

# Patients' perceived outcomes of tetraplegia hand surgery

Akademisk avhandling

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Avhandlingen baseras på följande delarbeten:

- I. **Satisfaction and performance in patient selected goals after grip reconstruction in tetraplegia.**  
Wangdell J, Fridén J.  
*J Hand Surg Eur.* 2010;35:563-568.
- II. **Performance of prioritized activities is not correlated with functional factors after grip reconstruction in tetraplegia.**  
Wangdell J, Fridén J.  
*J Rehabil Med.* 2011;43:626-630.
- III. **Perceived satisfaction and performance with self-assessment goals after surgical grip reconstruction in tetraplegia**  
Wangdell J, Fridén J.  
*J Hand Surg Am.* 2012 37(5):1003-1010.
- IV. **Enhanced independence: experiences after regaining grip function in persons with tetraplegia**  
Wangdell J, Carlsson G, Fridén J.  
*Disabil & Rehabil.* 2013; Jan 07 [Accepted for publication].
- V. **From regained function to daily use after grip reconstructive surgery in tetraplegia: Patients' experiences**  
Wangdell J, Carlsson G, Fridén J.  
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# Patients' perceived outcomes of tetraplegia hand surgery

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**Aim:** To investigate patients perceived benefits after upper limb surgery in persons with tetraplegia - with a special focus on the participants' perspective and their experiences from regaining lost functions.

**Methods:** A combined Quantitative and Qualitative design was used. The outcome measures in study I and III was the Canadian Occupational Performance Measure (COPM). It captured patients perceived performance and satisfaction with their prioritized activities. Study II was a correlation study between activity gains and physical factors. Study IV and V used a grounded theory approach to capture patients experiences regarding a) changes in their daily life and b) the transformation process of regained function into daily use. Patients were recruited from National center of Reconstructive hand surgery in tetraplegia, Sahlgrenska University Hospital, Sweden. Patients came from diverse parts of the Nordic countries.

**Results:** Patients set up goals relevant to the specific surgery, they experience improvements and were satisfied with the performance of their prioritized goals. All types of goals improved after grip reconstruction, especially eating and goals generally regarded as more complex ea domestic life and leisure activities. The satisfaction was similar to the performance improvements. When the patients expressed their experienced after surgery the core theme was "enhanced independence" including both practical and psychological aspects and an increased self-efficacy in their hand control.

No correlation between a single physical factor and perceived improvement in activity was found, suggesting there are also other factors relevant for the transformation process to use regained function in daily life. "Determination for higher independence" was the core concept to transform the function into daily use, described by the participants. Time, training in home environment and social support was other important factors. In the process "belief in ability" and later "confident in ability" were important stages to proceed further into daily use.

**Discussion:** Reconstructive hand surgery and rehabilitation are shown to have impact in many dimensions in life and it gives reflexions in all domains of the International Classification of Functioning, Disability and Health (ICF) model; body structures and function, activity, participation, personal factors and environmental factors. A carefully informed and highly motivated patient is important to receive a good result, not only in grip strength but also in all the other domains of ICF. No single physical factor known before surgery, e.g. sensibility or age could alone explain improvements in prioritized activities. Traditional limitations with high age and lack of sensibility could not be proven to be a limitation to activity improvement in present study. Therefore, all patients with tetraplegia should have the opportunity to choose to have hand surgery. Neither could grip strength alone demonstrate a correlation with activity improvements. Physical factors have of course an important impact on the capability in activity performance but in agreement with the ICF model, personal and environmental factors also plays an important role in activity and participation improvements after reconstructive hand surgery in tetraplegia. Accordingly, body functions, activity and participation all should receive attention in the rehabilitation after surgery and also the need for evaluations in the diverse dimensions to capture multiple perspectives of changes after surgery.

**Conclusion:** Reconstructive hand surgery is a useful and valuable intervention for people with tetraplegia. The participants experienced an increased hand control that had impact not only on physical aspects but also in participation, practical and psychological aspects. Together with the physical improvement, high motivation and development of self-efficacy in hand control seems, from the results of these studies, to be important factors to secure activity and participation improvements after surgery.

**Keywords:** Outcome, tendon transfer, tetraplegia, patient perspective, hand function

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