

ABSTRACT

Title:

Comparative Analysis of Game Activities in Table Tennis

Objectives of the Thesis:

The main goal of this thesis is to analyze the involvement of chosen muscles during table tennis game (measured with electromyograph) and to compare the muscles involvement by forehand and backhand topspin.

Method:

EMG is a common method for movement recording which, according to (Smidt 1991), measures the involvement of muscle in motion, together with the time aspect of this involvement. The most common method is electrical activity recording connected with contraction of certain muscles in the course of kinetic load. This way of measuring is based on electrodes which are fixed to the skin covering the involved muscles, then on intensification of the signal, and on recording on the polygraphic machine which is needed for a subsequent analysis. The surface EMG in kinesiology probes the muscles' activation, co-activation of muscle groups during the complex and selected motion, and influences of the load on muscles functioning. It can also monitor the effect of workout load.

Thanks to surface electrodes, the surface electromyography registers the electrical responses of muscle group activities. The electrical equivalent of dynamical ionic exchange in the membrane area during muscle activation is recorded on the electromyograph. The record has the form of interferential formula, and results from interference of the sum of potentials of the local motor units, which are in the spatial binding with transferable conductors. Other methodological factors have to be considered - method of detection, data processing and interpretation.

Results:

The measuring has demonstrated that the technique of the observed player is stable, m. biceps brachii, together with m. triceps brachii reaches the highest activity, and the muscles are in the right co-activation.

Key words: