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C-Leg.
Main clinical takeaways.

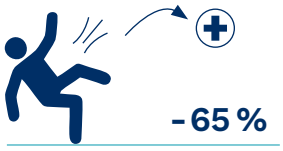
Information for professionals

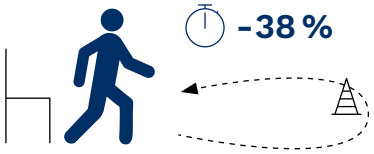
Main clinical takeaways.

More than 70 clinical studies, reports, and reviews investigated the ***C-Leg*** microprocessor controlled prosthetic knee. Compared with non-microprocessor knees (NMPKs), the ***C-Leg*** was shown to enhance safety, improve mobility, and increase patient confidence and satisfaction. The following paragraphs outline the clinical proven outcomes for ***C-Leg*** use compared to (NMPKs).

Safety.

Nearly 9 out of 10 ***C-Leg*** users reported reduced fear of falling. This confidence is well placed, considering ***C-Leg*** users experience up to 59 % fewer stumbles, up to 80 % fewer falls, and are up to 65 % less likely to be injured by a fall.

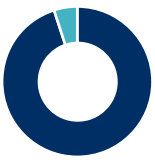
Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient stumbles repeatedly	• Reduced number of stumbles [2, 12]  Number of stumbles: **Up to 59 % less stumbles**
Patient falls repeatedly	• Reduced falls [1–4, 7, 12]  Number of falls: **Up to 80 % reduction in falls**
Patients stumbles and falls repeatedly and has fear of falling	• Reduced injurious falls with ***C-Leg*** [13]  Injurious falls: **Up to 65 % reduction in users with injurious falls, *C-Leg* was the best of the 4 MPKs tested**

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patients stumbles and falls repeatedly and has fear of falling	• Significant improvements in balance and indicators for a reduced risk of falling, such as TUG, ABC, forces pertubations in gait lab [3, 10, 14]  Risk of falls: **Up to 38 % reduction in completion time for the TUG**  Balance and risk of falls: **Up to 52 % increased Activity specific Balance Confidence scores** • Decreased fear of falling [6, 14]  Fear of falling: **Up to 89 % of subjects reported decreased fear of falling**

Functions and activities – level walking, stairs and ramps.

Compared to NMPKs, ***C-Leg*** users walk up to 25 % faster on level ground, up to 21 % faster on uneven ground, and up to 40 % faster descending ramps. Most ***C-Leg*** users (95 %) improved their overall gait symmetry and 67 % of users showed improvements in the quality of stair descending.

Level walking

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient has limited mobility	• Increased mobility level [1–4]  Mobility grade: **Up to 50 % of subjects improved to MG3 from MG2 with MPKs (including *C-Leg*)**  Mobility grade: **Up to 22 % of subjects improved to MG4 from MG3 with MPKs (including *C-Leg*)**
	• Improved walking velocity [2–4]  Walking speed level ground: **Up to 25 % faster walking speed on level ground** • Up to **14%** increase in walking distance during 2-min walking test in MFCL2 subjects [5]
Patient has gait asymmetry	• Improved gait symmetry [6]  Gait pattern: **Up to 95 % of subjects improved gait symmetry**

Stairs

Mobility needs or deficient of the patient	Evidence for benefits of the *C-Leg* compared to NMPKs
Patient has difficulties descending stairs with reciprocal gait (step-over-step)	• Improved mobility [1] and quality of stair descent [1–3, 7, 8]   Quality stair descent: **Up to 67 % of subjects improved their stair descent quality** **Improvements in quality of stair descent towards natural reciprocal gait pattern** (from step-to to step-over-step)

Ramps

Mobility needs or deficient of the patient	Evidence for benefits of the *C-Leg* compared to NMPKs
Patient has difficulties negotiating slopes/hills	• Improved walking velocity on ramps [1, 3, 7, 9, 10]  Walking speed ramp: **Up to 40 % faster walking speed for ramp descent**

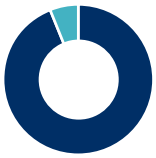
Uneven Terrain/ Obstacles

Mobility needs or deficient of the patient	Evidence for benefits of the *C-Leg* compared to NMPKs
Patient has difficulties negotiating uneven terrain and obstacles	• Improved walking velocity on uneven ground [2, 3, 7, 11]  Velocities uneven ground: **Up to 21 % faster walking speed on uneven ground**

Functions and activities – cognitive demand and energy.

With ***C-Leg***, most users (94 %) reported increased capability for divided attention and up to 88 % of users experienced less effort during walking.

Cognitive demand

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient has difficulties with dual task while walking	• Improved multitasking while walking [6]  Multitasking: **Up to 94% of users reported increased capability to divide attention while walking** • Up to **28%** decreased difficulty of multitasking [7] • Less cortical brain activity while walking with MPK (including ***C-Leg***) [15]

Energy

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient has limitations with walking effort and energy consumption	• Reduced walking effort [6]  Walking effort: **Up to 88 % of *C-Leg* users reported reduced walking effort** • Up to **7 %** reduced oxygen consumption with various speeds (slow, medium and fast walking speed) [11, 16, 17]

Functions and activities – activity, mobility and ADLs.

Up to 23 % of the ***C-Leg*** users reported a reduced use of walking aids.
Further ***C-Leg*** users were able to complete ADLs 11 % faster and improved the performance by 33 %.

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient needs walking aids	• Up to **23 %** of subjects reported reduction in walking aid use [6]
Difficulties with performing activities of daily living	• Up to **11 %** decreased time needed to complete ADLs including standing [18] • Up to **33 %** improved performance in ADLs (including standing, sitting down ...) [3, 18]

Participation – preference and satisfaction.

The ***C-Leg*** was preferred by 90 % of users over NMPKs.

Mobility needs or deficient of the patient	**Evidence for benefits of the *C-Leg* compared to NMPKs**
Patient is not satisfied with fitting	• Up to **38 %** increased Prosthetic Evaluation Questionaire (PEQ) satisfaction score in MFCL3 and up to 21 % improved in MFCL2 [1] • Increased preference for ***C-Leg*** [7, 18–20]

Preference:
Up to 90 % of subjects prefer *C-Leg* over NMPKs

More details can be found
in the study summaries

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