

ASSESSMENT OF SELECTED ASPECTS OF POSTURAL CONTROL IN TRANSTIBIAL AMPUTEES

Abstract

The aim of our study was to evaluate aspects of automatic and voluntary posture control in transtibial amputees with respect to cause of amputation, prosthesis alignment and prosthetic usage duration by means of dynamic computed posturography (NeuroCom®). A total of 44 volunteers participated in our study (14 transtibial amputees due to trauma, 13 vascular transtibial amputees and 17 healthy subjects). Our results suggest, that transtibial amputees due to trauma have more similar posture behaviour with healthy subjects in compare to vascular amputees. Transtibial amputees due to trauma are able to effectively coordinate voluntary inclination of body on the side of amputated leg. Also the older traumatic amputees were, the worse they could control their posture – same as healthy subjects. Despite the fact that traumatic amputees were able to voluntary coordinate posture even on the side of amputated leg, within automatic posture reactions (on platform translations) they bore more weight on their non-amputated leg. In vascular amputees this tendency was not present. Tested prosthetic alignments didn't have significant influence on the posture control in transtibial amputees.

Keywords:

Lower limb amputation, posture control, lower limb prosthesis, dynamic computed posturography