



Physical Therapy For ALL Runners!!

By Laurie Xiong, PT

Are nagging or multiple injuries keeping you off track with your training/exercise??

Do you want to get to the **ROOT** of your injury cause and be given **self care management for long term injury prevention??**

At **New Heights Performance Physical Therapy** we set ourselves apart with our unique evaluation and treatment of runners:

1) We often see that many people aren't symmetrical, often starting at the pelvis. They then posturally adapt and develop **asymmetry/compensation** with other joints and muscles up and down the chain. Examples are: uneven rib and shoulder heights, flat or high arches, overdeveloped muscles and hip ROM asymmetry (posturalrestoration.com). We do a **thorough evaluation** and look from head to toe and spot where there is asymmetry in flexibility, compensatory tightness and weakness side to side no matter what body part is nagging you.

2) You get a truly **individualized home exercise program**. Runners need **flexibility** in their low back muscles, Achilles, and big toe extensors. Our low back muscles can be so tight we can even lose not only our ability to squat properly, but also to run properly. Often we focus on muscles that are too tight, however...**It's not always a good thing to have too much flexibility in some muscles**. For example, hamstrings that stretch a lot more than 90 degrees or runners that can easily palm the floor when they bend forward tend to have decreased pelvic stability and really need hamstring strength, deep abdominal, gluteals to control their pelvis!

Our **strengthening** exercises particularly for the gluteals, hamstrings, inner thighs and deep abdominals involve **NEUROMOTOR** training. Often the question arises...how will my body transfer the same muscle firing when I run, like a laying down or static standing exercise we may give you? The answer: we teach a runner to **REPETITIVELY FIRE A NEW NEURAL PATTERN**. Lots of runners consider themselves "strong", however, at times they aren't firing in a way that prevents poor running biomechanics. We make sure you can fire these muscle patterns well lying down before we challenge you in standing and then with movement.

Nobody wants to talk about it, but we (New Heights Women's Health Specialists) don't forget about **pelvic floor muscle strength**. It's common in all (not just postpartum) women to get **Stress Urinary Incontinence (SUI)**: a sudden, involuntary loss of urine caused by muscular strain on weakened pelvic floor muscles accompanied by laugh, cough, sneeze, and exercise). Poswiata et al. J of Human Kinetics 44(2014): 91-96 had a field of female elite endurance athletes, 76% nulliparous (never born children) and 24% parous (produced child(ren)). 45.54% reported SUI. So, if all women runners can get SUI, it may not just be overstretched and weakened pelvic floor muscles due to vaginal deliveries, but the pelvic floor may be compensating for possibly weak deep abdominal/ hip muscles/ pelvic instability. Underwood et al. J of Women's Health Physical Therapy April(2012), 36:55-61 found hip abduction strength decreased in women with SUI.

3) True **VIDEO RUN ANALYSIS** BY RUNNERS THEMSELVES: It's easy to look at a video and point out faulty biomechanics, but we also look at the **WHY**.

We appreciate that running is a 3(tri) plane, upright reciprocal activity. Even though it is a repetitive forward activity, we need **CONTROL** in all three planes, especially our **FRONTAL** plane. We make sure to include looking at runners from the front/back. Often this is where we can pick up on a runner's **weak hips**. Irene Davis at the University of Delaware has researched many runners and has found that 1 of the best predictors of future injuries in healthy runners is a mechanical evaluation/ treatment of the hip!

A lot of times runners need form changes, but their body isn't strong enough yet to support these changes. Hence, as stated above, we start with an individualized home exercise program to make the runner more mobile and/or stronger.

We understand running biomechanics and analyze how your body moves, it's more than just cadence!. A recent publishing pointed to a "normal" cadence of 180 steps per minute (Daniels' Running Formula, author Jack Daniels). However, in 2011 Heiderscheit et al. found that simply increasing your **current** cadence by 5-10% still results in decreased impact on landing and decreased vertical displacement.

Here is a good overview of good running form/ drills to practice <https://www.youtube.com/watch?v=wCVSv7UxB2E>

4) We put our hands on our patients...**Manual therapy**, at least initially, often has a place to release tight, overused myofascial tissues. Fredericson et al. Sports Med. 2005;35 451-459 found that connective tissue release to not only the ITB (in runners with ITB pain) but also surrounding restricted areas such as the gluteals, hip, thigh and lower extremity helped decrease ITB pain significantly. **Muscles we often find tight** are: the low back, posterior hip, quadriceps, ITB, hip flexors, gastrocs, plantar fascia/ ankle/and lower leg.

5) We look at your breathing. **Breathing is important!** Many runners don't take advantage of their whole lung capacity and breathe shallow. Respiratory training involves activation of the diaphragm to maximize oxygen supply and performance during running (Simon Kidd: How to Activate Your Diaphragm to Improve Breathing and Performance). As PT's we may also perform

gentle ribcage mobilizations to help a runner breathe more effectively. Finally, we make sure a runner has adequate low back flexibility and deep abdominal strength to help fully exhale.

6) We assess **proper footwear**. For example we want our runners to feel their arches and have little to no lateral heel give in their shoes. We'll give proper shoe recommendations after gathering information on a runner's foot type, core strength and video running analysis.

**Enjoy The
Strong**



**Happy, Healthy,
Running You
Deserve!!!!**