

Genium vs C-Leg

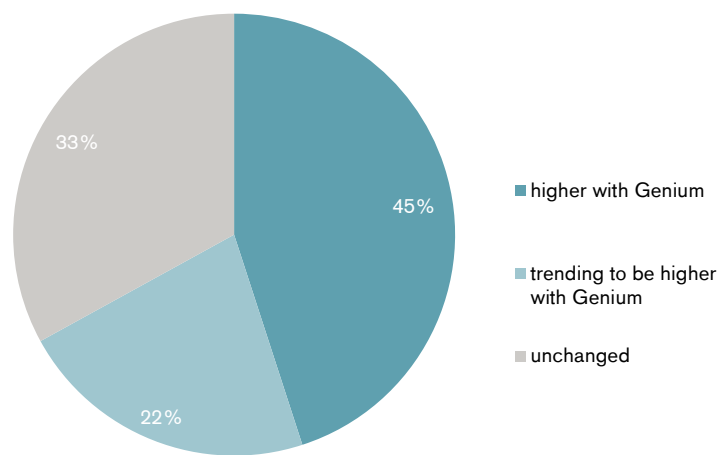
Preference / Satisfaction / Quality of Life (QoL)

Major Findings

With Genium compared to C-Leg:

- **Improved prosthesis-related quality of life**
- **45% of prosthetic-related scales are improved**
- **70% of activities, relevant to the physical performance aspects of Genium, are improved**

Percent of scales showing improvement in prosthetic function and quality of life with Genium



In total 41 items divided in 9 scales were assessed (Highsmith et al. 2014).

Definition/Clinical Relevance

Satisfaction and quality of life can be measured to determine the general well-being of a person. They are all very meaningful parameters to investigate, since they have the most direct impact on the amputee's well-being. They are influenced by other categories and can therefore be seen as a summary of possible activities, independence and perceived safety. A common outcome measure in prosthetic research is the Prosthesis Evaluation Questionnaire (PEQ), a questionnaire with a total of 84 items. Several selected items are further used in 9 subscales.

Summary/Discussion

Comparing all items of the Prosthesis Evaluation Questionnaire (PEQ) in aggregate, the Genium was rated to be improved compared to C-Leg. 4 out of 9 scales were rated as improved, namely perceived response, social burden, utility, and well-being. In addition, the scales appearance and sounds, showed a trend to be improved with Genium. Furthermore, 10 items of special interest were looked at separately. 7 out of these 10 were improved with Genium compared to C-Leg; comfort standing, ability to walk in close spaces, go down stairs, walking up and down steep hills, walk on slippery surfaces and satisfaction with walking (Highsmith et al. 2014).

In a case study, a bilateral transfemoral amputee was fitted with Genium with osseointegrated prosthesis fixation (OPF). Life habits were recorded with LIFE-H questionnaire for daily activities and social roles and showed increases in five and eight respectively out of 12 categories in comparison to the situation before OPF (Schalk et al. 2015).

**References of
summarized studies**

Highsmith, M. J., Kahle, J. T., Miro, R. M., Lura, D. J., Dubey, R. V., Carey, S. L., . . . Mengelkoch, L. J. (2014). Perceived differences between the Genium and the C-Leg microprocessor prosthetic knees in prosthetic-related function and quality of life. *Technology & Innovation*, 15(4), 369–375.
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Schalk, S.A.F., Jonkergouw, N., van der Mer, F., Swaan, W.M., Aschoff, H.H., van der Wurff, P. (2015). The Evaluation of Daily Life Activities after Application of an Osseointegrated Prosthesis Fixation in a Bilateral Transfemoral Amputee: A Case Study. *Medicine (Baltimore)*, 94(36): e1416.

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