Immediate Relief, Long Term Benefits

Osteoarthritis in the Varus Knee

Open Chain, Closed Chain: Facilitation, Load Redirection, Rehabilitation with integration of O.C.S.I. Knee and Biomechanical Foot bracing.

Offer your OA Medial Knee patients immediate pain relief along with significant long term functionality.

- Dramatically reduce pain in the first few steps by off loading medial knee compartment.
- Immediately improve open chain gait biomechanics at the knee and promote quadriceps development with patented knee extension assist.
- Ensure long term rehabilitative effects without the potential barrier of patient non-compliance by using bracing to facilitate efficient function.

Ongoing Care Solutions Inc.
OCSI

Further stimulate proprioceptive feedback response and decrease medial knee compartment compression by pronating the foot into a medially loaded posture.

Valgus canted foot orthoses inserted into your OA patient's shoes will:

- promote internal tibial rotation / knee flexion during loading response.
- reduce varus knee thrust peak shock (lever moment).
- maintain pronated posture through mid-stance, reducing pain.

Get an Ortho-Pro™ OA-LP™ Knee Brace and Custom Foot Orthosis sized specifically for your patient only from:

BIOMECHANICAL
SERVICES
1050 W. Central Ave, Suite D, Brea, CA 92821
714-990-5932 Toll Free: 800-942-2272 Fax: 714-990-4060
www.biomechanical.com

BIOMECHANICAL
SERVICES

Offering a unique protocol for treating OA in the varus knee.

Using valgus canted foot orthoses to promote sub-talar pronation during loading response has been utilized by physical medicine practitioners for several years, to relieve knee pain in patients with medial knee compartment symptoms secondary to advancing OA. This orthotic application promotes internal tibial rotation and knee flexion during loading response, which redirects GRF sufficiently enough to reduce excessive compressive loads in the medial knee. Recently, independent studies have substantiated this approach to reducing joint moment loading.

Now that utilizing a foot orthosis to redirect forces and retrain sensory motor responses in gait have proven effective, applying foot orthoses to inhibit OA progression by unloading the joint and promoting efficient gait has become an acceptable protocol.

Studies suggesting using foot orthoses to redirect forces across the varus knee are effective:

Wimmer MA, Thorp LE, Foucher KC, et al. **Effect of lateral wedged orthoses on external knee adduction moments in medial knee OA – a long-term study.** Arthritis Rheum 2008;58(Suppl):Abstract 197:S240. "For those that did complete a multi-year intervention, there was a statistically significant reduction in the loads at the medial knee and reduction in pain."

Hillstrom HJ, Brower DJ, et al., **Assessment of Conservative Realignment Therapies for the Treatment of Varus Knee Osteoarthritis.** Gait & Posture, 11(2): 170-171, 2000. "Results indicate that valgus knee bracing, (Unloader), and neutral position foot orthoses, significantly improve lower extremity biomechanics during gait, ADLs and pain assessments in varus knee OA patients."

OCSI, OrthoPro™ OA-LP ™ Knee Brace

HCPCS Code - L1845

Relieves pain while correcting gait. The patented dynamic Swing Assist™ facilitates a proper heel/toe gait pattern, promoting quadricep development in patients who had altered their gait to avoid medial compartment loading. A unique adjustable pneumatic bladder system unloads the knee joint, relieving pain, while providing exceptional support and stability. The cuff and strapping system dynamically adjusts to dimensional changes of the leg during activities, eliminating brace migration.

Studies suggesting the use of "off loading" knee braces to redirect forces across the varus knee are effective:

Fabian E. Pollo, PhD and Robert W. Jackson, MD. **Knee Bracing for Unicompartmental Osteoarthritis**, American Academy of Orthopaedic Surgeons, 2006. "Although changes in angulation are relatively minimal, the braces have been shown to load share and thus reduce the stresses in the degenerated medial compartment of the knee."

Horlick, SG, Loomer, RL **Valgus Knee Bracing for Medial Gonarthrosis.** Clinical Journal of Sports Medicine, 3:251-255, 1993. "Results indicate that valgus bracing, using the Generation II Unloader, can be a useful treatment modality for reducing pain in patients with medial gonarthrosis."

Combining foot orthoses and knee bracing to redirect forces across the varus knee:

While there are limited studies that directly corolate integrated use of "off loading" knee braces with the application of valgus angled foot orthoses to reduce loads across the medial compartment of the varus knee, a coherant rational is easily developed by routine review of the available literature. Given the ease of donning and doffing both bracing applications, benefits from either or both can be easily self selected by the patient and/or managed effectively by physical medicine practitioners.

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