

## SUMMARY

**Title:** The influence of acral settings on the activation of muscles in upper limbs and trunk, according to R. Brunkow's method.

**Aim:** The aim of experimental study was to record the electric activity of particular muscles in upper limbs and in the area of trunk at various angular acra settings and during the activity of given force on the root of the arm by means of surficial electromyography.

**Methods:** First, bibliographic search was completed. Theoretical knowledge on R. Brunkow's methods, neurophysiological principles of motion management, functional anatomy of arm, functional biomechanics of arm joints and electromyography is summarized in the opening part. Then a random group of probands was selected. Consequently anamnestic data was gained and approximated kinesiological analysis was carried. Afterwards, a record of electrical activity of particular muscles by means of surficial electromyography was created. Every examined person was measured three times; at isometric contraction 30° and 70° of dorsal flexion in wrist and at 70° of dorsal flexion in wrist and parallel force of 40 N on the root of the arm. The resulting EMG records were processed by means of special software by function Standard Report, by which the value of electric activity integral was gained. The values electric activity integral were exported to MS Excel and demonstrated in graphs.

**Results:** In spite of a large individual dispersion of resulting values we can claim that the given motoric reaction is individual at each proband but it heads towards the same objective, i.e. tendency to rectification and stabilisation of the trunk. The activation of muscles chains, which is extending from acral settings proximally on the trunk isn't contingent on the peak of dorsal flexion of the arm. The activity of muscles in upper limb and trunk belonging to the ventral and dorsal chains described by R. Brunkov is increasing during coactivation together with longer range of dorsal flexion of an arm at the hand stretching against an imaginary resistance. The majority of the probands also recorded a considerable the activation of muscles participating in the stabilisation of shoulder blades and pectoral girdle at isometric contraction during the press-up and counteracting on the root of the arm, i.e. in closed kinetic chain.

**Key words:** methods of Roswithy Brunkow, isometric contraction, strutting exercise, electromyography.