Abstract

The quality of sensory information which is necessary for balance and postural stability is changing throughout aging. It is closely related to increasing cases of injury caused by fall of elderly people. The aim of the diploma thesis is to explain the effect of age to the postural stability especially during varied cervical spine positions. The theoretical part of the thesis deals with a control of balance, role of vision, vestibular and somatosensory system, influence of static and dynamic movements of cervical spine to postural control. Within the experimental part we carried out a posturographic examination of standing stability in two groups of healthy people varying age. The destabilization effect was objectify by measurement of the average velocity of center of pressure during upright head position, extension of cervical spine and theirs dynamic movements in sagittal plane. The extension of cervical spine increases difficulty of performance certain posturographic tests and it is used in unrevealed compensated deficits of stability. This unusual position causes falls in elder people. Destabilization effect is expected within increasing speed of the sagittal movement of the cervical spine during examination of dynamic locomotion. Control of stability and head orientation might be used for different sensory inputs and diverse strategies within head movements with different speed and it can differ also within various age groups.

Keywords

Postural stability, age, aging, vestibular system, neck position, extension