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INTEGRATIVE DRY NEEDLING:
Overcome Injury Compensations and Speed Recovery
John Fiore, PT

Integrative dry needling is a medical procedure which restores and normalizes soft tissue dysfunction. Integrated dry needling was developed by Yun-Tao Ma after nearly forty years of clinical research and research in the fields of pain and neuroscience. Integrated dry needling differs from conventional dry needling and acupuncture as it represents the third generation of dry needling. Integrated dry needling treatment, as taught by Dr. Ma, emphasizes both localized symptoms and systemic dysfunction. Integrated dry needling is ideal for athletes as it accelerates recovery from injury or overtraining, prevents common injuries by reducing inflammation, and enhances performance by stimulating the body’s own healing systems to increase homeostasis.

When a musculoskeletal injury occurs, soft tissue (muscle, connective tissue) restriction and tightness may predominate. If left untreated and symptoms persist, the nervous system (peripheral and central) accepts the repeated neural input from the injured area as “the new
normal.” Stasis predominates and the body’s healing energies may be channeled elsewhere. Integrative dry needling represents a new stimulus to the sensory nervous system. In response, the central nervous system (hypothalamus) responds by releasing the body’s self-healing properties to address the site of needling.

While dry needling is more effective in individuals in good overall systemic and physiologic health, it represents an excellent treatment for both acute and chronic injuries. I recently completed my advanced training in integrative dry needling under the instruction of Dr. Ma. Call for a consultation or to discuss whether integrative dry needling can help you achieve a pain free status to enjoy the recreation Montana has to offer.

-John Fiore, PT

**PREOPERATIVE PHYSICAL THERAPY**  
**Jesse Dupre, DPT**

Many people are familiar with the benefits of physical therapy after a surgical procedure, and may expect it as a part of their recovery plan. It has been demonstrated that physical therapy for postoperative rehabilitation can help to control pain, increase strength and range of motion, and improve physical function. In addition to postoperative treatment, preoperative exercise and physical therapy, often referred to as prehabilitation, can also be advantageous in a variety of cases.

Studies have shown that for those undergoing total knee or total hip replacements, preoperative lower extremity exercise can be helpful for improved strength, reduced pain and improvement in overall quality of life in the weeks directly following surgeries. Studies involving those undergoing ACL reconstruction showed that preoperative exercise programs are associated with improved motor function. In a study involving patients who would undergo lumbar fusions, it was found that those who participated in an 8-week prehabilitation program reached recovery milestones faster than those who did not.

The goals for preoperative rehabilitation are to increase strength, endurance, and function for patients undergoing surgery to help them recover as quickly as possible. This is usually accomplished through a combination of strengthening exercises to increase strength or prevent loss of strength in regions specific to the future surgery, and general conditioning to increase general strength and endurance. During an initial evaluation, a physical therapist can help to identify your specific needs for preoperative strengthening and conditioning, and create a program to address
conditioning programs

- Integrated Dry Needling
- Back and neck pain
- Running overuse injury and prevention
- Running biomechanical gait analysis
- Work related injuries
- Functional Capacity Evaluations
- Work Hardening & Functional Conditioning Programs
- Cycling injuries & biomechanical bike fitting
- Women’s health
- All insurance accepted & billed
- Cash payment discount

weaknesses or other areas that will be important for your recovery. Preoperative physical therapy can assist you in learning important exercises you will use following surgeries and include training in how to use equipment such as crutches, walkers or canes when necessary.

While preoperative physical therapy is not as commonly utilized as postoperative rehabilitation, it can be a useful addition to aid your surgical recovery process.

References:

RUNNING RELATED FOOT & LOWER LEG PAIN: Understanding Possible Causes for Effective Treatment

John Fiore, PT

The simplicity of running is one of the main draws for trail and road runners alike. All you need is a trail, a road, some free time, and a pair of shoes and the world is your backyard. Running becomes much less enjoyable, however, when foot and lower leg pain enters the equation. Our feet contact the ground up to 1,000 times per mile depending on your running or walking speed. The force of each foot contact moment is 1.5 to 3.0 times our body weight depending on your running style and technique. The math produces a staggering number of pounds of force transferred through each foot with every passing mile. A 150 pound runner may place up to 450,000 lbs. of force through their feet per mile. It is no wonder, therefore, that foot and lower leg pain is a common running related injury.

Plantar fasciitis, or pain in the bottom of the foot, is the most common form of running related foot pain. Many factors contribute to the incidence of plantar fasciitis, all of which influence the choice and effectiveness of treatment. While most of us will take time off from running or purchase a new pair of shoes to diminish the symptoms, effective and long-lasting treatment begins with understanding the cause. Medial tibial stress syndrome (AKA “shin splints”) involves inflammation of the tibialis posterior muscle along either the muscular attachment to the bone (tibia) or the tendon which travels to the bottom of the foot. The tibialis posterior muscle is necessary during the push-off phase of walking or running. Supination is driven in large part by the tibialis posterior. Pain in the plantar area of the tibialis posterior insertion on the foot may be incorrectly diagnosed as plantar fasciitis without a complete functional evaluation. Evaluating your running mechanics via video analysis, rest, a strength
assessment will uncover any underlying contributing factors to medial tibial stress symptoms. I utilize a taping technique which is very effective in relieving repetitive stress along the tibialis posterior muscle and tendon. Running through “shin splint” pain is a bad idea as bone inflammation may result which can lead to a stress fracture along the tibia.

Running is not reason enough to develop plantar fasciitis or medial tibial stress syndrome. Our feet are designed to run and historically speaking, humans have been running for thousands of years with minimal footwear. Our foot is ingeniously designed to absorb force associated with initial contact with the ground (pronation) followed by a recoil-type rebound which enables us to push off a stable foot (supination). The muscles, connective tissue, joint, and sensory dynamics associated with the simple act of running must work in cooperative balance to enable us to run mile after pain-free mile.

A thorough evaluation of a runner’s foot structure, gait, running technique, and accessory muscular strength (intrinsic foot, hip, quadriceps, hamstring, gastroc-soleus, tibialis posterior) often reveals asymmetry and/or a deficit on the involved (painful) side. Below are a few key components necessary for running with pain-free feet:

**Structure:**
Each foot contains twenty six bones, multiple joint surfaces between each bone, and has a structurally unique fore foot and rear foot. Much like our thumb is the strongest finger in our hand, the great toe (aka big toe or the toe with the black toe nail) is hands down the strongest toe in our foot. In addition to being a weight supporting, impact reducing, propulsive engineering feat, the foot has an amazing sensory system. Running down a rocky trail requires split second timing and agility. Our built in proprioception enables us to know where our feet are in space without even looking down. Our tactile sensation confirms proper placement of our foot and allows for accommodations to uneven surfaces. Much like an orchestra with a single out of tune instrument, dysfunction or fatigue in one structural component may result in asymmetry and overcompensation elsewhere, causing an overuse injury.

**Foot Mobility:**
Decreasing plantar fasciitis or medial tibial stress symptoms begins with improving the mobility of the foot. Think of the plantar fascia as the “brakes.” If motion (mobility) within the foot and associated joints is limited, the plantar fascia takes up the slack and applies the brakes to the inertia of the intended motion. Whether your feet have low arches, high arches, no arches, long finer-like toes, or short stubby toes,
all foot types can benefit from mobility exercises. Our great toe (big toe) is responsible for 80% of the stability in our foot. The great toe achieves this through flexion (pushing the great toe into the ground as we push off) and extension (lifting the big toe off the ground as we begin to swing our leg through for the next stride). The great toe is the driving force or “brains” of our foot. Without 30° of great toe extension our foot mobility is compromised. Without the isolated ability to push the great toe into the ground the intrinsic stability of the foot during push off is compromised, leading to over-pronation and foot strain associated with plantar fasciitis. A few simple, individualized “foot yoga” exercises will effectively address the foot mobility needs unique to runners with great success.

**Foot Stability:**
Foot and lower leg stability is achieved through hip strength, core strength, lower leg (calf, tibialis posterior), and intrinsic foot muscular strength. The delicate balance of pronation and supination which is controlled in the lower leg musculature (fibularis, tibialis posterior, and gastroc-soleus muscles). Simply put, pronation allows our foot and ankle to absorb shock and impact associated with running, while supination allows us to push off a stable, strong foot rather than a mushy, collapsed foot. Physical therapists specializing in running injuries can provide you with a balance of exercises to address both of these necessary foot and ankle components.

**Footwear:**
Missoula’s Runners Edge staff can describe the pros and cons of the incredible selection of running shoes available. Whether you prefer to stick with the brand and model that work for you, or wish to try a lower profile shoe to feel the ground beneath you, find a shoe that works for you. A bit of cushion protects the foot from rocky trails and compression, but be sure you can feel the ground beneath you. Your running shoes should allow the ground to communicate with your foot and should not interfere with your body’s (hip, leg, lower leg, and intrinsic foot musculature) goal of effectively propelling you forward. A mega cushioned shoe will not take the place of a foot with intrinsic muscular weakness.