POSTUROGRAPHY AS A REHABILITATION, DIAGNOSTIC, OR IMBALANCE ASSESSMENT TOOL

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Medical rehabilitation play significant role in treatment of balance disturbances. Modern physiotherapy methods use various stimulations of nervous system. Biofeedback acts positively in compensation processes in balance impairments of both peripheral (vertigo) and central (ataxia) origin. Vision stimulus as a part of attractive scene in computer game in virtual reality (VR) system encourages exercising and performing motor tasks based on losing and retrieving balance. This is a base of stability in everyday activities. The presentation will exhibit a battery of tests performed on posturograph equipment (Pro-Med®). Sways of the center of feet pressure (COP) in the standing position with open and closed eyes are analyzed. The measurements with visual feedback are also performed, when tested subject could correct his position watching screen image. Some numbers of virtual reality scenes are presented to the subject; he/she can influence on the scene by voluntary moves. We calculated very basic parameters of motion trajectory of COP: mean radius, developed surface area, mean COP movement velocity related to upright position and standing in tandem, semi-tandem positions, and there are custom measures developed to evaluate performance and speed of non-standard exercises: leaning forwards or backwards. VR and biofeedback training has been performed on force plate in vertigo, ataxia and SM. Active assist exercises outcomes seem to be satisfactory.