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Knee Plee

The Not So Well Known List of Knee Pain Producers

In an effort to lose some weight and improve her health, Janet started running again. Five days a week, she was either out on the road or on her treadmill. She started out with one mile runs and gradually increased to three mile runs. Janet first noticed an ache across the front of the knee when she sat for a prolonged period of time. When she stood up and walked the pain would go away. She added some Motrin and stretches to her pre-run program, but the pain just kept getting worse. Three weeks later, the pain in the front of her right knee became so intense she had to stop running. Janet showed up in our clinic six weeks later.

Knee pain is one of the biggest reasons athletes and fitness participants visit the physical therapist. Some causes of knee pain are known by nearly everyone. We all know that adding too much activity too soon can lead to lower extremity overuse injuries. Heavier individuals are much more prone to develop knee pain when they perform exercise activity. Most people are not aware that many other activities and demographics make you more prone to develop knee pain. Following is a list of my top five:

The Stronger Sex

Statistically, women are far more prone to develop a fitness or sports-related knee pain problem. Many theories for this have been put forward. Wider hips, excessive joint mobility, and fluctuating hormones, probably all play a role. The good news is that preventative exercise programs work well in reducing the occurrence of knee pain.

Gluteal Amnesia

The muscles of the hip control movement at the knees. If the hip muscles become weak or deconditioned, the knee rotates and/or moves side to side excessively. This excessive movement creates all sorts of overuse pain problems in and around the knee joint. Hip weakness is a fairly common problem in the general population. Most people never perform any gluteal muscle activation activity. They rarely squat deep, lunge long, or sprint. Most people sit all day and compound the problem by exercising in a seated position.

Running With A Heel Strike

Most of the runners I see out on the road utilize a fairly substantial heel strike. They land on the back of the heel with the knee fully extended. This places a significant amount of deceleration force on the knee joint. Changing running mechanics so that you land on the midfoot will decrease the stress on your knees. It will be difficult to make the change, but with consistent practice and training, it can be mastered. For many runners, it is the only way they will be able to return to training and stay pain free.

High Heels

Weight bearing with the lower leg in the high heel position creates much more stress on the knees. When you wear high heels, all of the shock absorbing capacity in the ankle and foot is lost. You risk the development of adaptive shortening in the joints of the toes, ankle and foot. Limitations in lower leg range of motion make you much more prone to knee injury.

(continued on next page)

Well Intentioned But Aggravating Exercise Activities

Seated knee extensions, leg presses, seated hip abduction/adduction (in and out machines) and seated/prone leg curls all create greater stress in the connective tissue structures around the knee and do nothing to improve the neuromuscular control you need to move more efficiently. I have treated many people who have taken a mild case of knee pain and made in substantially worse with well intentioned "knee strengthening" exercises.

Janet's evaluation revealed weakness in her gluteal/hip rotator muscles and tight ankles. She was started on a program of hip strengthening exercises and ankle mobility drills. All of her exercises were performed in a standing position to enhance neuromuscular control at the knee.

Janet reluctantly gave up her high heels and wore flatter shoes to work. She discontinued the leg curl exercises she had been performing at her gym.

Three weeks later the pain in her knees had resolved and Janet was able to return to treadmill running. On the treadmill, Janet utilized a strong heel strike with a fully extended knee. We had Janet work on running drills to make deceleration less stressful on her knees. Over the course of six weeks of training she was able to shift impact to the mid foot and land more efficiently. Janet was back to three mile training runs eight weeks after starting therapy.

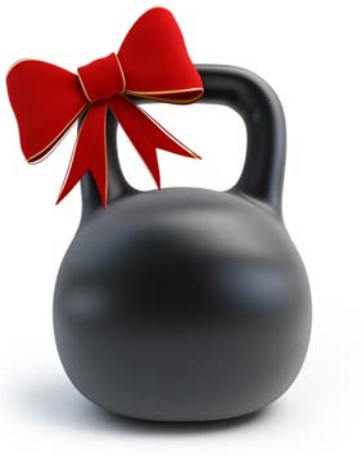
-Michael O'Hara, PT, OCS, CSCS

Fenton FITNESS & ATHLETIC CENTER

Give the Gift of *Fitness* this Holiday Season

Fenton Fitness Gift Certificates Make A Great Holiday Gift

What better way to show someone how much you care for them this Christmas than by getting them started on the road to better health. When you give a gift of fitness, you create an opportunity for success that can change a life. No other aspects of life can be fully enjoyed without a strong and healthy body. Many people just need a little extra encouragement to develop the exercise habit. Your gift and support can make that happen.



At Fenton Fitness, your gift will not go unused. A little guidance goes a long way and our knowledgeable staff and certified, experienced trainers will create the ideal environment for your gift recipient to change his or her life.

Gift Certificates are available at the front desk and can be purchased in any denomination for membership dues or training services. Think outside the box this Christmas and give the gift that really matters—the gift of better health!

Fenton Fitness Helps Bring Christmas To Area Children

The Angels are here! Fenton Fitness is helping Fenton Rotary make Christmas possible for families in need. Open your hearts this holiday season and be the angel who brings a smile to a child on Christmas morning. See the front desk to sponsor a child. All gifts must be purchased, wrapped, and delivered to Fenton Fitness by December 15th. For more information, contact us at (810) 750-0351.

Fit For Life Seminar

Saturday, January 10, 2015 from 10:30 am-4:30 pm
At Fenton Fitness and Athletic Center

Fenton Fitness and Fenton Physical Therapy will be presenting a one day, learn-by-doing seminar, ***Fit For Life***, on Saturday, January 10, 2015. It will feature lectures and hands-on activities intended to teach the latest concepts in functional training and rehabilitation. Anyone interested in learning more about staying functionally fit and active is encouraged to attend.

Cost for the seminar is $45.00 for Fenton Fitness members and $55.00 for non-members. Sign up by December 24, 2014 and receive a $5.00 discount.

For more information, contact Fenton Fitness at 810-750-0351 or Amy Warner at amy@fentonfitness.com.

Visit the Fenton Fitness website at www.fentonfitness.com for our complete Fit For Life brochure.

AGENDA—Saturday January 10, 2015		
10:00am-10:30am	Registration	
10:30am-11:30am	**Lecture 1--Longevity Fitness: Winning The Battle One Training Session At A Time** *with Mike O'Hara and Sean Duffey*	
11:30am-12:30pm	**Hands-On Session 1** (Choose One)	
	Power Production and Stability Jeff Tirrell, Dan Allison,	**Pre-Rehab/Corrective Exercises** Mike O'Hara, Sean Duffey, Sarah Hall
12:30pm-1:30pm	**Lecture 2--Nutrition 101:Common Myths and What Really Matters** *Jeff Tirrell and Sarah Hall discuss misconceptions perpetuated by the media, the problem with fad diets, and what really matters when it comes to nutrition.*	
1:30pm-2:30pm	Lunch (on your own)	
2:30pm-3:30pm	**Lecture 3—Training Fundamentals: Strength, Power, Mobility, and Stability** *Jeff Tirrell and Dan Allison discuss why strength and power, and the requisite mobility and stability must be the base of any good training program regardless of age or goal.*	
3:30pm-4:30pm	**Hands-On Session 2** (Choose one)	
	Power Production and Stability Jeff Tirrell, Dan Allison	**Pre-Rehab/Corrective Exercises** Mike O'Hara, Sean Duffey Sarah Hall
4:30pm	Question and Answer Session	

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This newsletter, published monthly, is available by email. If you would like to be added to our email list, simply give your email address to any staff member or send your request to barb@fentonphysicaltherapy.com. You will receive the newsletter, as well as updates on events at our physical therapy clinics and fitness center.

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Fenton FITNESS & ATHLETIC CENTER

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

Waking Up The Muscles That Move You

Building the "Works Good" Muscles with the Glute Hamstring Raise

An old saying in strength and conditioning goes like this: "The muscles in the front of the body make you *look good,* and the muscles in the back of the body make you *work good*." Take a close look at any explosive athlete, and you will see well developed glutes, hamstrings, and back muscles. If you want an exercise that will develop all of these areas, try the Glute Hamstring Raise (GHR).

The GHR is a great exercise for fitness clients with sensitive lower backs. Unlike the deadlift, good morning, and Romanian deadlifts, compressive axial loading on the lumbar spine is minimal. The GHR creates an isometric stabilization demand on the muscles that support the lumbar spine and pelvis with minimal shear force on the spinal joint segments and disc. Many lower back pain patients have what is commonly called gluteal amnesia, or an inability to fire the gluteal muscles in an effective manner. You cannot perform a full glute ham raise without using the gluteals. Another benefit is that the GHR teaches proper hip hinging, a skill that is often absent in the lower back pain population.

Glute-Ham Raise

Most big box, commercial gyms do not have a Glute Ham Developer bench to perform GHRs, so most general fitness clients will be unfamiliar with this exercise. The set up on the Glute Ham Developer bench will vary based on the length of your legs. It will take some practice to properly align, but once you have the correct pad positions, it is always the same. The Glute Ham Developer bench has a foot hook setting that adjusts vertically and thigh pad setting that adjusts horizontally. Align the pads so the thigh is held tight against the round pad and the feet can stay tight against the platform. A common mistake is having the knees positioned across the thigh pad. The calves are placed against the platform roller pads. Begin with the torso perpendicular to the floor with the knees bent. Tighten the gluteals, hamstrings, and abdominal muscles and lower under control until the torso is just below parallel to the floor. Hinge at the hips and do not let the back bend. The motion should come from the hips flexing and the knees extending. Keep the lumbar spine stable with a solid lordosis. From this position, push the feet against the platform and tighten the hamstrings, bend the knees and pull back up to the starting position. Repeat for three to ten repetitions. If you are unable to perform a full GHR, try the preparation exercises listed below and work your way up to it.

GHD Plank

The Glute Ham Developer Plank is a preparation exercise that will permit you to gain the core strength for a full GHR. Adjust the bench settings to position your body on the bench, in one long line from ears to ankles, and parallel to the floor. Keep a straight lumbar spine and hold for 20 to 40 seconds. Place the hands behind the head to make the exercise more challenging.

Slider Leg Curl

If hamstring weakness is your limiting factor with the GHR, then the Slider Leg Curl is the preparation exercise that will help you develop the leg strength for a full GHR. Lay supine with the knees extended. Place a slider under each foot. Lift the hips off the floor and pull the slider up toward the glutes by bending the knees and pulling up with the hamstrings. Return to the starting position and repeat for five to ten repetitions. Try working up to the single leg version.

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

Video for these exercises can be seen at:
http://youtu.be/ApcT_QXuBrY