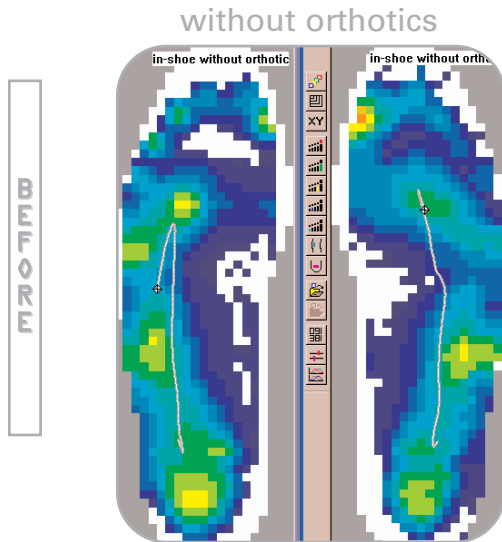


Using F-Scan® to Treat Non-Specific Hip and Leg Pain

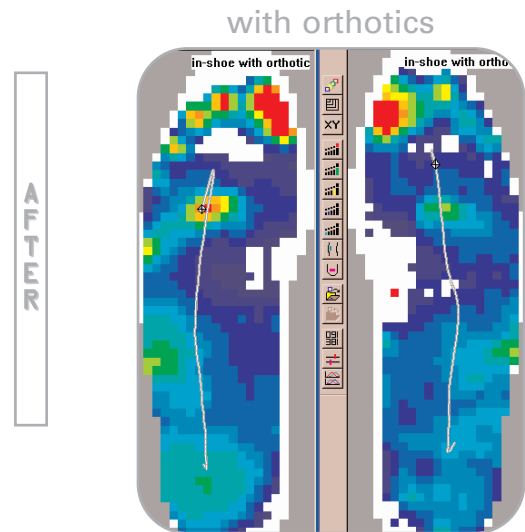
by Bruce E. Williams, DPM

A runner in his 40's presented with complaints of chronic hamstring, piriformis, and iliotibial band pain on the left side. The patient, a podiatrist himself, had self-modified his custom foot orthotics several times without success. He then presented himself for F-Scan analysis on his foot function and gait and digital video analysis. With the use of heat molded custom temporary foot orthotics, several tests were performed to modify and reduce (improve) the patient's asymmetric gait.

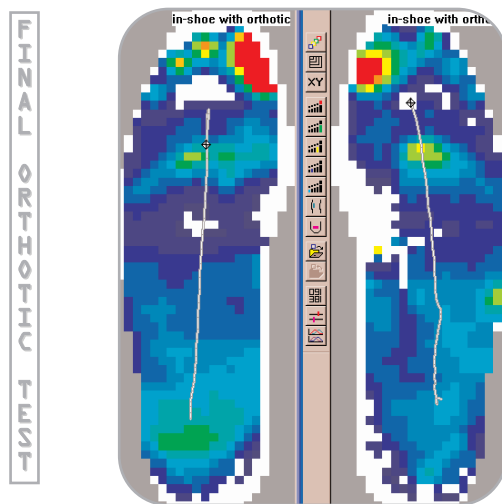
Patient with chronic hamstring, piriformis and iliotibial band pain



Above are the F-Scan pressure profiles with no orthotics. Note the lack of sub 1st metatarsal head pressures, a lateral deviation in the center of force (CoF) trajectory (gray line), and a large pressure at base of the 4th-5th metatarsals and cuboidal area. These pressures show an indication of mid-tarsal joint (MTJ) collapse.



Above are the pressure profiles for the patient wearing temporary orthotic devices, with a moderate sized 1st ray cutout bilateral. Notice now a more midline position in the trajectory for the CoF, and a decrease in the pressures under the lateral column.



Above are the pressure profiles for the temporary devices having a prescription of a moderate sized 1st ray cutout bilateral, and a composite right heel lift with 1/16" and a 1/16" korex. The PPT is used to slow down the accelerations of the right foot to bring them closer in line to the left foot. Note the improved CoF trajectories and improved pressures bilateral.

SUMMARY

Per the final modification (at left), you can see the equalization of the foot pressures bilateral. The 1st ray cutouts brought a more midline position to the CoF by decreasing loading force under the 1st ray due to increased dorsiflexion. This now enables the 1st metatarsal phalangeal joint (mpj) to dorsiflex, eliminating the functional hallux limitus. Eliminating this functional limitus also decreased the need for the MTJ to pronate, for the forefoot no longer needs to dorsiflex about the rearfoot, since the foot can now effectively rotate through the 1st mpj. Finally, prescribing a proper sized heel lift helped to balance the accelerations of both feet by adding a proprioceptive aid to the functionally short limb as it lifts the heel early. Now that the body is lead into thinking that the heel is on the ground, fewer compensations are necessary. Consequently, the patient's non-specific hip and leg pain drastically decreased.