



Kentucky *Sports* Chiropractic

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www.kentuckysportschiropractic.com

Importance of the Kinetic Chain in Runners

- By Dr. Kyle Bowling

The “kinetic chain” is an anatomical term referencing the concept that each part of your body is interconnected. The biomechanics of your foot affect those of your ankle. The biomechanics of your ankle affect those of your knee. The biomechanics of your knee affect those of your hip. In other words, just as links of a chain keep it connected and working, body parts affect other body parts. Furthermore, our bodies are like assembly lines, if one worker isn't doing its job, another worker has to work harder to compensate. The importance of this chain's optimal function to a runner cannot be overstated.

Let's take a minute and break down the biomechanics of a one mile run. During a single mile (5,280ft) we take an average of 2,000 strides (1,000 with each foot). If one muscle or joint used for running isn't doing exactly what it's supposed to be doing, aka a link in the chain isn't working properly, imagine how this would be magnified. This is the mechanism behind most running related overuse injuries. Overuse injuries such as shin splints, plantar fasciitis, ischial bursitis, IT band syndrome, runner's knee, and muscle strains, amongst others, are more times than not related to a dysfunction in the kinetic chain.

So what would cause a link in the chain to dysfunction? A muscle becomes overused in three ways:

- Acute injuries (pulls, tears, collisions, etc.)
- Accumulation of small tears (micro trauma)
- Not getting enough oxygen (hypoxia)

Once the aforementioned things occur and accumulate, the muscles, tendons, ligaments, and fascia become weak and tight. Then as a defense mechanism, our body lays down scar tissue or adhesion that will eventually limit the structure's mobility and range of motion. This then starts to affect the entire kinetic chain in the form of compensations.

How do you prevent this overuse from occurring? For starters, the right equipment, i.e. running shoes that match your type of gait. If you're an overpronator (striking the ground on the inside of your foot), you'll need a stability shoe that offers pronation control. Also, a proper warm-up and cool-down is a must via implementing a foam roller or “The Stick” into your daily routine. These are both forms of myofascial release that increase blood flow and oxygen to the treated area which will prepare the muscle for activity.

About Kentucky Sports Chiropractic

At Kentucky Sports Chiropractic, we focus on the complex relationship between nerves, muscles, and joints of the body and how this relates to the overall function/performance of the body. How

the spine works (i.e., its biomechanics) can influence the nervous system and can alter the overall function of the body. Abnormal peripheral joint function (knees, shoulders, elbows, etc.) can also alter nervous system function and reduce performance.

Kentucky Sports Chiropractic is owned by Dr. Kyle H. Bowling. Dr. Bowling was born and raised in Louisville, KY. He received his bachelor's degree from The University of Louisville, majoring in exercise physiology and sports medicine. While at UofL, Dr. Bowling competed on the Track & Field and Cross Country teams. After graduating from UofL, Dr. Bowling received his doctorate degree from Palmer College of Chiropractic Florida. He is also certified in Active Release Technique (ART) and Graston Technique.

His philosophy is to utilize treatment plans founded on science, and care for patients compassionately utilizing a variety of Chiropractic, Soft Tissue Mobilization, and Rehabilitative techniques which will eliminate symptoms and improve overall function of the human body. Dr. Bowling also believes strongly in patient education and empowering patients to improve the quality of their lives, because patients who know more about their conditions, stay healthier.

Throughout his experience, Dr. Bowling has treated athletes of all levels, ranging from professional runners to the "weekend warrior". He also serves as the team physician for the state champion North Oldham High School cross country team.