Barefoot Running

Two of the most common running injuries are patellofemoral pain syndrome (PFPS) and iliotibial band syndrome (ITBS), both causing pain around the knee. There is growing evidence for the role of hip movements in both the causation and successful treatment of PFPS and ITBS. A greater degree of hip adduction and/or hip internal rotation during running has the effect of the distal femur moving “inwards” toward the midline during the stance phase of running when the leg is supporting the body’s weight. When excessive, this movement may increase strain on the ITB and affect the movement of the patella over the femur, leading to pain.

Strengthening the hip muscles (especially the gluteals) or teaching the runner to control the “moving in” of the knee during running and other activities have proved effective in studies aimed at treating both PFPS and ITBS. “Gait retraining” has gained in popularity for treating both of these conditions as well. Changes to foot strike pattern and stride length/cadence are also sometimes advocated.

In a recent study, it was examined if something very simple— running without shoes— would bring about changes in kinematics (how a joint moves) at the hip; and thus potentially modify a risk factor for knee injury. When running barefoot, the participants took shorter strides and landed more toward the forefoot, with less flexion at the knee than they did in shoes. This agrees with the findings of other researchers. Most interestingly, hip adduction and hip internal rotation, along with contralateral pelvic drop, were significantly reduced at foot strike and at 10 percent of stance (corresponding to the vertical impact peak) when running barefoot compared to with shoes.

Full-time barefoot running is not always practical and carries risks for runners used to running with shoes. However, barefoot running could be incorporated as a training tool to encourage good form that prevents knee injuries or as a treatment and rehab tool for runners recovering from PFPS or ITBS. It also may serve as an adjunct to gait retraining programs, where reducing hip adduction and internal rotation are treatment goals.

Please contact us with any questions.