

Abstract

Title: Analysis of upper limbs muscles involvement during playing the drums.

Objectives: The aim of this thesis is to compile information about playing the drums and summarize the most frequent musculoskeletal disorders of upper extremities of these musicians. The main aim is analyzing and comparing the involvement of muscles or muscles groups of the right upper limb while drumming.

Methods: The theoretical part follows up the given issue as a research and theoretical overview of the current findings based on czech and foreign literature. The practical part is dedicated to evaluation of surface electromyography and 3D kinematics analyses of movements while drumming under specified conditions of one single proband.

Results: Results of measurement demonstrate that m. biceps brachii is the most active muscle during playing on hi-hat, snare drum and floor tom with forte dynamics and m. extensor carpi uln. is the most muscle active during play with piano dynamics. Wrist flexors were the least active during all measurements. M. extensor carpi rad. was measured too and its activity was on second place. A close relation between changes of muscles activity and changes of angles of the elbow and wrist have not been established in this study. This research was implemented only with one proband so the results can not be stated as generally valid.

Keywords: diseases of the upper limbs of drummers, percussion instruments, surface electromyography, 3D kinematics analyses