

Abstract

- Title:** The influence of age, gender and movement activity on the reaction abilities of lower limbs.
- Objectives:** The main objective of this dissertation was to find the reaction abilities of pubescent's (aged 10 – 15years) lower limbs on the basis of age, gender and movement activity. The further aim was to determine the pubescence period (age) when the most noticeable decrease of the visual disjunctive motor response time of lower limbs occurs.
- Methods:** 214 boys and girls aged 10-15 years (157.8 ± 10.8 cm; 47.2 ± 10.7 kg) participated in this research. Simple, choice and disjunctive reaction time of lower limbs was measured through the Fitro Agility Check test. The results processing, including statistical procedures, was carried out using the Matlab (MathWorks, Inc.) programming environment, an IBM SPSS Statistics 22. Three-way ANOVA and Tukey post-hoc tests ($\alpha=0.05$) were used to determine the individual parameters connection.
- Results:** With increasing age, year over year, we found important differences and reaction time decreases of all types of reaction speeds. Testing brings to light the fact that the most noticeable decrease of both selection and disjunctive reaction time of lower limbs are between groups of 11 year olds (11.00-11.99) and 12 year olds (12.00-12.99). The most noticeable decrease of simple reaction speed was found in both genders between 13 year old probands (13.00-13.99) and 14 years old probands (14.00-14.99). Intersignification of the intersexual differences is evident from the 12th year to the 15th year of life. The important influence of the interaction of age and tender factors into the disjunctive reaction-motion ability of the lower limbs. The positive influence of the motion activity on the development of reaction-motion abilities is evident according to the results.
- Key words:** Disjunctive reaction time, Fitro Agility Check, agility, intersex difference, complex reaction time, nonathlete, motion activity, pubescence, athlete, age effect.