



RELATIONSHIP BETWEEN BIOLOGICAL AND CHRONOLOGICAL AGE IN YOUNG ATHLETES AGED 10-12

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INTRODUCTION

- ▶ Over time, man goes through developmental stages that are anthropologically clearly defined. The duration of each stage is determined by the time interval, although there are individual differences in the speed of development. Maturity of young athletes can be observed chronologically and biologically.
- ▶ The primary somatic indicators on the basis of which the biological assessment of maturity is performed are cartilage ossification measures, primary and secondary puberty, dental maturity, morphological status, biochemical and hormonal markers (Beunen et al., 2006). Research on the relationship between biological and chronological age in young athletes has been the subject of many authors: Filipčič, A., Pisk & Filipčič, T., 2010, Lloyd, Rhodri, Oliver, Jon, Faigenbaum, Avery, Myer, Gregory, Croix & Mark BA 2014, Raspberry, Rogal, Cuming, Silva & Figueiredo, 2015.

METHOD

- ▶ **Sample of respondents**

- ▶ The sample of respondents consisted of 30 girls (15 girls in each age category) aged 10-12, who train tennis in two Belgrade clubs, the tennis club "Red Star" and the tennis club "Privilege".

- ▶ **Sample variables**

- ▶ The sample of variables is divided into two blocks, namely :
- ▶ Block 1: directly measured anthropometric variables
- ▶ 2. Block: the biological age of the respondents was determined indirectly

DISCUSSION

Table 1. Descriptive statistics of chronological age and biological

	Varijable	N	Mean	Min	Max	SD
10 years	Chronological age	15	10.30	9.76	10.61	.311
	Biological age	15	9.87	11.59	9.01	.848
11 years	Chronological age	15	11.18	10.75	11.59	.313
	Biological age	15	10.37	12.351	8.52	1.4180
12 years	Chronological age	15	12.39	12.01	12.68	.234
	Biological age	15	13.52	15.87	11.86	1.246

Table 2. Results of the T-test of chronological and biological age in the respondents

		N	Mean	SD	Std. Error Mean	t	df	p
10 years	Chronical	15	10.4182	.34905	.34905	2.798	12	0.16*
	Biological	15	9.6192	.89410	.89410			
11 years	Chronical	15	11.3471	.20944	.20944	.719	6	.499
	Biological	15	11.0657	1.05768	1.05768			
12 years	Chronical	15	12.3972	.23437	.23437	-3.149	9	0.12*
	Biological	15	13.5230	1.24673	1.24673			

Table 2. Average biological age of respondents aged 10, 11 and 12 years in relation to biological maturity in%

	%
10 years	< 4.14%
11 years	< 7.21%
12 years	> 9.8%

CONCLUSION

- ▶ The research was conducted with the aim of determining whether there is a difference in biological and chronological age in tennis players aged 10-12. The research included 30 girls aged 10, 11 and 12 who train tennis in two Belgrade clubs. Based on the obtained data, statistical data processing and interpretation, it can be concluded that in girls aged 10 and 12 there are differences in biological and chronological age, and that in girls aged 11 there are no statistically significant differences.



▶ THANK YOU