

C-Brace

Ruling out Less Costly Devices

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Locked Knee-Ankle-Foot-Orthosis (LKAFO)

Locked knee-ankle-foot-orthoses (LKAFO) are often prescribed for patients with paralysis or paresis. The problem is that they only work well on level terrain and the user has to swing the braced limb in a circular motion (“circumduction”) and hike the hip in order to clear the foot. Walking in this fashion consumes a great amount of energy and wears on the hip joint. LKAFOs are mostly used for ambulating in the home and do not provide the potential for safe, physiological gait in the community, at work, during exercise, or for other daily activities. That is because LKAFOs cannot be used in a reciprocal manner on uneven terrain, ramps or stairs due to the knee being locked. It is also difficult to transfer from standing to a sitting position or back to standing. Bilateral patients using LKAFO generally require crutches for balance, which are not suitable for longterm use and are known to cause injuries (e.g. carpal tunnel syndrome, compressive neuropathy) causing severe pain to hands, arms and shoulders.

Stance Control Orthosis (SCO)

Similar to LKAFOs, stance control orthoses do not provide safe walking on ramps or stairs and bilateral patients generally require crutches for balance, which are not suitable for longterm use and are known to cause injuries (e.g. carpal tunnel syndrome, compressive neuropathy) causing severe pain to hands, arms and shoulders.

C-Brace Microprocessor Stance and Swing Phase Controlled Hydraulic KAFO

The C-Brace’s technology is based on the C-Leg microprocessor controlled prosthetic knee. It is the only orthosis currently on the market that has microprocessor-controlled stance and swing phase. The C-Brace is a passive orthosis and not powered by actuators (motors). The C-Brace monitors the gait cycle in real time and automatically adjusts resistance to prepare for the next movement to provide the potential for a safe and physiologic gait. This allows patients to walk with more ease and less concentration. Additionally, users experience less sound side compensation and stress as well as potential complications. Unlike locked KAFOs and SCOs, the C-Brace allows for safe navigation of uneven terrain, descension of stairs and ramps, and the potential to recover from a stumble.