

Abstract

Title: Influence of a complex stretching exercise of lower limb on postural stability

Objectives:: The main objective of this diploma these is to find out, using dynamic computerized posturography, whether the increased mobility of the lower limbs has a positive influence on postural stability. Another partial objective is to determine efficiency of the practised stretching exercises.

Methods: This is a pilot study where in research participated five probands whose measurement results were evaluated qualitatively. The aged of probands at the time of the first measurement was from 13 to 18 years. All probands are male volleyball league players and during the last two years occurred to a marked grow by all of them. Given their tall stature, it was expected a decrease in the mobility of the lower limbs and muscle shortening. To the data acquisition was used clinical examination of active range of motion and shortened muscle testing according to Janda. Postural stability was measured using computerized dynamic posturography SMART EquiTest System from Neurocom. Measured data were processed using the program NeuroCom Balance Manager software. In the Framework of study were conducted two intrumental measurements in the range of two months. After the first measurement all probands were instructed how to the correct implementation of stretching exercises to increase the mobility of the lower limbs which they practised till the second measurement. The final data were compared intraindividually and interindividually.

Results: The results confirmed that the increased mobility has an impact on improvement of locomotor perception and postural stability control in posturally difficult situations.

Keywords: postural stability, stretching, lower limb, mobility, computerized dynamic posturography