USING MUSCLE ELECTRICAL STIMULATION FOR PERFORMANCE IMPROVEMENT OF AN ATLETE IN PROPULSION PHASE

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The main trait of an athletes' qualification during the leg propulsion phase is the angular velocity of the leg flexion in the knee joint. It was discovered in cross country skiing for classic style (Komi et.al. 1982),skating skiing (Rostovstev and Krjazev,1988),and speed skating (Schenay et.al.,1985).

One of the ways for performance improvement is to have direct influence on to the mentioned parameter. Major muscle-flexion by electrical stimulation during the propulsion phase was first suggested by I.P.Ra (1967) and was used in this study.

Experimental results from m.quadriceps femoris, under electrical stimulation (EMS),during the propulsion phase on skier performance are presented in this study. It was determined that during 6 degrees of ascending EMS for the skating stride the angular velocity of knee joint increased to 17 deg/sec (9,4%); mechanical work in the propulsion phase increased to 7 J, and mechanical work in total cycle is decreasing. The standard velocity pulse was 2,4 str/min lower than in ordinary case than when EMS was used.