PREDICTING AMBULATORY POTENTIAL AFTER LOWER LIMB AMPUTATION

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Introduction: Lower limb amputation incidence rates vary from 5.8 to 31 per 100,000 person-years. Mobility after surgical amputation is the most important determinant of health related quality of life (HQoL), which supports the importance of prosthetic fitting. Predicting walking ability after lower limb amputation guides both physician and patient through the process, allowing for an adequate planning of the rehabilitation programme, a fair examination of the need for home and social environmental adaptations and a realistic prosthetic prescription.

Purpose: To review the literature on factors and models able to predict ambulatory potential with a prosthesis after lower limb amputation.

Methods: Computer-aided literature search of MEDLINE was performed to identify studies published up to September 2017 that investigated factors and models predicting walking ability after lower limb amputation.

Results: Younger age, unilateral and distal amputation level are predictive of walking ability with prosthesis. Other factors predictive of success of prosthetic ambulation include the ability to stay in one leg, independence in activities of daily living and pre-operative mobility. The Amputee Mobility Predictor (AMP) is the only available model to predict ambulatory potential after lower limb amputation. The AMP correlates strongly with 6 minute walking test scores. The AMP is also significantly different amongst the 4 Medicare functional classification levels (MFCL).

Conclusions: Due to heterogeneity between studies on methods and outcomes, results on predictive factors for ambulation with prosthesis are difficult to compare. Even though AMP scores proved to be significantly different amongst the MFCL, there are currently no cut-off values allowing discrimination between functional levels. Further studies are needed to investigate reliable and clinically feasible models for prediction of ambulatory potential after lower limb amputation.