

The Importance of Anthropometric Indices for Assessing the Physical Development and Physical Fitness of Young Athletes

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Annotation: Many authors have convincingly proved that the anthropometric indicators of a woman affect the state of the placenta, therefore, already in the process of pregnancy it affects the developing fetus and, as a result, the health of the future person. It is shown that the indicators of physical development are associated with the peculiarities of metabolism, in particular, with lipid metabolism in blood cells [6,9;] and, thus, anthropometry indicators can serve as markers of the state the body as a whole

Relevance of the problem: Previously conducted dynamic studies of health indicators of the younger generations of the Republic of Uzbekistan [6;7;9] indicate a decrease in the adaptive capabilities of people of reproductive age, which makes it necessary to carefully consider the causes of these adverse changes.

The purpose of the study: Many authors have convincingly proved that the anthropometric indicators of a woman affect the state of the placenta, therefore, already in the process of pregnancy it affects the developing fetus and, as a result, the health of the future person. It is shown that the indicators of physical development are associated with the peculiarities of metabolism, in particular, with lipid metabolism in blood cells [6,9;] and, thus, anthropometry indicators can serve as markers of the state the body as a whole.

Distribution of girls by anthropometric indicators, by somatotype.

Tab.No1

Study group	Asthenic	Normastenic	Hypersthénics
Girls Involved in Sports Receiving Dynamic Physical Activity N-48	68,75%	25%	6,25%
Students of general educational schools, physical activity according to the program of schools n-30	23,7%	41,4%	34,9%

Material and methods of research: At the first stage, since 2018, a survey of 135 from the sports college and 250 from secondary schools, practically healthy girls born in 1997-2000, systematically engaged in sports activities in the city of Andijan sports college ASCOR (Andijan sports college of the Olympic reserve) has been conducted

Tab.No2

Indicators of physical development of athletes engaged in various sports 13 - 18 years old, calculated by the index method

Anthropometric Indicators and indices	Harmonious n=42	Disgarmo Nothing (low) n=14	Disgarmo Nothing (high) n=11	Recommended index values
Age years.	14,3±0,125	17,37±1,1	16,7±1,5	
In kg	49±0,98	54,63±1,0	65,3±0,7	
P cm	161±0,14	158,3±0,25	167,8±0,17	
P sitting cm	125,2±0,6	127,75±0,7	132,4±0,5	
BMI usl.ud	18,8±0,33	21,95±0,28	23,3±0,21	18—24,9 usd
I.Waist/Hips Unit.	0,46±1,61	0,45±0,9	0,49±0,63	
OG see paras.	73,1±0,54	86,3±0,4	90±0,26	
Coefficient proportionality	61,08±0,531	58,25±0,3	67,0±0,7	
Growth Weight Index	62,75±0,0128	57±0,12	62,1±0,2	
Pinier index kg/cm	32,17±0,91	17,4±0,7	9,1±0,6	10—25
Broosch Index %	49,6±1,0	54,4±1,2	53,4±0,9	50,0—55,0%
Rohrer's index kg/m ²	11,68±1,0	12,57±0,8	9,38±0,76	10,7—13,7
Verveque Index us.ed.	0,92±0,73	0,81±0,91	0,76±0,87	1,25—0,85
Vital signs	56,4±0,23	62,5±0,4	61,8±0,3	
Physical Condition Index	0,59±0,10	0,63±0,12	0,61±0,10	

During the survey, they found out the timing of the formation of the OMC, its features, living conditions, the nature of the girls' diet, the presence of bad habits (drinking alcohol, beer, smoking, etc.). As a result of the analysis of the answers to the questions of a specially developed questionnaire for further in-depth study of physical development, a group of 270 practically healthy girls was identified who had undergone a preventive examination established by the UMC, without bad habits. In the examination group, indicators of physical development were determined, for this purpose the following were measured: body weight (M), height (L), chest circumference on inhalation (OGKvd), exhalation (OKGvyd), in pause (OGKP) muscle strength of the right (DP) and left hand (DL), back (DSP). Based on the results obtained, the morphofunctional indices were calculated: Quetelet (ICT), Verweck (IW), Brooks index, Pinier index (IP), body mass index (BMI), Rohrer index, vital index (IHP), chest excursion (EGC), relative muscle strength of the hand (ODP, ODL) and back (ODSP). Somatotype determinations were carried out according to M.V. Chernorutsky, the composition of body components was determined by the Matiegka method, taking into account the recommendations of E.G. Martirosov. (Table 1) Physical Condition Index (FIS) by E.A. Pirogova. Analysis of anthropometry and somatotyping data showed that girls who occupy and do not engage in sports differ somewhat in weight, height, body surface area of the chest circumference on inhalation (Table 2). At the same time, the average values of the Pinier, Erisman and Quetelet indices in the groups of athletes and non-athletes of girls do not differ. Since E O.B. Sakharova et al. (201 7) noted that the Quetelet index is the most significant in assessing the state of health, we estimated the nature of the distribution of this indicator among girls involved in various sports in the study groups. When analyzing the data of the questionnaire, it turned out that the formation of OMC in girls who are constantly engaged in sports activities occurs somewhat later than in younger athletes. The average age of onset of menarche is 13.2 ± 0.1. The average age of regular menstruation of 14.0 ± 0.2 years differed in younger athletes, but the distribution of the timing of the establishment of regular OMCs was somewhat different.

Almost 15% of older female athletes under the age of 18 have not established an OMC. Among younger athletes at the time of the examination, only 4% had an unspecified cycle.

The indicator of body strength (Pinier Index) in groups of older athletes sports experience is more than 2 years of the norasthenic type of the middle and above average than the younger group, where the sports

experience is less and this is confirmed by vital indicators of 62.5, 61.8 and 56.4, respectively. The universal indicator - the index of physical condition (FIS) in older age (0.61 ± 0.10) and younger age (0.59 ± 0.12) of athletes practically does not differ, however, we have noted some differences in the nature of its distribution. Extreme values characterizing a very poor and very high level of physical condition are equally common in the groups compared. At the same time, most younger athletes have average IFS values, the level above average is 10% more among older athletes.

Findings.

1. Indicators of physical development in girls involved in sports have features compared to peers from secondary schools. They differ in height, body weight, chest circumference, index indicators. Among athletes, asthenic body type and normal BMI values are much more common.

2. The formation of the ovarian-menstrual cycle (OMC) in conditions of physical activity occurs later than that of girls from secondary schools and has differences in the experience of sports training of girls. At the same time, about 70% of athletes have a very low and low content of the fat component of the body, which may explain the frequent violations of the OMC.

Literature:

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