

## **Abstract**

**Title:** Body composition in children with different movement programm

**Objectives:** The main objektive of this work is analysis of body composition while using BIA method children of younger school age and consired differences in physical components with regard to different movement programm.

**Methodes:** Body composition was measured by bioelectrical impedance analysis device Bodystat 1500. Data was processed in Microsoft Excel. Followed parameters are the percentage of body fat, the absolute amount of fat-free mass in kg, the proportion of total body water. The research participated in total 75 probands agend 10-11 years of average height 147,7 cm and weight 42,1 kg. The research includes regularly training 25 children from RC Mountfield Říčany (training 3 times a week + 2x physical education) with a medium to hight intensity exersice of 360 minutes per week, regularly training 25 children from Říčany Fight Club (2x weekly training + 2x physical education) with a medium to hight intensity exersice of 270 minutes per week and 25 children from the Nemo Říčany Elementary School where the physical education 90 minutes per week. The research group is made up of boys only, because girl with a higher percentage of total body fat have a higher BFM then boys.

**Results:** The average proportion of body fat in boys from the Nemo Elementary School reaches  $23.7 \pm 7.8$  %. For rugby, the FM is  $13.8 \pm 3.8$  %. Children in the fight club have an average body fat content of  $16.1 \pm 4.2$  %. Boys from the rugby club have a higher average FFM. These non-fat mass values are

85.9 ± 3.9 %. Boys from the fight club have 83.9 ± 4.2% FFM. The smallest proportion of fat-free mass was measured in boys at Nemo Říčany elementary school - 76.3 ± 7.8 %. The average percentage of TBW in children from Nemo Elementary School corresponds to 58%. TBW children from rugby and fight clubs reached 67.2 % and 61.4 %.

**Key words:** Body composition, rugby, martial arts, physical Education, elementary school age, Bioimpedance, Bodystat, body fat mass, fat-free mass, total body water