

# FACTORS INFLUENCING PROSTHESIS USE IN MAJOR UPPER LIMB AMPUTEES

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## ABSTRACT

Arm prostheses are an important aid to function for upper limb amputees (ULAs), and most major ULAs are fitted with prostheses after amputation. Nevertheless, the reported percentage of long-term use and the extent of actual prosthesis use in everyday life among prosthetic wearers vary considerably. Therefore, exploring and understanding factors determining prosthesis use is important to facilitate optimal prosthesis rehabilitation after upper limb loss.

We performed a cross-sectional study analyzing population-based questionnaire data (n=224) and data from interviews and clinical testing in a referred/convenience sample of prosthesis-wearing major ULAs (n=50). Effects were analyzed using linear regression, logistic regression and Cox regression.

Primary prosthesis rejection was found in 4,5%, whereas 13,4% had discontinued prosthesis use. The main reasons for primary nonuse were a perceived lack of need and discrepancies between perceived need and the prostheses available. The main reasons for secondary prosthesis rejection were dissatisfaction with prosthetic comfort, function and control. Primary prosthesis rejection was more likely in ULAs amputated at high age and in ULAs with proximal amputations, whereas secondary prosthesis rejection was more likely in proximal ULAs and in women.

Despite demonstrating good prosthetic skills, prosthesis-wearing ULAs reported actual prosthesis use in only about half of the ADL tasks performed in everyday life. Increased actual use was associated with sufficient prosthetic training and with the use of myoelectric vs. cosmetic prostheses, also in proximal amputees.

Our findings suggest that emphasizing individual needs both in prosthetic fitting and in prosthetic training is likely to facilitate successful long-term prosthesis use. These findings are incorporated in the Norwegian national guideline for rehabilitation after acquired upper limb loss, which includes strong recommendations for individualized prosthetic fitting, mandatory individualized prosthetic training and routine follow-up for prosthetic users. Also, our findings suggest that improved prosthesis quality and fitting of myoelectric rather than passive prostheses may increase long-term prosthesis use and actual prosthesis use in ADL.

## REFERENCES

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