



## Fenton Physical Therapy

400 Rounds Drive  
Fenton, MI 48430  
(810) 750-1996

## Linden Physical Therapy

319 S. Bridge Street  
Linden, MI 48451  
(810) 735-0010

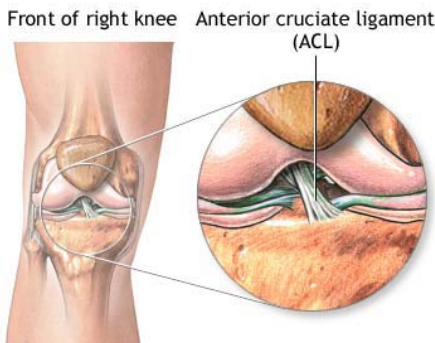
## Milford Physical Therapy

135 S. Milford Rd  
Milford, MI 48381  
(248) 685-7272

# An Exercise Ounce Of Prevention...

## *Reducing The Risk Of Anterior Cruciate Injury In Female Athletes*

We have all heard of someone sustaining an "ACL injury". ACL is the term used for the anterior cruciate ligament. This ligament is located inside the knee and helps stabilize the knee joint. It is frequently injured during athletic activities, and the subsequent surgery to repair a torn ACL can take well over nine months of rehab to fully recover. In



1994, the NCAA released the first in what was to become a series of similar studies. It documented that female basketball players sustained ACL tears at a far greater rate than males. Unfortunately, further studies in other sports have been similar to or worse than that of basketball. A female soccer player's risk of sustaining an ACL injury is four to eight times greater than her male counterpart. Knee injuries in women's volleyball is triple that of men's volleyball. So what can be done to reduce the incidence of this devastating injury in women's sports?

Strength coaches, physical therapists, and trainers have been looking for answers by evaluating how ACL injuries occur. Video analysis of actual injury events have numerous common traits. The injury incidents are generally non-contact, meaning that no external force influenced the injury. The injuries occur while the athlete is decelerating, or attempting to slow down a motion. The motion that created the injury was an uncontrolled inward rotation of the knee.

Screening of female athletes has found that they are less efficient at decelerating force through the lower extremities than their male counterparts. Poor deceleration leads to the knee falling into the "knock kneed" position that makes the ACL more susceptible to tearing. Female athletes are frequently more quadriceps dominant, meaning they use the muscles in the front of the knee to a far greater extent than the muscles in the back. The muscles in the back of the knee are responsible for reinforcing and protecting the ACL. Several studies have documented proprioception (joint position awareness) and balance test scores for female athletes are not as good as male scores.



The primary goal of any athletic training program is reducing the risk of injury. Since we know how and why ACL tears occur, we can create programs of exercise to address the specific needs of the female athlete. Most college strength and conditioning programs have instituted these programs. Unfortunately, high school age girls endure the greatest number of ACL tears. To truly make any difference in the number of ACL injuries in women's sports, we need to start with preventative training at far younger ages. On the following page is my suggestion for the female athlete wishing to reduce their risk for an ACL injury.

*Michael S. O'Hara, P.T., O.C.S., C.S.C.S.*

## ACL Prescription For Prevention

Hosted at **Milford and Fenton Physical Therapy**, *ACL Prescription For Prevention* is a participatory clinic designed to teach basic exercises and drills that reduce the risk of ACL injury. Participants will learn:

- proper deceleration mechanics
- posterior chain strengthening to reduce quadriceps dominance
- sports specific core stabilization drills
- proprioception and balance training

The clinic is open to girls from 12 to 18 years of age. Parents need to register their daughters at either Milford Physical Therapy or Fenton Physical Therapy.



### Clinic Dates and Locations:

#### Milford Physical Therapy

248-685-7272

Saturday, February 19, 2011 10:00 am-11:30 am

#### Fenton Physical Therapy

810-750-1996

Saturday, February 12, 2011 10:00 am-11:30 am

**COST: \$25.00**

### ACL EPIDEMIC EXAMPLES

In 2005, the Tennessee Lady Vols basketball team and their esteemed Coach Pat Summit had one of the best recruiting years of all time. Under Coach Summit, the Lady Vols had already won seven national championships. The press heralded the six incoming freshman players as the "Six Pack". Before the season had even begun, three members of the "Six Pack" were sidelined with ACL related surgeries. Candace Parker, the future star of the Lady Vols, suffered two knee injuries and missed her entire first year.

In 2007, five of the starting point guards in the Pacific Ten Women's Basketball Conference tore their ACLs and were lost for the season. One half of the starting point guards in the Pac 10 lost to the exact same injury. That same year, the perennial powerhouse, University of Connecticut Women's basketball team, lost two starting players in the first week of the season to ACL tears.

The NCAA has recently released data on the prevalence of ACL injuries suffered by athletes in the Big 10, Pac 10, and ACC. The data was collected over the 2008-2009 seasons for both male and female participants, and represents the percentage of ACL tears. The figures speak for themselves.

	<u>Men</u>	<u>Women</u>
Big 10 Conference	2.1%	19.3%
Pac 10 Conference	0.7%	12.9%
ACC	4.2%	16.5%

## You Are Cleared For Landing



Video replay of female athletes sustaining ACL injuries show these events appear to occur spontaneously. The athlete plants one foot, feels a pop, and then a sudden sensation of instability in their knee. One second they are up and playing, and the next, they are down on the court. Evaluation of the videos reveals a consistent uncontrolled inward rotation of the knee during deceleration.

Female athletes often have difficulty controlling the trunk, pelvis, hip, and knee position when they land on one foot. The hip tends to drop, the torso rotates, and the knee falls into an inwardly bent position. This places greater stress on the ACL ligament, creating the ideal injury environment. Female athletes need to learn how to keep the knee under the hip during changes of direction and quick stops.

Practicing proper deceleration mechanics is the most important component for ACL injury prevention. The female athlete must be able to land with proper torso, hip, and knee alignment. Emphasis on a soft or “quiet landing” that shares the load between all lower extremity joints keeps excessive stress off the knee. Deceleration drills should be part of every female athlete’s warm up. Coaches of women’s teams should make training deceleration mechanics part of their practice protocol.

---

## Knee Rehab With Pilates Training

### *Reformer Work Improves Knee Control*

The reformer is a spring resistance table with a moveable carriage. It was invented by Joseph Pilates to permit the development of exercises that improve physical performance. The reformer table quickly became a big hit with ballet and theatrical dancers. It allowed them to strengthen the movement patterns so essential for pain free performance.

The reformer can be used in standing, supine and four point positions. Reformer exercises require consistent concentration to master, smooth and efficient execution of the various drills. The nature of the spring resistance allows the Physical Therapist to place less force in the mechanically weaker positions and more resistance in the stronger portion of the movement. The patient is elevated off the ground, and the Physical Therapist can more readily manually direct instructions to the patient.

Private Pilates sessions and group classes are available

at both Fenton Physical Therapy and Milford Physical Therapy. For more information, contact Fenton Physical Therapy at 810-750-1996, or Milford Physical Therapy at 248-685-7272.



---

## Join Our Email List

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 [bohara430@earthlink.net](mailto:bohara430@earthlink.net). You will receive the newsletter, as well as updates on events at our physical therapy clinics and fitness center.

---

404 Rounds Drive  
Fenton, MI 48430  
810-750-0351



Hours  
Mon-Thur: 5:30am-10pm  
Friday: 5:30am-9:00pm  
Saturday 8am-5pm  
Sunday 8am-2pm

## Thanks, Coach!

### *Motivation And Inspiration From John R. Wooden*



On June 4<sup>th</sup>, 2010 Coach John Wooden passed away at the age of 99. John Wooden is one of the few people elected to the basketball hall of fame as both a player and coach. Most of the records compiled by the UCLA basketball teams he coached will probably never be broken. He

was a pioneer in the desegregation of basketball. His work as a coach is reflected by the admiration of his players. As a young man, I was fortunate enough to see Coach Wooden in action. No swearing, throwing chairs, ranting, or raving. He rarely got up off his chair. All he did was win.

*"I played for John Wooden at UCLA, where he won more NCAA basketball championships than any other college coach in history. Doing the right thing was the only way that Coach knew how to act. For me, one story clearly illustrates that. In 1947, he was the basketball coach at Indiana State when the team was invited to the NAIA tournament in Kansas City, Mo. But there was one condition: he was told that he could not take Clarence Walker, an African American player. Coach thanked the organizers for the invitation, but he told them he had to take his whole team or he wouldn't participate. The following year, Indiana State had an even better season and received the same invitation. This time, the tourney promoter gave in. It never became widely known that Coach had confronted segregation, and he never tried to claim any credit for his principled stand: He knew it was the right thing to do, and that was enough for him."* Kareem Abdul-Jabbar

*"When I played for him, he taught me the game of basketball. Later, I came to realize, he really taught*

*me the valuable aspects of life. As competitive as he was, both as a player and a coach, he was incorruptible. He lived and taught with a simple philosophy that building a winning team or a successful life can be accomplished without breaking the rules or sacrificing personal values."* Gail Goodrich



So how does John R. Wooden relate to fitness and the gym? Mental and emotional reinforcement with proper motivation and inspiration is a frequently overlooked aspect of staying fit. It takes dedication and commitment to reach fitness goals. The 1997 book, Wooden: A Lifetime of Observations and Reflections On and Off the Court, presents some of the wisdom that helped make John Wooden so successful. On the walls at UCLA, you will find the John Wooden "Pyramid of Success" plastered everywhere. Coach Wooden made as much of a mark as a motivational speaker as he did as a coach. Setting goals, staying focused, and developing superior work habits are all key components of health. I can think of no one better suited to give advice than Coach Wooden.

Michael S. O'Hara, P.T., O.C.S., C.S.C.S.

