Anthropometrical characteristics, body composition and somatotype of elite swimmers at the age of 10, 12 and 14 years
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Summary: A short history of analyses of body composition and somatotype in Slovenia is described. The main part of article is focused on analyses of body composition, somatotypes and physical development of young female elite swimmers at the age of 10, 12 and 14 years. Measurements were done on 120 girls by cross-section method in years 1998 to 2001. Standard technique and instruments were used. Non-competitive swimmers group was presented by 160 girls of same age measured in 1994–19995. Anthropometrical measurements, parameters of body composition – upper arm analyses, % of fat after Slaughter, BMI and Heath–Carter somatotypes were calculated and analyzed. Differences between age groups coincide with events in adolescence period. All tissue masses are increasing. At elite swimmers muscle mass and at non-competitive swimmers fat mass prevails. Elite swimmers in all age groups have greater upper arm circumference, biacromial breadth and suprailiacal skinfold. Mean somatotype at 10 year-old elite swimmers is 2.7–4.2–3.2, at 12 years 2.9–3.7–3.8 and at 14 years 3.0–3.7–3.5. Endomorphy is slightly increasing from 10 till 14 years of age. Studying such groups their body dimension and composition is very important in selecting and educating junior top athletes.

Key words: Female elite swimmers, anthropometry, body composition, somatotype, Slovenia.