniques of Taping that he has developed along with RockTape Inc.

The Pregnancy Method introduced by RockTape Inc. provides easily worn, long-lasting, custom support pregnant women need.

GAIT ASSESSMENT AND KINESIOLOGY TAPE CAN HELP YOUR GERIATRIC PATIENTS

BY COURTNEY CONLEY, DC

How many times in your clinical practice do you hear from your patients, "I have been diagnosed with severe knee degeneration, and I have been told to limit certain activities"?

For some, this occurs way too often. When your patients hear this, what do you think it does to their perception of movement? What if they have fallen in the past? Disempowered patients are a big problem, and a defeatist mentality can further impair their outcomes.

It is your job as a clinician to restore movement and return patients to their desired lifestyles while reducing the likelihood of further impairment. There

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are many tools to assist you in this endeavor but, to put it most simply, clarifying their perception and eliminating uncertainty or fear of movement is usually the first step.

A good way of doing this is to incorporate gait assessment with kinesiology taping.

BALANCE AND PAIN

In assessing the gait of your elderly populations, be aware of several factors. First is balance. The majority of patients have been walking around in shoes that have not only compressed the foot but also reduced the ability to stimulate the thousands of sensory receptors located there.

Most can't feel the ground, and if they cannot feel the ground, they cannot properly organize their movement.

In addition, their feet have likely become weak, providing an unstable platform; this affects balance as well. As patients experienced fatigue more quickly, their risk of falling also increases.

The second factor to consider is pain. You know that nociception (i.e., the chemical signals the body can interpret as pain) affects motor output. If patients are in pain, their bodies continually move around the pain to continue interacting with the environment—this is how movement compensations progress.

For example, if you have heel pain, you might adopt a more forefoot strike with your gait. You might load the opposite limb to decrease pressure on that heel, or you might come up with a different strategy to continue moving and avoid pain.

Many faulty motor engrams are established to "protect" a person from their pain—all of which are dependent on their past medical history, environment or development. While in the interim these behaviors can change one's perception of pain, in the end it can result in chronic deficits in mechanics, potentially leading to an array of other medical problems or conditions.

Finally, assess your patients' confidence. Are they moving with assurance? How can you reduce their fear of moving and improve their proprioception—their body awareness—so they can walk better and improve their quality of living?

If you've ever been lost, or tried to walk in a room with the lights off, you know how nerve-racking that can be. Your movements become cautious and guarded and you lose the predictability of your surroundings, which in turn can be alarming.

To improve proprioception, the use of kinesiology tape can assist the mental "mapping" of movement by not only stimulating fascial receptors but also providing

The majority of patients have been walking around in shoes that have not only compressed the foot but also reduced the ability to stimulate the thousands of sensory receptors located there.

mechanical lift and shear on superficial layers of skin (via decompression or the lifting effect created by the tape).

By increasing spatial awareness—especially within a structure like the foot—you can tap into the sensory role that this limb plays for the rest of the body; thus, patients who are more in tune with their feet become better in tune with their environment.

WHAT THE RESEARCH REVEALS

In addition to restoring balance, kinesiology tape has been shown to provide resistance to fatigue. A 2017 study was conducted to determine whether taping the knees and quads can reduce balance deterioration after a fatigue protocol of 30 minutes of downhill walking to induce fatigue. The results of this study suggested that "the use of kinesiology tape mitigated the exercise-related deterioration of balance observed when no tape was used," meaning better performance and subjective confidence with movement.[1]

Additional research also supports the use of kinesiology taping for improving spatial awareness in populations with sensory ataxia. These subjects were more accurately able to "reproduce" limb angles when tape was applied as compared to controls without the additional benefit of kinesiology taping.

Another study demonstrated the importance of foot intrinsic strength and overall muscle performance of the gluteus maximus and the gluteus medius.[2]

The takeaway is that the foot is important for all populations—not just the elderly—and mechanisms that can increase perception and body awareness can go a long way toward improving not only patient outcomes but also the overall life experience of your patients. ●

Courtney Conley, DC, graduated from the National University of Health Sciences in 2003. She also holds a BS in kinesiology and exercise science from the University of Maryland. Conley currently owns and operates Total Health Solutions in Golden, Colorado, where her team of skilled professionals treat patients ranging from the weekend warrior to the ultra-distance athlete. She can be contacted through RockTape.com.

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LEARN THE CAUSES AND CURES FOR PLANTAR FASCIITIS

BY JONATHAN MULHOLLAND, DC

Nothing hampers a person's ability to move more than foot pain. You can sometimes work around hip issues or lower back symptoms, but foot pain tends to negatively affect almost every aspect of your life.

The human foot is a stubborn part of the body. It can withstand a tremendous amount of stress and abuse. But this stubbornness can also make it a challenging area to treat.

The human foot is a stubborn part of the body. It can withstand a tremendous amount of stress and abuse. But this stubbornness can also make it a challenging area to treat.

One of the most common foot injuries is plantar fasciitis. The plantar fascia is a thin, but extremely strong band, of connective tissue that runs along the bottom of the foot. It attaches at the bottom of the heel, and runs toward the toes, eventually continued>>

attaching under the ball of the foot. Its main purpose is to provide support to the foot's arch. If overworked, however, it can become inflamed and irritated like any other part of the body.

SYMPTOMS AND ETIOLOGY

The typical symptoms include pain under the bottom of the heel that often shoots down the arch toward the toes. Waking barefoot can then often be extremely painful. Almost always, the patient experiences severe pain with the first few steps out of bed in the morning.

There are many potential reasons why people develop plantar fasciitis. One of the most common—and overlooked—causes is restricted dorsiflexion in the big toe or the ankle (or both). If you're not checking the range of motion in these joints, you may be missing the main cause of their plantar fascial pain.

One of the most common—and overlooked—causes is restricted dorsiflexion in the big toe or the ankle (or both). If you're not checking the range of motion in these joints, you may be missing the main cause of their plantar fascial pain.

The foot is designed to be stable. If you don't have the normal amount of big toe and ankle dorsiflexion during the push-off phase of gait, your mid-foot will be forced to move excessively to make up for the toe and ankle restriction. This leads to increased stress on the fascia and other soft tissues in the feet, eventually leading to pain and dysfunction.

STEPS TOWARD TREATMENT

So what is the fix? You'll likely find that this issue responds best to a combination of different treatments and lifestyle modifications.

1. You must evaluate, and treat (if limited), the dorsiflexion of the big toe and the ankle. Most range-of-motion (ROM) limitations are due to a combination of joint restriction and soft-tissue tightness. You need to look at both of them. As a chiropractor, you should all have several options for addressing reduced joint motion at the first toe and the ankle.

Put the ball on the floor, step on it with the bad foot, and slowly roll your foot up and down the ball.

You could utilize High-Velocity Low-Amplitude (HVLA) manipulation, or something less aggressive such as Mulligan's "Mobilizations with Movement." In addition to treating the joint mobility, you should also treat the soft-tissue restrictions in the region. Some might prefer a combination of manual myofascial work and some instrument-assisted soft tissue massage (to the bottom of the foot and the calf).

2. **After improving their ROM in the toe and ankle, lock-in the improvement with kinesiology tape. The benefits of the tape are wide-ranging, and can help with some of the discomfort, provide some support to the mid-foot, and improve proprioception.**
3. **Next, demonstrate how your patient can use a hard ball to perform self-massage to the bottom of their foot. Put the ball on the floor, step on it with the bad foot, and slowly roll your foot up and down the ball. Search for the most painful spots and spend the most time in those areas. Recommend that they use a foam roller to do the same type of massage on their calves. This should be done a few times a day if possible.**
4. **To address the sharp pain in the morning, your patient needs to purchase something called a "Strassburg Sock." It's a sock they wear while sleeping that keeps their toes pulled back toward their shin. This keeps the plantar fascia stretched throughout the night and can greatly reduce the pain in the morning. It can be a bit weird to get used to, but most people get a noticeable reduction in their morning foot pain in five to ten days.**
5. **Lastly, stress the importance of applying heat to the bottom of the foot as often as possible. Traditionally, the standard recommendation was to use ice. Recent research, however, has called that practice into question. It appears that connective tissue injuries seem to respond best to heat.**

Again, plantar fascial pain can be a stubborn condition to treat. Do understand that the above list of treatment options is not comprehensive. However, it is a combination of low-tech, inexpensive, and effective treatments that have worked well for me over the past fifteen years. Give this combination a try and see if they work for you. ●

Jon Mulholland, DC, is a sports chiropractor and strength coach at Ideal Athlete Chiropractic in Plattsburgh, NY. He has worked multiple Olympic and world championship events, and has treated athletes from dozens of different countries. He also travels extensively lecturing on a wide variety of sports injury and rehabilitation topics. He can be contacted through TheIdealAthlete.com or RockTape.com.

KNOW HOW TO APPROACH PAIN WITH YOUR PATIENTS

BY JOE LAVACCA PT, DPT, OCS

There are two things that connect all health care professional: First, all are in their respective professions to help improve patients' quality of life through the alleviation and mitigation of pain. The second is that the skin is the entry point in doing so; this is how the story comes together.

Pain is a billion-dollar market, and it's snowballing into an even bigger problem. A quick Google search of the word "pain" yields over 900 million results. Click on Merriam-Webster's definition of pain and you will see words like "suffering," "punishment" and "disorder." Reflect on how we ask people about pain: Does it burn, sting, ache, shoot, or stab? Is it sharp, spreading, or constant?

Pain can most definitely be a scary thing, not only for patients but for health care professionals alike. You know through pain science and from leading researchers in the field that not only may you be able to alter the perception of pain—you can also be successful at treating it differently as well.

THE VALUE OF PAIN

Most people classify pain into two categories: acute and chronic. Acute pain is good. It serves to protect the body and change a behavior; it's important for survival. There is usually an issue in the tissue, and if you wish to alleviate it, you must act accordingly. However, what is the value of chronic pain? Is there value at all? We know that active healing is no longer occurring in most such cases—there is nothing to avoid per se, so why are

patients spending millions of dollars to treat chronic symptoms with oftentimes less-than-average results?

Most practitioners in the physical therapy world do not have a proper understanding of pain, nor can they effectively communicate this to their patients. This typically results in a fear-based model, stressing avoidance tactics, and oftentimes incentivizing patients to seek alternative medicines, second opinions, and in some cases surgery, injections or pills. Therefore, instead of thinking of chronic pain as something that is happening in the tissue, we should be looking at the central nervous system—the changes in the brain and sensitization of peripheral nerves.

Pain does not correlate with tissue damage. A patient doesn't require nociception to experience it, and cannot simply think it away, despite it being a conscious subjective experience.

A PERSISTING PROBLEM

What we know about pain is that it is an output, not an input. Pain does not correlate with tissue damage. A patient doesn't require nociception to experience it, and cannot simply think it away, despite it being a conscious subjective experience. Chronic pain is usually the result of sensitized nociceptors. These nerve endings become easily excitable thus contributing to the persistence of pain that patients feel.

Old-fashioned explanations for chronic pain, through lifestyle, demographics and co-morbidities have not established a correlation to a pathway. As new research looks to changes in the brain, we can see distinct adaptations compared to healthy controls—mainly in the cortico-limbic and somatosensory cortex regions, which result in increased emotional processing to stimuli.

Research has established that pain travels via two pathways: A-fibers and C-fibers. A-fibers are rapid, discriminatory receptors that allow for reflexive responses and the body to localize incoming (threatening) stimuli. C-fibers are slower and typically result in the longer, unpleasant ache felt after an initial stimulus produces an affective signal. In other words, A-fibers let you know you've stepped on a pin, and C-fibers enable the achy, steady reminder that stepping on a pin is bad.

REMAPPING THE RESPONSE

Since typical modes of treatment are often unsuccessful in alleviating chronic pain, where is the practitioner to go? New evidence shows that if you use the power of affective touch, educate patients on pain, and gradually expose them to fearful stimuli, you may be able to "remap" their brains and empower them to once again enjoy a pain-free life.

Pain education allows patients to understand that pain is normal and better sense when it's better to "push" versus "rest." Complimenting this information with coping strategies such as breathing, meditation and visualization equips a patient with initial steps to "rewire" their brains.

Pain education allows patients to understand that pain is normal and better sense when it's better to "Tollspush" versus "rest.".

What's more, fMRI imaging has shown that the brain demonstrates similar activity among subjects who moved, and subjects who thought about moving. So if you are fearful of bending, lifting or running, just imagining yourself undertaking those tasks may be a good entry point to movement retraining with clients to de-threaten their central nervous systems and prime them for more advanced motor control drills.

Light touch by way of instrument assisted soft tissue mobilization to stimulate C-fibers, or kinesiology taping to provide non-noxious stimulus and neurosensory cueing can create windows of opportunity to help patients move farther and with higher levels of perceived safety. We no longer need to think about "releasing" tissue, or "breaking" scar tissue; we should be focusing on peripheral nerves and the sympathetic and parasympathetic nervous systems. Coupling these treatments with graded exposure training has proven to be quite effective in the rehabilitative process.

Chronic pain can be bothersome, but it need not be debilitating if a proper approach and understanding exists between the practitioner and patient. ●

Joe Lavacca, PT, DPT, OCS, is an experienced outpatient orthopedic clinician. He has obtained certification in movement screens for both the FMS and SFMA, Functional Strength Coaching, as well as Fascial Movement Taping and Performance Movement Techniques through RockTape. He stays current in the most up-to-date evidence-based research, which allows him to give individualized care to each of his patients. He can be contacted through RockTape.com.

AS MANUAL THERAPISTS, OUR EFFECTIVENESS HAS DECREASED

BY STEVEN CAPOBIANCO, DC

Let me start this article with a simple question to all my colleagues out there.

How successful do you think we are, collectively, as manual therapists? It may surprise you that if you looked at the research, manual therapy almost always washes out as being 'ineffective.'

This study paints a similar picture—in fact our effectiveness has decreased in the past 25 years when it comes to low-back and neck pain.[1]

It's apparent that a change is necessary. We need to adjust our approaches, and I believe we can utilize new tools and methodologies to do so.

Over the past 15 to 20 years, many practitioners have successfully adopted Instrument Assisted Techniques (Graston, Hawk Grips, Edge Tools, etc.) to their treatment protocols. These tools come in all sizes and shapes and are typically supplemented with concurrent technical course content.

Now let me be clear, I am not suggesting that the answer to your effectiveness woes lies in the utilization of instruments. But I do believe, strongly, that some key advancement in tools along with science-based education can set the stage for better success.

RockTape Inc. has rocked the boat in respect to the tools you use and the knowledge you acquire as therapists.

RockTape Inc., has evolved from a simple tape company to what they like to call a movement company. Within this framework they have rocked (pun intended) the boat in respect to the tools you use and the

Let's talk about the newest tool in their arsenal, the Mohawk, and how it's challenging the way you may have thought about Instrument Assisted Soft Tissue Mobilization (IASTM) intervention.

knowledge you acquire as therapists.

Before we talk about the education platform, let's talk about the newest tool in their arsenal, the Mohawk, and how it's challenging the way you may have thought about Instrument Assisted Soft Tissue Mobilization (IASTM) intervention.

To start, I have a question that some of you might have had also. Why are IASTM tools always a simple plastic or stainless device? Why shouldn't you have a more diverse set of tools in our arsenal? RockTape shook up IASTM again.

They started with a uniquely shaped stainless steel tool that complemented their original RockBlades in size, weight and shape.

THE "SWISS ARMY" IASTM TOOL

It was created via the input of thousands of RockTape medical professionals worldwide. RockTape prides itself on the ability to listen to their following and make the necessary changes when needed. As for the tool's construction, they didn't stop there. With simple attachments, similar to an iPhone case, the original steel tool can become so much more.

The plastic "comb" attachment creates a novel stimulus to light touch receptors in the skin, hair, and fascia that have been shown to create anti-nociceptive sensations that aid in pain modulation both peripherally and centrally.

Additionally, the silicone sleeve attachment provides optimal tissue grab—creating shearing forces of the skin, fascia, and underlying entrapped nerves. All of a sudden, one tool becomes three. A true paradigm shift in IASTM tool development. Now you can create multiple attachments to facilitate multiple different outcomes for your patients. Different strokes for different folks.

Next we need to discuss the education attached to the tool. Classically, IASTM models of approach revolve around how we "manipulate" tissues. I say "manipulate" in quotes because there is plenty of evidence that refutes the idea you can mechanically distort

In our Blades education platform, we focus on how you can mitigate pain, up-regulate and down-regulate tissue tone, and lastly how to improve interlayer gliding (skin, fascia, nerves).

tissues, including breaking adhesions and scar tissue.

If the science is debunking this notion, why are DCs still using these tools in this manner?

This antiquated thinking leads to overtreatment that results in poor outcomes, such as bruising and more pain. What we are attempting to do with the launch of our FMT Blades and Blades Advanced education is to introduce a new model of approach.

This approach revolves around how you manipulate the nervous system rather than the tissues, understanding that the central nervous system is what controls the outputs that you may observe after manual therapy treatment interventions.

FUNCTIONAL MOVEMENT TECHNIQUES

In our Blades education platform, we focus on how you can mitigate pain, up-regulate and down-regulate tissue tone, and lastly how to improve interlayer gliding (skin, fascia, nerves). We spend time on how to best apply the appropriate stimulus to the intervening tissue (most cases in the skin and accompanying hair follicles) to realize the optimal output.

We seldom hear the grunts and groans associated with typical IASTM treatments, nor do we mash and bash tissues to create what some like to call the "therapeutic bruising effect." If this mode of treatment was effective, why isn't ITB syndrome, low-back pain, and other musculoskeletal syndromes eradicated?

Our experience shows that a minimally effective dose creates the necessary response. It takes some getting used to, but generally most attendees leave our education with a different set of tools, both in their hands and in their minds to be able to collaborate with the patient's nervous system to create the long-standing changes you are looking for. ●

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Steven Capobianco, DC, DACRB, runs a private sports practice in Denver, Colorado. He is a self-described "fascial geek," and adopted the model in the Functional Movement Techniques of Taping that he has developed along with RockTape Inc.

4 FASCIA RESTRICTIONS CONQUERED BY IASTM

BY CHRISTINA DEBUSK

Adding IASTM to your practice can greatly benefit your patients.

Instrument Assisted Soft Tissue Mobilization (IASTM) is a particular treatment method that is performed with ergonomically designed instruments that detect and treat fascial restrictions, encourage localization and effectively treat areas exhibiting soft tissue fibrosis, chronic inflammation, or degeneration.[1]

But what types of conditions fit these criteria, thereby benefiting from this particular treatment method?

1. PAIN ASSOCIATED WITH TEXT NECK

Research conducted by Kenneth K. Hansraj, MD and chief of spine surgery at New York Spine Surgery and Rehabilitation Medicine, discovered that tilting your head forward just 15 degrees places 27 pounds of pressure on your spine.[2] Tilting your head that much is fairly common when it comes to looking down at your smartphone and other electronic devices. Increase the tilt to 60 degrees and the pressure grows to an amazing 60 pounds.

This can create all sorts of issues for the human body, one of which is "text neck." Text neck is pain and damage to the cervical area that is associated with continuously tilting your head forward and down in order to catch up on emails, check social media accounts, and play online games.

IASTM can help with text neck by alleviating soft tissue restrictions in the back of the head, neck, and upper shoulder area.[3]

2. PLANTAR FASCIITIS

The American Academy of Orthopaedic Surgeons reports that plantar fasciitis is the most common cause of pain on the bottom of the heel.[4] It's so common, in fact, that around 2 million patients are seen for this condition annually.

In one case study involving a 10-year-old football player with plantar fasciitis, it was found that chiropractic mixed with soft tissue therapy and home exercises not only helped alleviate the sometimes intense pain it can create, but it actually took it away entirely.[5]

And it was still gone three months later, making IASTM a great option for helping patients with planter fasciitis and other foot related pain.

3. SHOULDER INJURIES

If you engage in sports chiropractic, it's not uncommon to see athletes with some type of shoulder injury. This is especially true if you're working with team members associated with baseball, football, basketball, or any other sport which requires that a ball or some other object be thrown to another player.

According to a 2014 study involving 35 baseball players, published in the *International Journal of Sports Physical Therapy,* injuries to this area of the body can benefit from IASTM by helping improve range of motion (ROM).[6]

In this case, players showed improvement in both glenohumeral horizontal adduction and internal rotation ROM.

4. RUNNING-RELATED SORENESS

Paul Fisher with Discover Chiropractic in Fremont, California, shares that IASTM can also provide relief for runners suffering from sore feet due to hitting the pavement or trails on a regular basis.

He goes on to say that this particular treatment method "could and should help with shin splints" as well.

Shin splints affect approximately 10 percent of male runners and almost 17 percent of female runners, making this an issue for a high number of people who use running to get or stay in shape.[7]

Thus, offering IASTM as a form of treatment can help patients hit their fitness goals without being sidelined by pain.

IASTM can help ease or entirely eliminate a number of different conditions and these are just a few. By incorporating this type of therapy into your practice, you are greatly benefiting your patients and going beyond what just an adjustment may offer. ●

Christina DeBusk is a freelance writer who specializes in health and wellness and business marketing. She currently writes for ChiroNexus as well as other health-related publications. She can be contacted through christinamdebusk.com.

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THE SCIENCE OF 'FLOSSING': MEET THIS MOBILITY TOOL FOR IMPROVING JOINT MOVEMENT

BY BENJAMIN STEVENS, DC

To tell chiropractors that they should floss, on first inspection, might seem as self-evident as telling them to get adjusted. Most of them are heavily into the game of self-preservation and prefer to practice what they preach. However, you may not be asking your patients to floss. I know I certainly am not doing so in my practice—I am flossing for them.

ROOTS IN CROSSFIT

Approximately five years ago, in the surge of CrossFit's exponential growth of popularity, a new form of self-care appeared on the healthcare landscape. Gyms around the world saw a rise in people partially wrapping their limbs with tight rubber compression bands, calling it "flossing." Enthusiasts attributed this new tool to a famous physical therapist. What started in a small corner of the fitness realm has since gained wide popularity among self-hackers, clinicians and fitness gurus worldwide. In fact, a quick search on YouTube reveals nearly 10,000 videos about the topic.

As a clinician, it's your job to guide your patients in a wide array of health endeavors. What do you need to know about the increasing use of compression bands? Where do you begin if we want to "floss" patients yourself? It will be helpful to review some of the uses of compression bands, commonly referred as "floss."

MECHANISM OF ACTION

First, floss is a mobility tool for immediately improving joint movement, reducing soft-tissue stiffness, and allowing athletes to access their available range of motion more easily. This mobility is primarily facilitated through alterations in blood flow parameters as well as relative tissue glide. In every CrossFit gym across the country, as well as in most strength and conditioning facilities, floss is becoming as much a part of the warmup as stretching and foam rollers have traditionally been.

Floss is also commonly used to access new ranges of motion for sticky peripheral joints. For instance, a common problem in Olympic weightlifting, CrossFit, and general resistance training is an inability to achieve the "front rack" position, whereby each upper limb needs to achieve the range of motion required to touch the thumb knuckle to the anterolateral deltoid of the ipsilateral shoulder, with the elbows pointing forward at approximately chin height.

When this range of motion is not accessible by the participant, floss is often the solution to enhance flexion of the elbow, pronation or extension of the wrist, and flexion and external rotation of the glenohumeral joint. Once these joints all achieve their full expression of end-range of motion in these directions, the goal of a properly executed front-rack position can be achieved and full-capacity training can be undertaken in these ranges.

In one study looking at elbow range of motion in tennis players, all subjects who demonstrated normal elbow ROM showed no improvement from the use of floss. However, the participants who did show an abnormality in the range of motion of the elbow experienced large improvements in their ROM following the use of floss with mobilizations.[1] It takes minimal persuasion to

In every CrossFit gym across the country, floss is becoming as much a part of the warmup as stretching and foam rollers have traditionally been.

convince chiropractors that improved range of motion through the peripherals joints is not only desirable for many conditions which they treat, but can lead to safer training environments for the spine.

In forward-thinking clinics, floss is commonly used as a rehab tool. Although it may not seem immediately evident why localized compression around the limbs of your clients might enhance their prognoses, the science is finally catching up to what the floss forerunners have been doing for years.

As with many of your interventions, the desire to turn your clients into super-humans is not usually supported by the evidence, but an intervention such as floss can have an extravagant effect on clients who have notable deficits in various objective and subjective parameters.[2] In a different study, investigating the effects of floss bands with joint mobilization stretching and strengthening exercises, those who used the floss experienced a larger increase in certain parameters of strength around the ankle.[3]

In yet another intervention-based study, participants who used floss around the ankle saw improvements in weight-bearing lunge performance, ankle ROM (both dorsiflexion and plantarflexion), as well as single leg jump performance.[4]

VARIATIONS ON A THEME

Finally, floss can be multi-purposed, depending on the desired outcome and parameters of flossing. As the research develops in this field, experts are pulling information from many closely related disciplines to develop specific parameters for application of the bands.

The intensity of stretch on the bands, the amount of time they are applied, activities to perform while they are on, and the subjective experience of the client are all currently being extracted from research and professional opinion from the study of blood flow restriction (BFR), strength and conditioning, and pain modulation.

Learning new techniques with new tools

The science is finally catching up to what the floss forerunners have been doing for years.

to add to your practice can sometimes be challenging, complex, and even cost prohibitive. In contrast, the relatively inexpensive and simple approach afforded by rubber compression bands can be quickly and easily integrated into most practice styles for the treatment of various extremity complaints and findings. ●

Benjamin J. Stevens, DC, is a sports chiropractor in British Columbia, Canada, where he serves an active population of primarily strength- and power-oriented athletes. He has started two multidisciplinary clinics and co-owns a continuing education business, Somatic Senses Education. He writes and teaches in his spare time, as well as lecturing for RockTape. He can be contacted at drbenstevens@somaticsenses.com or through benjaminjstevens.com.

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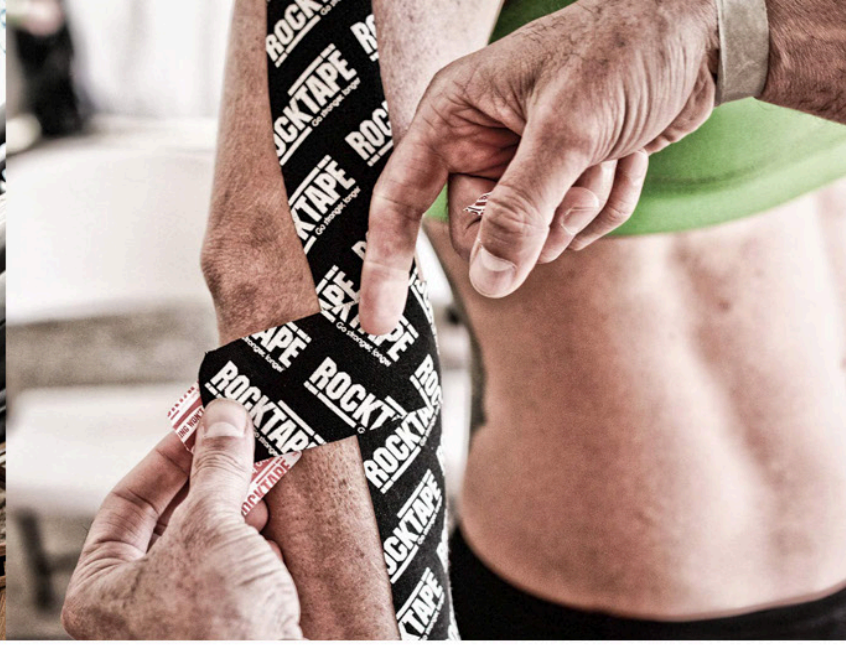

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