C-Brace Orthotronic Mobility System
You’ll always remember your first step
Incomplete paraplegia meant Christin was in a wheelchair for 4 years. Now, after therapy and using the C-Brace, she is enjoying life upright.

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Orthotics reinvented

Until now, you and your patients with conditions like incomplete spinal cord injury, weakness or paresis of the quadriceps, and post-polio syndrome have had very few KAFO device options. Now, instead of settling for a locking brace, you can fit the Ottobock C-Brace® system.

Among the many benefits, patients most value the ability to change speeds, to walk with controlled knee flexion, and to move more efficiently. In daily life, that means a walk in the park can be just that. Patients can trust their knees to support them on all types of terrain, and they can spend their energy and attention enjoying the day.

This dramatic increase in function is possible through real-time gait analysis and goes far beyond simply locking and unlocking the knee joint. Patients experience support throughout the gait cycle as the system automatically adjusts to prepare for the next movement.

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Key features and benefits

**Stumble Control:** For improved safety, resistance to uncontrolled knee flexion when sensors read a moment of instability gives the time necessary to recover.

**Real-Time Gait Analysis:** Every phase of the gait cycle is controlled dynamically and in real time, allowing the patient to walk with more ease and with less compensation of the sound side and torso.

**Standing and 2nd Mode:** Additional modes allow for comfortable static standing and additional settings (for therapy or other activities).

**Stance Extension Damping:** Progressive resistance allows natural movement to occur without uncontrolled and early knee and hip extension at terminal stance, resulting in a more natural movement without abrupt changes to the center of gravity, lower back, and lower limb joints.

**Stance Flexion Damping:** Controlled, partial knee flexion while weight bearing allows the patient to exhibit knee control when walking down hills and ramps, descending stairs step over step, and while sitting down into a chair.
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Seizing new opportunities

**Who benefits from orthotronic technology?**

Combining real-time gait analysis, the energy redistributing properties of carbon fiber, and the ability to use software to customize the knee joint’s response creates the ideal situation for your patient. The system doesn’t walk for your patient — it helps normalize gait, freeing your patient to ambulate to his or her full potential.

Everyday life demands the ability to walk on uneven ground, descend stairs and ramps, and tackle slopes. Depending on your patient’s abilities, all of these obstacles may be overcome — with less energy expenditure and concentration — all while reducing wear and tear on the sound side.
**Indications**

The C-Brace orthotronic mobility system can be considered for all neurological indications of the lower limbs. The primary indications include:

- Lower limb involvement with weakness or paresis of the quadriceps muscles or the inability to maintain knee extension during stance phase; e.g., incomplete paraplegia with segmental levels of L1 to L5, polio, post-polio syndrome, or MS.

**Contraindications**

- Moderate to severe lower limb spasticity
- Hip flexor strength of less than grade 3. Ability to advance the limb by compensatory trunk movement is permitted
- Fixed knee valgus greater than 10 degrees beyond anatomic neutral
- Fixed knee varus
- Less than 2 degrees of relative ankle dorsiflexion
- Body weight over 275 lbs (125 kg)
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Stable walking

Game-changing science

C-Brace is the first in a new class of devices called orthotronic mobility systems. Orthotronics is the synergy created by applying mechatronics (mechanical, electronic, computer, systems design, and other engineering disciplines) to the field of custom orthotics. The C-Brace® is the first system available to utilize this revolutionary approach to dramatically improve patient outcomes and safety.

By assessing the patient’s activities in real time, the system is able to manage every phase of gait, on any terrain, and deliver unmatched stability and responsiveness.

Constant, real-time measurements:

- Knee angle
  - Direction and velocity
  - Acceleration and deceleration
- Ankle flexion/extension
  - Increasing/decreasing
Phases of gait: How your patient is freed to walk

1. Initial contact
2. Load response
3. Mid-stance
4. Terminal stance
5. Pre-swing
6. Initial swing
7. Mid-swing
8. Terminal swing

Walking with the C-Brace®

1. Stance phase flexion damping: controlled stance phase damping supports the knee extending musculature upon heel strike
2. Stance phase flexion damping plus/time: additional damping option that supports the musculature as needed upon increased load transfer. Time limit on additional stance phase damping
3. Stance phase extension damping: knee extension damping in the stance phase for a natural, smooth movement of the knee joint
4. Maximum toe load: definition of the safe switching point to trigger the swing phase
5. Swing phase initial flexion damping: switching to minimum resistance for optimum initiation of the swing phase
6. Swing phase knee angle threshold/swing phase dynamic factor: controls the end of swing phase flexion for an optimized gait pattern
7. Swing phase extension resistance: switching to minimum resistance during swing phase extension
8. Swing phase extension damping: final swing phase extension damping for a soft braking movement at changing walking speeds

To provide optimum support, it is key to make software and other adjustments at the time of fitting, then follow up in 4-8 weeks to make further adjustments as your patient readjusts to a more efficient gait cycle.
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Learn more

Contact your sales representative for details about how to get the required training to fit and purchase a C-Brace®. Your sales representative can tell you how C-Brace can expand your business and raise your professional profile, and benefit your patients through improved function and outcomes. Visit www.ottobockus.com for more specifications and other details.