

Helix^{3D} Hip Joint System vs other prosthetic hip joints

Ramps / Hills

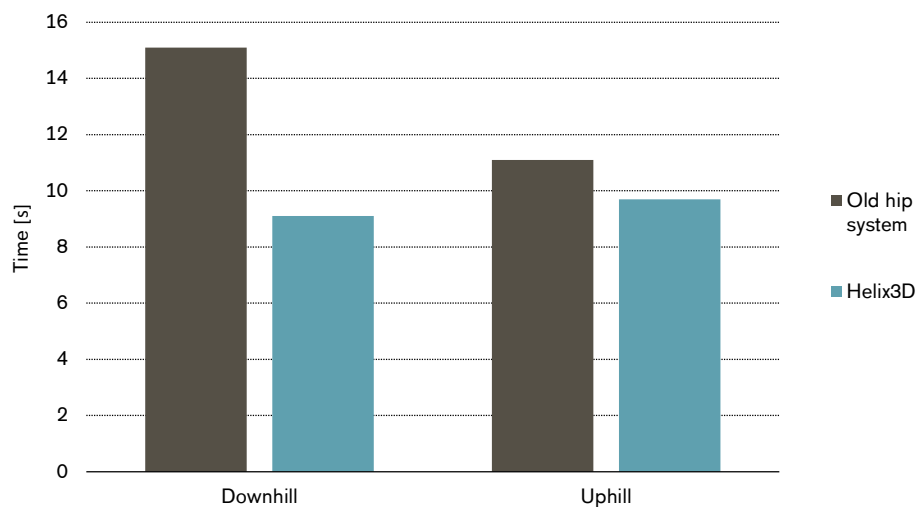
Major Findings

With Helix^{3D} Hip Joint System compared to other hip prostheses:

→ **Increased walking velocity when walking down ramps by 40%**

→ **Trend towards increased walking velocity when walking up ramps by 13%**

Decreased time required to walk up and down ramp with Helix^{3D}



Ludwigs et al. (2013)

Clinical Relevance

Similar to stairs, ramps and hills need to be navigated by amputees with a wide range of activity levels to be able to participate in daily life. Evaluating the time needed to complete a ramp task can be part of a clinical mobility assessment.

Summary

The time required to walk down a ramp decreased by 40% with Helix^{3D} Hip Joint System compared to an old hip system. Furthermore, there was a trend towards decreased time required to walk up a ramp by 13% with Helix^{3D} Hip Joint System. Both of these improvements not only result from the change of the previous hip prosthesis to Helix^{3D} but are also affected by the change from a non-microprocessor controlled knee to C-Leg. The acclimatisation period for Helix^{3D} was determined as the time the subjects need to feel adjusted to the new prosthesis and was around 11 weeks (Ludwigs et al. 2013).

References of summarized studies

Ludwigs, E., Kannenberg, A., & Wüstefeld, D. (2013). Evaluation of the Benefits of a New Prosthetic Hip Joint System in Activities of Daily Function in Patients after Hip Disarticulation or Hemipelvectomy. *Journal of Prosthetics and Orthotics*, 25(3), 118–126.

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