



Fenton Physical Therapy

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Malleolus Focus

How Limited Ankle Mobility Creates Pain In Many Places



Robbie had been running in five and ten kilometer fun runs for the last three years. Last September, she suffered an ankle injury in a soccer game collision. She recovered from the injury with a

back pain.

Adequate ankle dorsiflexion ROM is the ability to plant the foot and move the shin forward over the foot. If you are unable to perform this movement, you will be limited in your capacity to squat, lunge, decelerate force, and produce the propulsion needed to run efficiently. Running with limited dorsiflexion ROM transfers stress to the structures above the ankle. Restrictions in ankle movement created the joint and muscle overload that produced the pain in Robbie's lower back and hip.

A restricted ankle joint places greater stress on the knee, hip, and lumbar spine. It is a theory of mine that many people develop early breakdown in their knees because of long standing deficits in ankle dorsiflexion range of motion. Your lower back becomes more prone to injury as it becomes far more difficult to lift with ergonomically acceptable postures if your ankles are tight. Impact absorption is less efficient when the ankle is unable to travel through full dorsiflexion range of motion. Inefficient deceleration is a primary driver of athletic injuries.

program of rest and the liberal use of anti-inflammatory medications. Six weeks later, the ankle pain resolved and she returned to her training runs. As her running mileage increased, she developed pain in her lower back and right hip. Imaging tests and evaluation by several physicians produced no significant findings. She tried different running shoes and chiropractic care, but to no avail. In April, Robbie was referred to our clinic for therapy.

Robbie reported lower back and anterior hip pain that occurred with runs longer than a mile. Robbie had normal range of motion (ROM) and good strength in her lower back, hips, and knees. No pain was created with testing of repeated or sustained hip or lower back motions. Her right ankle active and passive dorsiflexion ROM (foot up toward the shin) was very limited. Passive stretching of the ankle did not create pain, but she was unable to attain a full squat or a split squat position secondary to the limited dorsiflexion of the ankle. She was pain-free running on a treadmill until it was inclined. Then, she quickly developed hip and lower

Why Do Ankles Get Tight?

Prior Injuries

After an ankle sprain, most people simply rest, ice, and anti-inflammatory medicate until the swelling and pain resolve. Rarely are any rehabilitation activities performed to restore lost range of motion and strength. This is the primary reason ankle sprains often become a recurrent problem. Two or three ankle sprains can easily produce a 40% loss of ankle dorsiflexion range of motion.

Footwear Implications

High heel shoes make you far more prone to develop the adaptive shortening of the muscles, tendons, and ligaments that can restrict ankle dorsiflexion. Running shoes designed to reduce pronation and increase shock absorption have firmer and thicker heels. While this design dissipates the force produced during heel strike, it also artificially limits the need for ankle dorsiflexion.

Bad Training Advice

I often hear trainers and group exercise instructors tell their clients. "Don't let your knee travel beyond your toes." This keeps the shin angle nearly perpendicular to the floor and limits ankle dorsiflexion motion. Following this advice takes full range ankle dorsiflexion out of the exercise session. In life and athletics your knee travels past the toes all of the time. If you have long femurs you will never be able to squat, lunge or pick things off the floor without the knee traveling past the end of your foot.

Sitting In The Gym

I am always glad to see people exercising; however, performing seated leg exercises will not produce any improvement in ankle mobility. The foot needs to be on the ground, and the exercise must create a gravity-mediated interaction between the ankle, knee, hip, and pelvis. Fitness clients often say that their knees and hips hurt too much to train in a standing position. Improving ankle dorsiflexion range of motion with four weeks of daily mobility training often produces a resolution of their pain.

Very restricted ankles require the assist from a Physical Therapist in the form of manual joint mobilization and soft tissue work. Robbie attended seven sessions of therapy over four weeks. Manual therapy to the ankle joints and a series of augmented soft tissue mobilization restored her ankle ROM. She performed ankle mobility exercises twice a day and took a break from the high heels at work. At the end of four weeks, she was able to return to running and was pain-free.

Evaluate Your Ankle Dorsiflexion Range of Motion

Try this simple test. Take off your shoes and set a line five inches from the wall. Place your longest toe at that mark. Keep the heel on the ground and do not let the arch collapse. Keep the knee lined up with the second toe and move the knee toward the

wall. Normal ankle dorsiflexion range of motion permits the knee to touch the wall while the arch of the foot remains solid and the heel flat on the ground. If you fail this test, try some of the activities in the video.



Soft Tissue Mobilization



Sustained Stretch

-Michael O'Hara, P.T., OCS, CSCS



**Video for this article can be seen on
our youtube channel at:
<http://youtu.be/AClyeSL8xM8>**

Athlete Profile: Sydney Cislo

Reaching Full Potential

Sydney Cislo started training in our Sports Performance program in early November. When she started, she had two specific goals: To improve her vertical jump and to make the varsity volleyball team at Fenton High School next fall.

Upon her initial movement screen, it was apparent that Sydney moved very well, but lacked core strength and stability which greatly limits any athlete's performance. Sydney has trained consistently, 2x/week, taking only a few weeks off during Christmas break. She increased her vertical jump by a ½" in 2 1/2 short months, increased her squat by 50lbs, increased her deadlift by 60lbs, and progressed her upper body and core strength to the point that she can manage 5 strict (chest to floor) push-ups.

"Training at Fenton Fitness is something I really enjoy because I am learning how to properly work out certain muscles and parts of my body that improve the skills specific to my sport. The workouts and conditioning drills are designed to help me reach my own personal goals. I am able to get a lot out of the workouts because, working with Jeff, I am being

pushed to reach my full potential. I enjoy the atmosphere, the friendly staff, and those who work out with me along with all the results I've seen in myself."

Sydney takes instruction incredibly well, is always focused on the task at hand, and maintains a positive attitude. We are now working to further improve her strength and explosive power as well as incorporate more multi-plane movements that more closely mimic actions of athletic competition. I look forward to seeing Sydney develop as an athlete and an individual over the next few years.



-Jeff Tirrell, B.S., CSCS, Pn1

Happy 'Pain-Free' Anniversary

"I cannot believe what a year can do!"—Jessica Delagarde

As dedicated member Jessica Deleagarde approaches her one year anniversary with Fenton Fitness, she could not be happier with her results. It was a difficult journey before she walked through our doors, but once she joined, she never looked back.

Several years ago, Jessica hurt her back. It affected her life so greatly that she had started to keep a journal to record her pain, different doctors' names, prescriptions, and recommendations.

"The entries included when I slept on the floor in my guest room a month because my bed and the couch were too uncomfortable. I wrote down every time I bent over to pet my dog or pick something up and



got stuck in that position for what felt like an eternity."

She recorded injections, therapy sessions, and a discogram. The last journal entry indicated a recommendation from a neurosurgeon for a posterior spinal fusion of L4-S1.

"There are no entries after that date because I refused to believe that someone under the age of 30 needed that extreme an operation."

Last March, Jessica took matters into her own hands. She joined us for the 30 day trial and then signed up for a Team Training membership.

"The trainers and the functional movements helped strengthen my lower back in ways I never knew how. I am proud and thankful to say I have not had ANY issues since then...NONE!!! I am stronger and healthier than I ever thought possible, and it is all because of Fenton Fitness & the trainers."

-Amy Warner, Director of Sales and Marketing

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Hours
Mon-Fri: 5:30am-9:00pm
Sat-Sun: 8am-3pm

Fitness Formulas

When I get questions from patients and fitness clients about exercise, I always ask them what they are trying to accomplish with their training program. The primary goal is nearly always fat loss. They want to lose weight and feel better. Most have already started doing some type of exercise activity and many have suffered an injury related to their training. I keep a copy of these "Fitness Formulas" and use them to help instruct on which activities will help them reach their goals.

It is all simple addition-- no division, multiplication, or algebra. It is cumulative, and it is specific. Knowing the formula is important. Fill in the missing components, perform consistently, and the results will be good. Most people are missing key components in the formulas. They want to substitute more exercise for the absence of a proper diet. Despite being incredibly under muscled, they avoid strength training all together. Glaring mobility deficits are often what lead them to become physical therapy patients.



Fat Loss Formula

Stronger + Multi Joint Exercise = More Muscle
Balance + Coordination + Consistent Movement = Better Mobility
Better Mobility + More Muscle = Healthy Metabolism
Healthy Metabolism + Proper Diet = Less Body Fat and a Leaner You

The proper diet portion of the Fat Loss Formula is the component of the equation that is most frequently neglected. You simply cannot "out exercise" a lousy diet.

Many older and deconditioned individuals need to be more aware of the Independence Equation. If you want to maintain the ability to move through your day, until the end of your days, this is the equation that matters. Modern medicine has gotten better at adding years to our lives, but the quality of those years is based on this formula.

Independence Equation

Stronger + More Muscle + Healthy Metabolism + Mobility = Lifelong Independence

I thank Dr. John Ratey, author of the 2008 book Spark: The Revolutionary New Science of Exercise and the Brain, for the Brain Function Equation.



Brain Function Equation

Consistent Exercise + Healthy Metabolism = Better Mental Function

-Michael O'Hara, P.T., OCS, CSCS

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