

**Reference**

Philipp Kampas, T. Hofmann, M. Mileusnic, E. Gonzalez, G. Schneider  
**The New Genium Prosthetic Knees – New Features Increase Patient Benefit**  
Orthopädie-Technik (2018); 11: Special print.

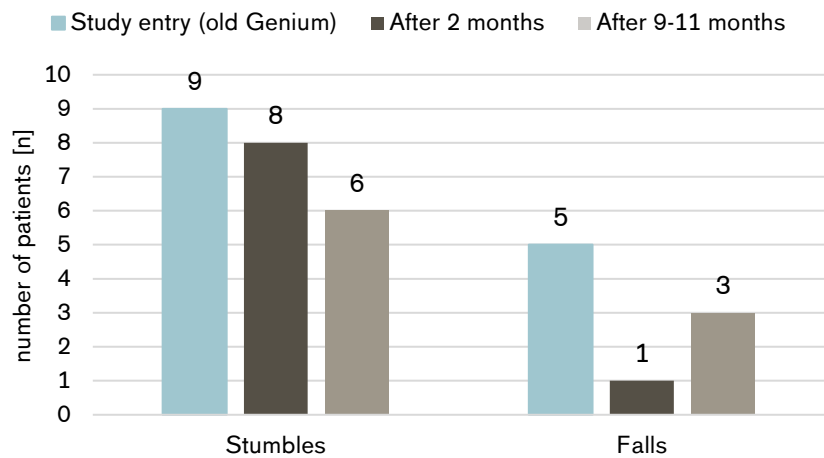
**Products**

**Genium, Genium X3**

**Major Findings**

With Genium and Genium X3:

- **Reduced number of patients reporting falls and stumbles**
- **High Satisfaction (9 of 10 subjects prefer the new Genium X3)**
  - subjects feel more secure and less exhausted during walking
  - patients reported that pain reduced on the healthy leg
  - “smoother” walking and higher “ease of use”



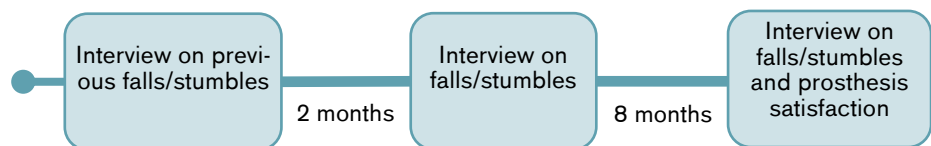
**Figure 1:** Number of patients reporting falls/stumbling events at three time points – right before study entry with the old Genium, then with the new Genium X3 after 2 months in and after 9-11 months in the study

**Population**

Subjects: 10 amputees  
Previous prosthesis: Genium

**Study Design**

Technical report and review:



**Results**

Functions and 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 Genium	Sig. <sup>a</sup>
Safety	Number of patients reporting falls (in the last 8 weeks)	Reduced number of patients reporting falls with the new Genium X3 compared to the older Genium: <ul style="list-style-type: none"> <li>• With old prosthesis: n=5</li> <li>• 2 months in the study: n=1</li> <li>• 9-11 months in the study: n=3</li> </ul>	n.a.
	Number of patients reporting stumbles	Reduced number of patients reported stumbling with the new Genium X3 compared to the older Genium: <ul style="list-style-type: none"> <li>• With old prosthesis: n=9</li> <li>• 2 months in the study: n=8</li> <li>• 9-11 months in the study: n=6</li> </ul>	n.a.
Preference, Satisfaction, Quality of Life (QoL)	Satisfaction	9 out of 10 patients (90%) preferred the new prosthesis over the old: <ul style="list-style-type: none"> <li>• Very satisfied: n = 8</li> <li>• Satisfied: n = 1</li> <li>• Indifferent: n = 1</li> </ul>	n.a.
	Subjective Advantages	Smoother gait, increased ease of use, new functions "MyModes" (swing phase release, brake knee functionality)	n.a.
	Some patients reported of...	<ul style="list-style-type: none"> <li>• Pain reduction on the healthy leg</li> <li>• Walking feels less exhausting</li> </ul>	n.a.

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

#### Author's Conclusion – (original)

"Die klinischen Vorteile des „Genium“- Prothesenkniegelenks gegenüber dem „C-Leg“ wurden inzwischen wissenschaftlich nachgewiesen. Angesichts der Ergebnisse einer ersten klinischen Studie ist der Hersteller überzeugt, dass die neuen Kniegelenke eine weitere Verbesserung für Rehabilitation und Behinderungsausgleich darstellen. Vorrangiges Ziel bleibt die weitere Verringerung der Ungleichheit zwischen natürlicher Körperfunktion des gesunden Bewegungsapparates der unteren Extremität und künstlichem Ersatz durch eine Prothese – sowohl beim Gehen als auch während anderer Aktivitäten des täglichen Lebens." (Kampas et al., 2018)

#### Author's Conclusion (english translation)

"The clinical advantages of the "Genium" prosthetic knee joint compared to the "C-Leg" have now been scientifically proven. In view of the results of a first clinical study, the manufacturer is convinced that the new knee joints represent a further improvement for rehabilitation and disability compensation. The primary goal remains to further reduce the disparity between the natural body function of the healthy musculoskeletal system of the lower extremity and artificial replacement with a prosthesis - both when walking and during other activities of daily living." (Kampas et al., 2018)

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