

# Helix<sup>3D</sup> Hip Joint System vs other prosthetic hip joints

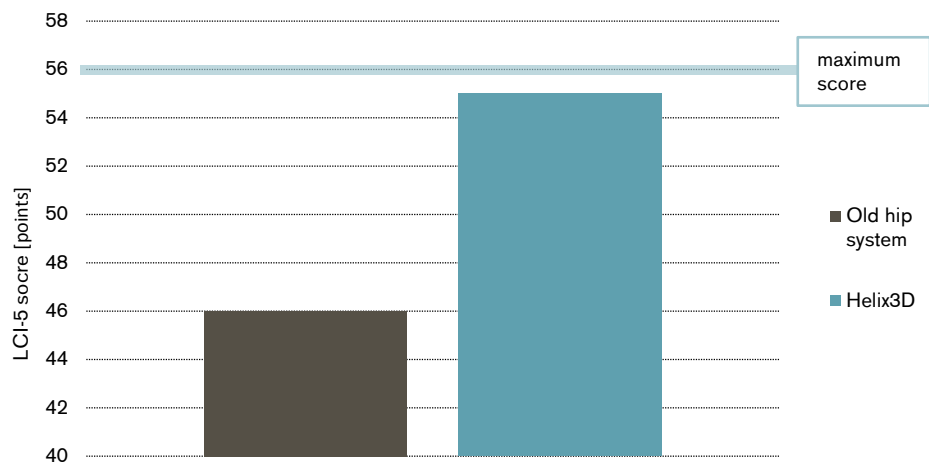
## Activity / Mobility / Activities of daily living (ADLs)

### Major Findings

With Helix<sup>3D</sup> Hip Joint System compared to other prosthetic hip joints:

- **Mobility and independence increased by 20%**
- **74% less subjects dependent on caregivers**
- **43% less subjects need walking aids**
- **Improved walking ability**

### Improved LCI-5 score with Helix<sup>3D</sup>



LCI-5 score assesses the mobility and independence of lower-limb amputees based on 14 activities of daily living (ADLs). The maximum possible score is 56 points. Ludwigs et al. (2013)

### Clinical Relevance

With activities of daily living (ADLs) information is gathered on one hand side about the independency of amputees. Self-care activities and activities to live independently in a community are included in this part. On the other hand side, information about participation is gathered. Furthermore, assessment of ADLs is tool to detect avoidance of activities which can lead to an increase of comorbidities such as obesity and depression.

### Summary

The LCI-5 score improved from 46 points when using an old hip system to 55 points when using Helix<sup>3D</sup>, whereas 56 points represent the maximum possible score. Improvements in the subscore 'advanced ambulation skills' was reported. The subscore 'basic ambulation skills' stayed unchanged. The improvement of mobility and independence was confirmed by further findings: Four out of seven MFCL K2 subjects improved to MFCL K3 and one out of one MFCL K1 subjects improved to MFCL K2 with the use of Helix<sup>3D</sup>. The number of subjects that depend on help from relatives or caregivers was reduced from 4 to 1 out of 13 subjects. Moreover, 4 out of 7 subjects, which depended on a walking aid, showed a reduction in the support of waking aids with Helix<sup>3D</sup> compared to old hip systems. At the one year follow-up, 3 out of 7 subjects showed even a further reduction of the support of walking aids (Ludwigs et al. 2013).

Not only the overall functional assessment specific for the use of a hip prosthesis, but also each of the assessed functions by itself, was rated as improved with Helix<sup>3D</sup> compared to an old hip system. Namely the improved functions are comfort while standing, safety at loading response, ease of initiation of swing phase, walking velocity, safety while standing, reaching the extension stop, and starting to walk from a standing position. In conclusion, the walking ability is improved with C-Leg (Ludwigs et al 2013).

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## 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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