

CONSERVATIVE MANAGEMENT OF THE OSTEOARTHRITIC ANKLE: AN ALTERNATIVE TO ARTHRODESIS

- Ankle-Foot-Orthoses (AFOs) have a wide variety of use beyond the treatment of drop-foot.
- OA ankle treatment is conservatively managed with a rigid ground-reaction-force AFO and motion control shoe
- Results are often dramatic and liberating for the patient.

Osteoarthritis of the **ankle joint** (talocrural) is a common debilitating condition that often presents with painful weight bearing particularly during tibial advancement beyond mid-stance. Subsequently, patients with ankle OA have **significant problems with ambulation**. The cause of OA itself is often secondary to previous trauma to the area such as a fracture or severe soft tissue injury.

The use of a **custom AFO** in combination with a **motion control shoe** has proven to be a very effective method of symptomatic treatment and likely prevention of further degradation with regular use. AFOs are commonly used as a treatment of symptomatic drop-foot yet are overlooked as treatment options for conditions like ankle OA or any condition that requires limitations to ankle or sub-talar joint motion.

Other common pathologies to consider in this realm of use are anterior/lateral compartment syndrome, painful arthrodesis of the ankle or

subtalar joint, or manipulation of knee position, (i.e. weak quadriceps or prevention of genu-recurvatum).

In the case of ankle OA, the biomechanical goal is to limit and/or **eliminate the range of motion that causes pain**. This is often during weight bearing. In **severe cases**, the most successful design points to a rigid (dorsiflexion stop) **custom made AFO that blocks necessary motion and transfers ankle dorsiflexion moments to the knee rather than the ankle joint itself**.

The caveat to its use however, is the 'choppy' gait result; much like walking in a ski boot. To eliminate this problem, a carefully crafted **rocker bottom sole** will maintain the ground reaction force alignment through the ankle and knee centers at all phases of stance, thereby eliminating the flexion and extension moments that would otherwise act on the ankle and knee. Instantly the patient can take longer, smoother steps that are less energy taxing. Subsequently however, a leg length discrepancy has been created and must be accommodated on the contralateral side.

Patients regularly report an **elimination of pain with this treatment combination**. Observable gait improvements include longer stride length and increased velocity. Holistically, the OA patient is able to regain a lifestyle that is more active and subsequently healthier.

The use of AFOs in this manner is not new, but tends to get overlooked as a treatment for many conditions like ankle OA. It is the biomechanics that deal with the manipulation of moments of force and ground reaction forces that certified orthotists are well trained to understand and apply successfully.



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