Abstract

Title of project: Comparison of somatic parameters of female canoe sprint and canoe slalom competitors

Objectives of the work: The aim of this work is to compare the anthropometric parameters (body structure and body composition) of sprint canoe and canoe slalom female competitors.

Methods of data processing: Anthropometric measurement was carried out by Riegerová, Přidalová, Ulbrichová (2006) and all parameters were all in accordance with the ISAK methodology used in the study by Ridge et al. (2007). A Harpenden-type caliper was used to measure skinfolds. Somatotypes were determined according to the methodology of Carter & Heath (1990). A bioimpedance scale (Tanita MC-980) was used for body composition analysis. The data were subsequently analyzed using descriptive (mean, standard deviation, median, minimum and maximum value, %) and exploratory statistics to assess statistical (T-test, $p<0.05$) and substantive (Cohen's d, $d>0.8$) of the significance of the difference between female in canoe sprint and canoe slalom.

Results: In the compared groups, significant statistical differences were recorded in the circumferences of the biceps ($p=0.00$, $d=1.43$), forearms ($p=0.04$) and thighs ($p=0.00$, $d=1.87$). Sprint female canoeists and kayakers, on average, have a higher body weight by almost 4 kg, also a greater amount of fat-free mass, by more than 3 kg. The amount of muscle mass also depends on this, where the difference is almost 3 kg. This difference in weight is probably determined mainly by the different muscle volume of the lower limbs, which in water slalom, unlike speed canoeing, fulfill rather only a stabilizing function. The somatotype of water slalom competitors was 2.6 – 4.5 – 2.3, while the somatotype of sprint canoe and kayak competitors was 1.3 – 0.3 – 1.2. This difference was not evaluated as a signifier.

Keywords: Somatotype, canoeing, slalom, anthropometry