

## Reference

Schalk SAF, Jonkergouw N, van der Mer F, Swaan WM, Aschoff HH, van der Wurff P.

Military Rehabilitation Centre Aardenburg, Korte Molenweg 3, 3941 PW, Doorn, The Netherlands.

# The Evaluation of Daily Life Activities after Application of an Osseointegrated Prosthesis Fixation in a Bilateral Transfemoral Amputee: A Case Study

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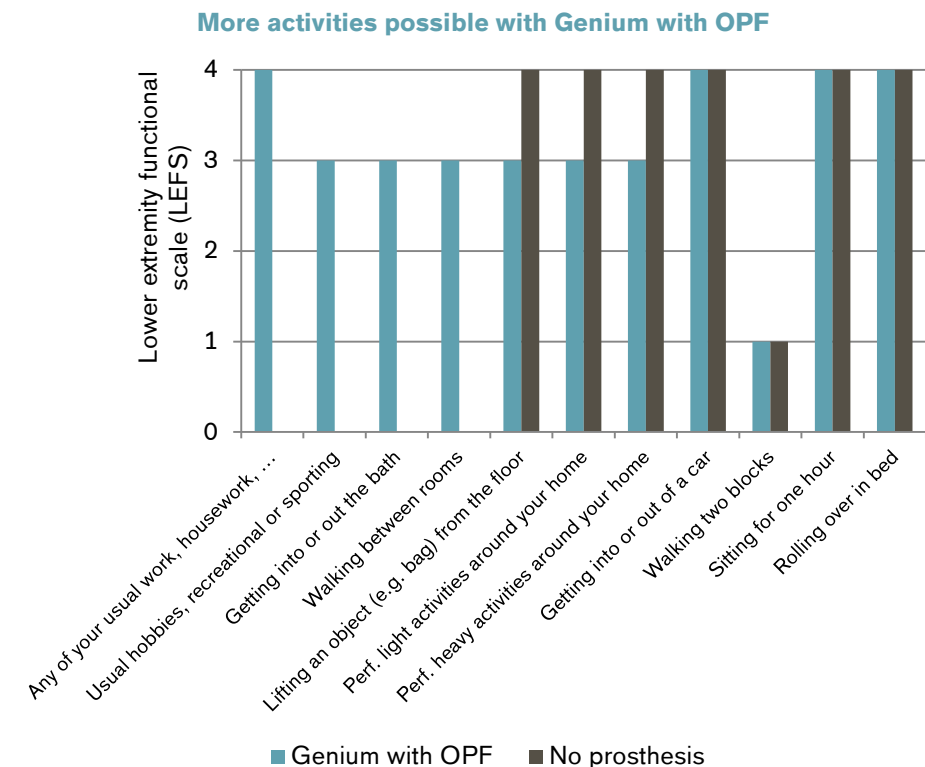
## Products

### Genium with osseointegrated prosthesis fixation (OPF)

## Major Findings

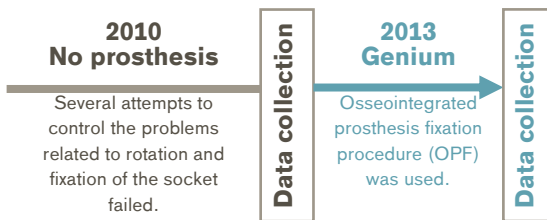
With Genium with OPF compared to previous situation without a prosthesis:

- **The patient was able to perform four more activities (in total 11 out of 20) of Lower extremity functional scale (LEFS)**
- **LIFE-H (life habits questionnaire) increased in daily activities and social roles in five and eight respectively out of 12 categories.**



## Population

Subjects: One bilateral, transfemoral amputee (male)  
Previous: No prosthesis, because several attempts to control the problems related to rotation and fixation of the socket failed.  
Amputation causes: Trauma (injured by an improvised explosive device (IED) during a military mission)  
Stump length: 13 cm (right), 19 cm (left)  
Age: 21 years  
Time since amputation: 4 years



Results

|                          |        |              |                          |                  |               |        |                          |                               |                   |
|--------------------------|--------|--------------|--------------------------|------------------|---------------|--------|--------------------------|-------------------------------|-------------------|
| Functions and Activities |        |              |                          |                  | Participation |        |                          | Environment                   |                   |
| Level walking            | Stairs | Ramps, Hills | Uneven ground, Obstacles | Cognitive demand | Energy        | Safety | Activity, Mobility, ADLs | Preference, Satisfaction, QoL | Health, Economics |

| Category  | Outcomes                                | Results for Genium with OPF   | Sig.* |
|---|---|---|-------|
| Activity, Mobility, Activities of Daily Living (ADLs) | Lower extremity functional scale (LEFS) | The LEFS is a questionnaire containing 20 activities which subject ranks according to difficulty (0 - extreme difficulties to 4 - no difficulties).   |       |
|   |   | The subject was capable of performing four more activities with Genium with OPF compared to no prosthesis. <ul style="list-style-type: none"> <li>Any of your usual work, housework, ...</li> <li>Usual hobbies, recreational or sporting</li> <li>Getting into or out the bath</li> <li>Walking between rooms</li> </ul>   | +     |
|   |   | Three activities were rated to be easier without prosthesis (LEFS-score = 4) than with Genium (LEFS-score = 3) <ul style="list-style-type: none"> <li>Lifting an object (e.g. bag) from the floor</li> <li>Performing light activities around your home</li> <li>Performing heavy activities around your home</li> </ul> As statement about this trend, the patient admitted that he may have overestimated the expected capabilities of OPF. | -     |
|   |   | No differences between Genium with OPF and no prosthesis for four activities that are capable: <ul style="list-style-type: none"> <li>Getting into or out of a car</li> <li>Walking two blocks</li> <li>Sitting for one hour</li> <li>Rolling over in bed</li> </ul>  | 0     |
| Preference, Satisfaction, Quality of Life (QoL)       | LIFE-H (life habits questionnaire)      | This LIFE-H questionnaire is divided in two domains ("daily activities" and "social role") and 12 categories (whereby education was not applicable for this patient).<br><b>Daily activities:</b> LIFE-H increased with Genium with OPF in five categories (recreation, community life, mobility, housing and fitness).   | +     |

| Category | Outcomes | Results for Genium with OPF  | Sig.* |
|----------|----------|--|-------|
|          |          | LIFE-H decreased with Genium with OPF in three categories (work, relationships, personal care). This could be a result of the social change in 2013, when the patient moved from his parent's house to his own place.                                    | -     |
|          |          | <b>Social roles:</b><br>LIFE-H increased with Genium with OPF in eight categories (recreation, community life, mobility, housing, communication, personal care, fitness and nutrition).  | +     |
|          |          | The patient rated the situation without prosthesis as being better than with Genium in two categories (work, relationships). This could again be a result of the social change in 2013, when the patient moved from his parent's house to his own place. | -     |

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

### Author's Conclusion

"In conclusion, although several studies clearly demonstrate the benefits of using an OPF, studies describing the long-term effects are lacking. In this specific case we conclude that the quality of life improved through the use of an OPF. However, OPF might not be the appropriate device for every individual with TFA, due to varying bone compositions and co-morbidities." (Schalk, 2015)

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