Dynamic Chiropractic

Advanced Neuromuscular Medicine for Soft-Tissue Conditions and Athletic Enhancement

Kevin Hooper, DC, graduated from Canadian Memorial Chiropractic College (CMCC) in 1989, and received his sports chiropractic fellowship from the College of Chiropractic Sports Sciences through CMCC in 1994. A former nationally ranked track athlete (1,500 meters), Dr. Hooper still competes in running, duathlon and triathlon competitions in Canada.

I gradually became frustrated dealing with sports injuries in traditional, mechanically based ways. Sometimes, wonderful results would arise, but they often required more time than the athlete was able to give. More often than not, the results athletes were searching for were not fast or optimal enough to keep up with their rigorous training or performance schedules. The results I was getting allowed many of them to achieve a high performance level, but they also often paid the price from not being fully healed.

I noticed an advertisement in a chiropractic journal promoting "trigenics," and attended a workshop, during which I was treated for a chronic hamstring injury that had disabled me from running. I had already tried a number of different manipulative and myofascial release therapies without success, so I was doubtful anything could help. I had been off my game for a number of months; following the treatment, I was back to running the next day, with no negative repercussions.

After watching this form of advanced neuromuscular medicine work on some of the other health professionals at the workshop, and experiencing it myself, I became convinced this was a science-based methodology for injury treatment and performance enhancement. Accurate assessment and treatment protocols, focusing on neurological rather than biomechanical methodology, and objective pre- and post-muscle-strength and range-of-motion testing following treatment, enables patients to realize the magnitude of their conditions, and how much improvement can be attained in just one treatment.

This synergistic methodology combines manual procedures designed to rapidly accelerate healing and augment muscle function, and has been systematized into a comprehensive and precise assessment and treatment technique with three elements:

1. Neurogenics is the use of incrementally resisted movement to elicit a neuromyogenic response via facilitation and augmentation of neuromuscular reflexes. Treatment already employs optimizing a part of the myotatic reflex, which engages reciprocal innervation, and also conversely utilizes the inverse myotatic reflex. The outcome of applied neurogenics is a change in the "gamma bias" or resting tonicity of the muscle. (The neuromyology behind these two particular techniques is complex and beyond the scope of this article.)
2. Myogenics is the second aspect of treatment; along with neurological reflexes, it employs a soft-tissue procedure, proprioceptive neurodynamic myotraction (PNM), which directly addresses the muscles and related soft tissues in a responsive patient/therapist interface involving dynamic, manual-contact, traction-pressure. Accurate application of PNM during

engagement of local neuromuscular reflexes (and neurocerebral pathways) allows for much greater penetration and results than would otherwise be possible with the more traditional, mechanically based manual techniques. PNM also can be applied point-specific to acupuncture meridian points for greater meridian stimulation than would otherwise be possible with traditional manual Eastern medicine techniques.
3. Autogenics is the use of specific concentrative respiratory and autosuggestive techniques; it enhances the interaction of neurogenics and myogenics.

So, where does "synergy" fit in? Utilizing the three abovementioned elements at once causes a cumulative bombardment of reflexogenic neurological impulses that dramatically reduce or alleviate muscle hypertonicity, spasm, inflammation and pain, while augmenting contractile force. In skilled hands, it is much more effective than one would expect from simply summing the three techniques. (Recently, it has been hypothesized from clinical evidence that repetitious treatment imposes a new type of load to a muscle, with cumulative hypertropic effects causing it to grow in size and power, independent of other forms of exercise. Research is currently being conducted to validate this hypothesis.)

Researcher Norman Allan DC, PhD, makes a number of interesting observations regarding this concept:

"The importance of having developed an augmentative advanced therapy for muscle pain and other musculoskeletal dysfunctions becomes particularly apparent in the context of a 'hot news item' that was circulating in the spring of 2001 when television and newspapers enthusiastically reported a research claim that injecting 'botox,' or botulin toxin (which paralyses the neuromuscular junctions) into spasmed low back muscles. The research findings reported that the botox injections alleviated low back pain in over 60% of chronic low back pain sufferers. This finding is to claim and indicates, that if one can reduce or alleviate the muscle spasm, one will reduce or alleviate the pain."

Essentially, this treatment affords a neurologically based, dramatically effective, noninvasive method of nearly instantaneous reduction or alleviation of muscle spasm (and therefore, pain). It also has been found to increase muscle strength or length significantly and rapidly, and appears to have an immediate anti-inflammatory effect.

With respect to the methodology of treatment of athletes, I defer to Dr. John De Finney, who wrote the following with regard to trigenics:

"[This treatment] ... neurogenically unloads (relaxes) muscles and strengthens or lengthens them by resetting their gamma bias to restore, optimize and augment their functional integrity. Effect of treatment is instantaneous, yet also cumulative with successive applications.

"With respect to the strength increase phenomenon, it is believed that with the muscle in many different successive positions or lengths during application of a ... procedure, additional cross bridge binding potentials are instantaneously created with an overall cumulative increase of vast muscle power. This unique immediate strengthening effect is seen to have tremendous potential in providing athletes with a drugless alternative to performance enhancement therapy.

"To increase overall performance levels, the [practitioner] will initially do 'balancing' of an athlete's muscles. Results of strength and length tests on the athlete's musculature are mapped out on a chart indicating which muscles need to be strengthened and/or lengthened. The athlete will thus be treated accordingly ... In addition, each sport requires specific muscle groups to be stronger or longer for optimal performance. In order to create this state, the [practitioner] then uses another

portion of the ... muscle-testing chart targeting specifically which muscles need to be additionally lengthened or strengthened to enhance performance for that particular sport. The athlete will then be treated accordingly to increase their performance with a coordinated combination of [trigenics] performance enhancement procedures."

In combining this type of treatment with chiropractic care, the practitioner will notice the need for chiropractic manipulation will be reduced dramatically following treatment, and when high-velocity adjustments are required, joint fixation release is also attained with much less effort. This is because trigenics also can be used as a manipulative technique, with restoration of intra-articular mobility achieved inherently. With the patient as an active participant in the treatment, joint movement is always elicited; as a result, intra-articular functionality is restored as the muscles traversing the joint are reset reflexogenically. (This beneficial effect also offers an alternative to spinal manipulation in osteoporotic or CVA-risk patients, or those who are hesitant to receive such care.)

The faster an athlete can be rehabilitated fully from an injury, the sooner he or she can resume training for and participation in competitive sports. In addition, any natural methodology that can increase performance and achievement abilities will help athletes be more competitive. These are two of the most crucial factors enabling an athlete to achieve personal and professional goals. This type of treatment is unique in its effectiveness for injury treatment and its ability to augment performance levels.

As a competitive runner myself, I work closely with many triathletes, and also receive requests to provide athletes at meets with methods for maintaining the results if they come from an area that does not yet have a registered practitioner. "Self-treatment" and neuromuscular exercises are employed in these cases. The following is the study of a triathlete with a chronic injury wherein practitioner treatment and self-care was applied:

Gluteus Medius Strain in a Competitive Triathlete: A Case Study

A 27-year-old male had competed in a sprint triathlon at the beginning of the racing season, and had struggled with a chronic right gluteus medius strain that prevented him from running distances longer than 10 km "easy" or 5 km at race pace. He had tried a multitude of therapies with only temporary, limited success. After completing the event, his injury had become severely irritated again and he had become quite frustrated. This is common in competitive athletes who perform with injuries that are not fully healed. The patient had visions of his racing season being over for the year.

His coach asked me to perform an on-site examination and trigenics treatment to provide the athlete with some relief prior to home care. I was limited to working with a small therapy table in a tent at the finish line of the triathlon. I observed during the initial examination that the athlete had a normal walking pattern that regressed to a limp with running even a short distance. The right gluteus medius, piriformis, TFL and psoas were hypertonic and extremely sensitive to touch. The right psoas was particularly short, eliciting a positive Thomas sign. Muscle testing revealed reduced muscular power (4 of 5) on the right gluteus medius and maximus, piriformis, TFL, adductor magnus, bilateral psoas, and lower and middle trapezius muscles. He overpronated, had *pes planus*, and bilateral functional *genu valgus*. The lower lumbar spine, bilateral SI joints and midthoracic spine showed multiple-site intervertebral dyskinesia.

Treatment consisted of strengthening and lengthening procedures to all of the aforementioned muscles (which were short and hypertonic, with particular attention given to the right psoas, piriformis and the erector spinae group bilaterally). Chiropractic adjustments were performed on

both sacroiliac joints. After 10 to 15 minutes, he noted a significant reduction in pain and observed that his pelvic region "felt very loose." Following this initial treatment, I performed "athlete enhancement treatments" specific to his sport, then gave him exercises and self-treatment maneuvers to perform at home on a daily basis. Three weeks later, I saw him at another triathlon, immediately following his race. He commented how incredibly good he had felt since treatment; that he felt he was running faster with less effort; and that his buttock pain was now minimal.

Three weeks later, I performed a full assessment of 10 high-performance triathletes, including this patient. The coach commented how he had expected another particular athlete to perform very well during the testing, due to his winter-long core strengthening program. Interestingly, following testing, the only triathlete who performed well was the one I had treated six weeks prior, who had also followed with a routine of self-care at home. Not only was he pain-free, he also had excellent strength and power on muscle testing. This leads one to conclude that many, if not most, athletes are probably performing with muscle imbalances and malfunctions that prevent them from performing at peak levels. This treatment can quickly assess, restore and improve muscular balance and functional neuromuscular integrity.

In conclusion, I have always found it extremely important to deal with the soft-tissue aspect of injuries, as they are intimately and symbiotically related to spinal articular and biomechanical function. The new knowledge I have gained through the scientific theory and practical components of trigenics, however, has opened a whole new avenue to treat musculoskeletal injuries and augment the performance of athletes. I now have the ability to provide unparalleled, dramatic relief and enhanced performance with long-lasting effects. The results can be compounded and maintained if treatment is combined with a home exercise and self-care program. All of this is achieved with little stress on the doctor and little discomfort to the patient.

The neurological model of this treatment takes injury and athletic care to a new level. Instigating the body's own inherent mechanisms for healing and increasing muscle function is the only drugless option for athletes seeking victory. Treatment this powerful is a potential breakthrough in restoring and enhancing neuromusculoskeletal function. The possibilities are vast and seemingly endless!

Resources

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