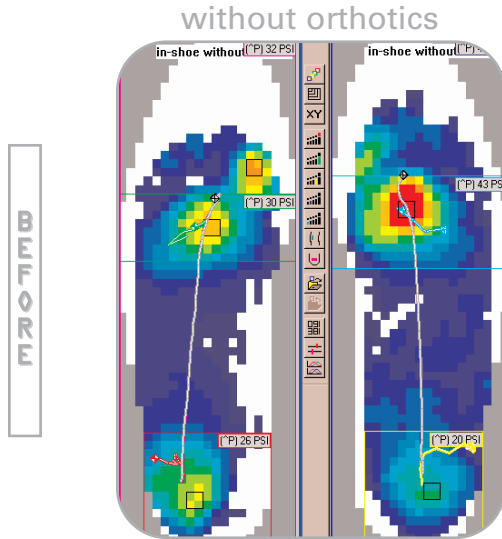


# Using F-Scan® to Treat Chronic Ankle Pain Following Multiple Knee Replacements

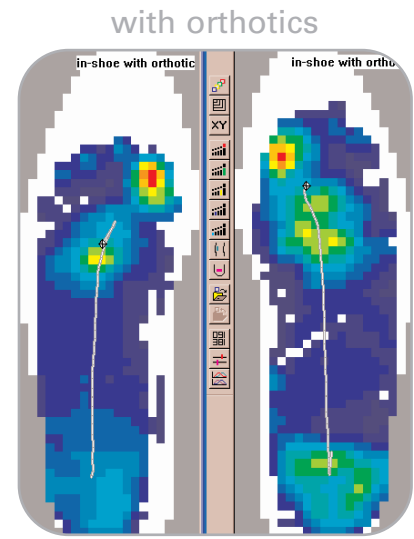
by Bruce E. Williams, DPM

The patient presents the primary complaint of chronic ankle and foot pain. The patient has had multiple knee replacements secondary to a blood disorder that causes chronic osteoarthritis. The patient has had treatment failure with multiple braces for his ankles. He also suffers from chronic low back pain and the beginnings of chronic hip pain. The patient also had a 1st metatarsal phalangeal joint (mpj) fusion on the left foot due to chronic structural hallux limitus.

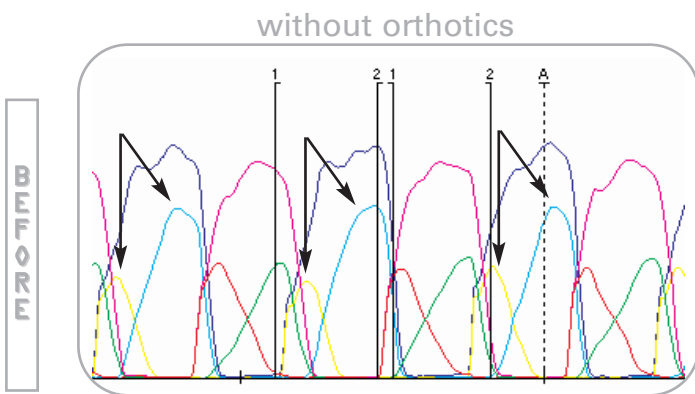
## F-Scan pressure profiles and Force vs. Time graphs for the total force on the foot and forces at rearfoot during heel contact and at forefoot contact



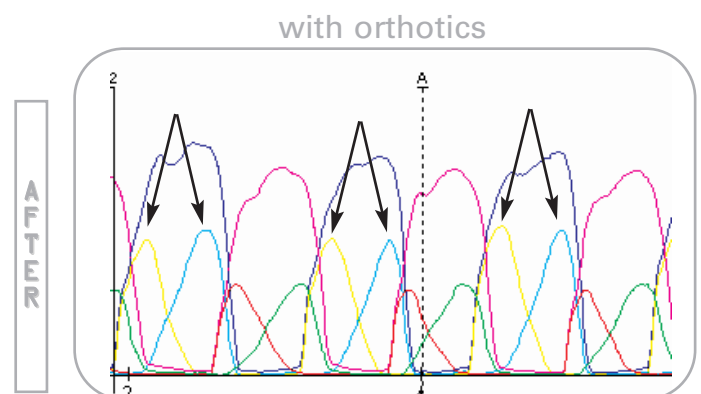
Above are the F-Scan pressure profiles of the patient with no orthotics. The patient has no motion in the right 1st mpj, but has available 1st ray motion. He has a functional hallux limitus on the right with a significant structural limb length difference. His Center of Force (CoF) progression (gray line) is mostly midline bilateral, and he has little sub 1st mpj pressure left vs. right.



Above is the patient with orthotics. The prescription is a moderate 1st mpj cutout bilateral and a 3/8" heel lift on the right. Notice the decrease of the metatarsal pressures bilateral and the more symmetrical hallux pressures bilateral. The CoF progression has not significantly changed.



Above are the Force vs. Time curves with no orthotics. The highest blue curve is for the right foot, the highest pink curve is for the left foot. The low red curve is for left heel strike and the low yellow graph is the right heel strike. Notice the clear asymmetry (arrows on graphs) between the right forefoot aqua curve and the lower heel (yellow curve) force.



Above are the Force vs. Time curves with the orthotics. The right has a moderate 1st ray c/o and a 3/8" heel lift. Notice now the much more symmetrical curves right vs. left (arrows on graphs). See how the addition of the 3/8" heel lift right has equalized the forefoot and rearfoot forces on the right (yellow-heel and aqua-forefoot). The patient has improved symmetry of function with elimination of his chronic ankle pain.