

**Effect of stump flexion contracture with and without prosthetic alignment intervention  
towards postural stability among transtibial prosthesis users**

MF Ghazali, NA Razak, NA Abu Osman, H Gholizadeh

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Knee flexion contracture on a stump side is a phenomenon in which the stump cannot move in normal range of motion (ROM) or cannot be fully extended. This study has been carried out by using Biodex Stability System (BSS) in order to investigate the effect of stump flexion contracture towards the postural stability among the transtibial prosthesis users with the intervention of alignment accommodation. The BSS provides the reading of anterior-posterior stability index (APSI), medial-lateral stability index (MLSI), and overall stability index (OSI). Higher reading of the index indicates lesser stability. Each of the subjects had been tested in three different sessions that were Visit 1 (before contracture improvement), Visit 2 (after contracture improvement without alignment readjustment), and Visit 3 (after contracture improvement with alignment readjustment). The APSI reading was significantly higher during Visit 2 compared to Visit 1 and Visit 3. The OSI during Visit 2 was also found significantly higher compared to Visit 3. In Visit 2, the degree of contracture was significantly improved with 44.1% less than Visit 1. The stability index in anterior-posterior aspect (APSI) was proven to be lower as the prosthetic alignment was adjusted according to the ROM of knee. This finding explained that the alignment set up based on the adaptation with the stump's ROM can contribute positively in maintaining postural stability.