

Reference

Nelson LM, Carbone NT.

Department of Veterans Affairs, Prosthetics and Sensory Aids Service, New York, USA.

Functional Outcome Measurements of a Veteran With a Hip Disarticulation Using a Helix 3D Hip Joint: A Case Report

Journal of Prosthetics and Orthotics 2011; 23(1):21-27.

Products

Helix^{3D} vs 7E7

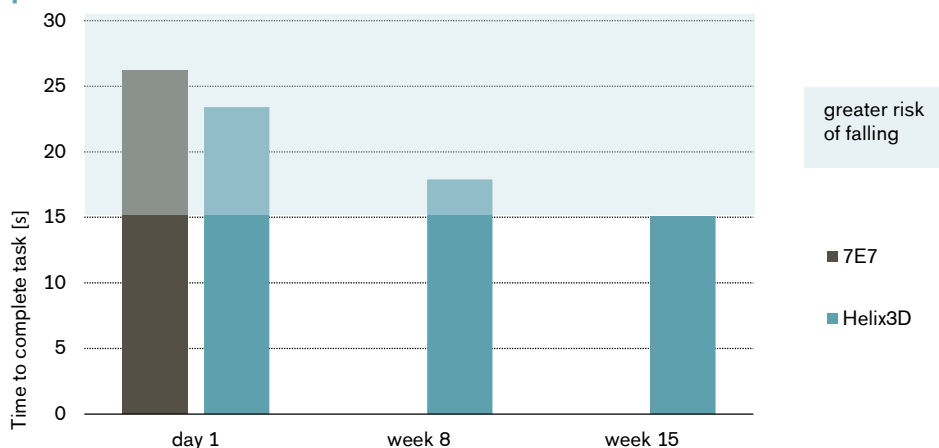
Major Findings

With Helix^{3D} Hip Joint System:

→ **Decreased risk of falling over 15-week time period based on improvements in timed up and go test (TUG) by 35%**

→ **Walking speed increased by 90% compared to 7E7**

Progressively improving time to complete TUG over test period



The timed up and go test (TUG) includes standing up from a chair, walking 3 meters, turning around, walking 3 meters, sitting down.

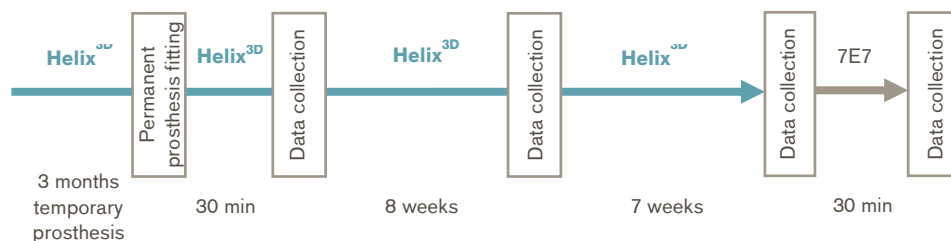
The marked part indicated a greater risk of falling assessed from a healthy geriatric population.

Population

Subjects:	1 unilateral, disarticulated amputee
Previous hip prosthesis:	Helix ^{3D} (temporary prosthesis)
Amputation causes:	gunshot
Mean age:	30 yrs
Mean time since amputation:	6 months
MFCL:	not reported

Study Design

Case study:



Results

Activities								Participation	Environment
Level walking	Stairs	Ramps, Hills	Uneven ground, Obstacles	Cognitive demand	Metabolic energy consumption	Safety	Activity, Mobility, ADLs	Preference, Satisfaction, QoL	Health economics

Category	Outcomes	Results for Helix ^{3D}	Sig.*
Level Walking	Timed up and go (TUG)	Progressively improving test time during the 15-week time period: 23.4 s at the day of prosthesis fitting, 17.9 s at 8 weeks, 15.1 s at 15 weeks. Improved test time (23.4 s) compared to 7E7 (26.2 s) at the day of prosthesis fitting.	n.a.
	2-minute walk test	No changes in distance covered over the 15-week time period: 128.6 m at the day of prosthesis fitting, 125.0 m at 8 weeks, 129.0 m at 15 weeks. Therefore gait speeds of 1.08, 1.04 and 1.07 m/s were reached. Distance covered (128.6 m) was increased by 90% compared to 7E7 (67.6 m) at the day of prosthesis fitting and therefore gait speed improved to 1.08 m/s compared to 0.56 m/s with 7E7.	n.a.

* no difference (0), positive trend (+), negative trend (-), significant (++/--), not applicable (n.a.)

Author's Conclusion

"The veteran with a hip disarticulation in this case report showed improvement in TUG times using the Helix Hip 3D, C-Leg, and Trias foot prosthesis during the 3-month course of physical therapy and prosthetic care. The veteran also ambulated at a speed that has been determined to indicate independence in ADLs, successful community ambulation, and a decrease in the chance of hospitalization when using the Helix Hip 3D prosthesis. As per the functional outcome measures, the veteran did not achieve the same level of functional independence with the trial of the single axis 7E7 hip joint. Future studies should consider measuring gait symmetry through kinematic analysis and energy expenditure while ambulating with the Helix 3D hip joint when compared with a single-axis hip joint." (Nelson & Carbone 2011)

© 2014, Otto Bock HealthCare Products GmbH ("Otto Bock"), All Rights Reserved. This article contains copyrighted material. Wherever possible we give full recognition to the authors. We believe this constitutes a 'fair use' of any such copyrighted material according to Title 17 U.S.C. Section 107 of US Copyright Law. If you wish to use copyrighted material from this site for purposes of your own that go beyond 'fair use', you must obtain permission from the copyright owner. All trademarks, copyrights, or other intellectual property used or referenced herein are the property of their respective owners. The information presented here is in summary form only and intended to provide broad knowledge of products offered. You should consult your physician before purchasing any product(s). Otto Bock disclaims any liability related from medical decisions made based on this article summary.