ABSTRACT

Title: Postural stability of near-sighted people

Objectives: To analyse relationships between selected parameters of postural stability and impaired visual acuity (myopia), which is revised by optimal visual correction, by diffusing glasses or by contact lenses.

Methods: Investigations of stabilizing capabilities of erected posture in its various modifications. An objective measuring was performed by stabilometric platform type Footscan. The experiment involved twelve people with myopia of -3 to -6D visual acuity of an average age of 23 ± 4 years. Myopat group of bipedal standing position were tested with open eyes with vision correction, afterwards with eyes closed, then without any vision correction.

The last measured positions were performed on one lower limb with visual correction and then without it. Total number of measured positions were ten upright positions, each of which was measured with 30 second interval.

Results: A total travelled way of centre of pressure was determined as a parameter of postural stability evaluating. Positions on one lower limb clearly put the highest demands for stabilizing upright positions. The only aggravation of conditions stabilizing this position should be to eliminate vision correction, which was confirmed in 8 probands from a total of 12.

Under a bipedal position, probands achieved worse results overal from COP path in a narrow position of standing on foam, which made it more difficult for stabilizing narrow standing, the best results achieved were by all persons in the position of a narrow set directly on the platform. One of the most important factors in results evaluating were the position without any visual control.

In bipedal standing positions there could be a rule inferred – if the proband with closed eyes improved himself, he or she achieved a better result in the position without any vision correction, in comparison with the position with correction. This rule was confirmed by 10 persons, who were measured in the position of standing upright on the foam.

Keywords: stabilisation, visual control, stand tests, eye defect