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Many patients come to Physical Therapy due to knee pain, specifically anterior knee pain or Patella Femoral Pain Syndrome (PFPS). PFPS usually has a gradual onset and patients cannot recall why their knee pain started. PFPS also is more common among women than men. Some studies say women have a 2:1 incidence over men and athletic women have a 4:1 incidence over men. Multiple reasons or factors contribute to knee pain. PFPS is usually linked to a muscle imbalance in the lower extremity (LE), specifically the quadriceps muscle however more research is looking at the hip musculature as well. We often find weakness in the hip abductors and external rotators contributing to the knee pain. These muscles help control the alignment of the lower extremity, especially the knee, in activities. If the hip abductors and external rotators are not strong, the hip and femur will go into adduction and internal rotation which puts more stress on the medial (inside) and anterior knee. Hip musculature controlling LE alignment is extremely important in single leg activities, running, walking, and stairs.

An eight week research study recently compared strengthening the hip musculature first in patients with knee pain versus strengthening the quadriceps musculature first. The study had patients in each group perform isolated exercises for four weeks. The hip group performed isolated hip strengthening exercises while the quadriceps group performed quad strengthening only. Then, the second four weeks of the study, both groups performed functional exercises that combined hip and quadriceps strengthening. It was found that those that did the hip strengthening first had better outcomes with reduction of pain and improved function. When tested at the 4 week mark, the hip group had significant improvement in pain levels while the quad group did not. At the end of 8 weeks, both groups had improvement but the hip group had more improvement. The researchers think that the hip group may have had better outcomes due to the hip strengthening better preparing the knee for functional activities. It is also believed that the quadriceps exercises may have irritated the knee more initially, while the hip group allowed the knee to rest as such and calm down.

In summary, if you are experiencing knee pain associated with walking, running, hiking, and stairs for example you may benefit from strengthening the hip musculature first. At LoHi PT we would help you with your knee issues and direct you in proper exercises so that you can get back to pain free activities. If you knee pain is associated with running, we can also look at your running form with video analysis and give you feedback on form and exercises for eliminating pain and preventing further injury.

Hip Strengthening Prior to Functional Exercises Reduces Pain Sooner Than Quadriceps Strengthening in Females with Patellofemoral Pain Syndrome: A Randomized Clinical Trial. *Journal of Orthopaedic & Sports Physical Therapy*, vol 41, no 8, Aug 2011 pg 560-570.

Knee Pain *Strengthen My Hips? But Its My Knees That Hurt!* *Journal of Orthopaedic & Sports Physical Therapy*, vol 41, no 8, Aug 2011, pg 571.