

ottobock.



Ottobock MPKs. Clinically proven.

The world's most extensively studied and clinically proven microprocessor knees come from Ottobock. From **C-Leg** (the most researched MPK ever), to **Kenevo**, validated for enhanced safety among lower-mobility users, and the new ultimate MPK, **Genium X4**, Ottobock continues to set the benchmark for excellence.

Recognizing that mobility needs are inherently individual, Ottobock follows a sophisticated engineering ethos that is reflected in a portfolio of distinct MPKs tailored to specific user needs rather than a simplified, universal model. The result is high-performance solutions that elevate safety, independence, and the art of human movement.

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** ⁽⁸⁾
- 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. 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, Bongiorno 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.