

Evidence Essentials

C-Brace Microprocessor Stance and Swing Control Orthosis

	Mobility need or deficit of the patient	Evidence for benefits of the C-Brace vs. locked KAFO and SCO
Safety	Patient stumbles and falls repeatedly	<ul style="list-style-type: none"> - Significant improvement in balance (Berg Balance Scale) compared to locked KAFO and SCO (Ruetz et al., 2023; Deems-Dluhy et al., 2021; Deems-Dluhy et al., 2017) - Up to 78% reduction in falls (Ruetz et al., 2023; Deems-Dluhy et al., 2021; Deems-Dluhy et al., 2017) - Significant reduction in risk of falling (Activity Specific Balance Confidence Scale) (Ruetz et al., 2023) - Significant reduction in fear of falling, 33% reduction indoors and 59% outdoors (Ruetz et al., 2023) - More than 50% reduction in the number of subjects falling more than once (Ruetz et al., 2023) - Nearly physiologic knee swing flexion (important for sufficient toe clearance) (Schmalz et al. 2016) - Reduction in walking aids (Schmalz et al., 2016; Hobusch et al., 2018)
Mobility	Patient feels limited or restricted in his/her mobility by current locked KAFO or SCO	<ul style="list-style-type: none"> - Significant improvement in self-selected walking speed and walking capability (distance walked in the 6 min walk test) (Deems-Dluhy et al., 2021; Hobusch et al., 2018) - Significant improvement in Functional Gait Assessment (FGA) and Dynamic Gait Index (DGI) compared to locked KAFO and SCO (Ruetz et al., 2023 [DGI]; Deems-Dluhy et al., 2021; Deems-Dluhy et al., 2017 [FGA])

		- Significant improvement in patient-reported overall orthotic function, ambulation, paretic limb and well-being as measured with the modified PEQ (Pröbsting et al., 2017)
Mobility	Patient feels limited or restricted in performing activities of daily living with the current locked KAFO or SCO	- Significant improvement in patient-reported safety and ease of performing ADLs (Pröbsting et al., 2017)
Mobility	Patient has difficulty descending slopes and stairs	- Significant improvement in the quality of slope and stair descent (Ruetz et al., 2023; Deems-Dluhy et al., 2021; Deems-Dluhy et al., 2017 [stairs only]; Schmalz et al., 2016 [slopes and stairs])
Mobility	Patient has physical limitations at work	- Significant reduction of 30% in Work Limitations Questionnaire WLQ-25 Physical score compared to locked KAFO or SCO (Ruetz et al., 2023)
Quality of life	Patient reports reduced quality of life while using a locked KAFO or SCO	- Significant improvement in 5/9 domains of SF-36 including a 50% improvement in Physical Functioning and 20% in Health Change compared to locked KAFO or SCO (Ruetz et al., 2023) - Significant improvement in quality of life as assessed by the OPUS and WHOQOL-BREF (Ruetz et al., 2023 [OPUS only]; Deems-Dluhy et al., 2021)

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