

Abstract

Thesis Title: The Quantification of Biomechanical Consequences of Monotonous Sedentary Work to the Axial System

Thesis Goals: The goal of the Diploma Thesis is to assess the impact of sedentary work position on the axial system and to find out what changes in biomechanical properties occur specifically in the spine after the specific monotonous eight hours lasting load.

Method: Five probands were exposed to diagnostic vibrations of the TVS method (transfer vibration through the spine) before performing eight hours monotonous sedentary work and after it. The examined feature was the ability of the axial system to dampen vibrations spread throughout the spine. Dampening reactions of individual segments were compared to each other before and after the performance of work.

Results: The TVS method applied at work has proven its adequacy in the provision of information on resonance frequencies and on the overall attenuation of the spine with sufficient accuracy so that the impact to the axial system after completing the work performance was clearly identifiable. When comparing the frequency dependence and overall attenuation of individual probands we have found that the overall attenuation of the spine increased in all examined individuals.

Key words: work, axial system, spine, vibrations and TVS.