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# Ottobock MPKs. Clinically proven.

The world's most extensively studied and clinically proven microprocessor knees include *C-Leg*, the most researched, *Kenevo* with clinically proven safety for lower mobility, and the *Genium* family with the new *Genium X4*, bringing prosthetic gait closer to natural movement than ever. The Ottobock MPKs support all user groups from K2 to K4, delivering tailored benefits and setting new standards for safety, independence, and empowerment.

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## Clinically proven.

- Up to 80 % reduction in falls (1-7)
- Up to 65 % reduction in users with injurious falls, *C-Leg* was the best of the 4 MPKs tested <sup>(8)</sup>
- Up to **50 %** chance to improve mobility from MG2 to MG3 (1,2,6,7)

- Up to 38 % higher downhill/slope-descent walking speed (2,4,7,9)
- Up to **25 %**higher overground walking speed (1,2,9)
- Up to 20 % higher walking speed on uneven ground (2,6,10)

Statistics above are for *Kenevo* and *C-Leg* vs non-MPKs. 675 of the total 704 patients who participated in K2 MPK studies were treated with Ottobock-MPKs K2 studies. Out of over 100 MPK studies with K3 patients, over 80% were conducted with Ottobock MPKs.

- •100 % of users preferred Genium X4 (11)
- Up to **50 %** of users reported less exertion when walking with *Genium X4* (11)
- 50 % of users found Genium X4 superior for walking up stairs and down ramps (11)

Users reported

# clinically relevant improvement

with Genium X4 in many ADLs (11)

Statistics above are for **Genium X4** vs. **Genium X3/Genium**. 8 patients were tested with the **Genium X4**. (publication in preparation)

#### References

- 1 Hahn A, Bueschges S, Prager M, Kannenberg A. The effect of microprocessor controlled exo-prosthetic knees on limited community ambulators: systematic review and meta-analysis. Disabil Rehabil 2021 Oct 25:1-19..
- 2 Kannenberg A, Zacharias B, Pröbsting E. Benefits of microprocessor prosthetic knees to limited community ambulators: A systematic review. J Rehabil Res Dev 2014;51(10):1469-1495.
- 3 Highsmith MJ, Kahle JT, Bongiorni DR, Sutton BS, Groer S, Kaufman KR. Safety, energy efficiency, and cost efficacy of the C-leg for transfemoral amputees. Prosth Orthot Int 2010;34(4):362-377.
- 4 Hafner BJ, Smith DG. Differences in function and safety between Medicare Functional Classification Level-2 and -3 transfemoral amputees and influence of prosthetic knee joint control. J Rehabil Res Dev 2009;46(3):417-434.
- 5 Blumentritt S, Schmalz T, Jarasch R. The safety of C-leg: Biomechanical tests. J Prosthet Orthot 2009;21(1):2-17.
- 6 Kahle JT, Highsmith MJ, Hubbard SL. Comparison of Non-microprocessor Knee Mechanism versus C-Leg on Prosthesis Evaluation Questionnaire, Stumbles, Falls, Walking Tests, Stair Descent, and Knee Preference; J Rehabil Res Dev 2008:45(1):1-14.

- 7 Hafner BJ, Willingham LL, Buell NC, Allyn KJ, Smith DG: Evaluation of Function, Performance, and Preference as Transfemoral Amputees Transition from Mechanical to Microprocessor Control of the Prosthetic Knee. Arch Phys Med Rehabil 2007;88(2):207-217.
- 8 Campbell JH, Stevens PM, Wurdeman SR. OASIS I. Retrospective analysis of four different microprocessor knee types. Journal Rehabil Assist Technol Eng 2020;7: 1-10.
- 9 Highsmith MJ, Kahle JT, Miro RM, Mengelkoch, MJ. Ramp descent performance with the C-leg and interrater reliability of the Hill Assessment Index. Prosthet Orthot Int 2013;37(5):362-368.
- 10 Seymour R, Engbretson B, Kott K, Ordway N, Brooks G, Crannell J, Hickernell E, Wheller K. Comparison between the C-leg(R) microprocessor-controlled prosthetic knee and non-microprocessor control prosthetic knees: A preliminary study of energy expenditure, obstacle course performance, and quality of life survey. Prosthet Orthot Int 2007;31(1):51 61.
- 11 Publication in preparation.