

## **Physical Performance and Physical Fitness of Wrestlers Aged 15-16 at the Stage of Sports Improvement**

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**Abstract:** The aim of the study was to investigate the relationship between the index of physical performance and physical fitness of wrestlers 15-16 years old at the stage of sports improvement. After the conducted training influences significant shifts occurred not only in the indices of general, special preparation, but also in the results of technical and tactical preparation. It is necessary to point out the relationship and significance of the functional indicator as PWC-170, demonstrating physical performance, the growth of which indicates an increase in the reserve capabilities of wrestlers. The obvious superiority of the wrestlers of the experimental group, at the final stage of the experiment, is a very important argument for the conclusion that the achievement of high efficiency in EG is the accentuated use of athletics means, in particular, running for different distances, included in the experimental program.

**Relevance of the study:** With the acquisition of state independence, the priority areas remain the issues of prolonging life, improving its quality, educating a healthy generation through propaganda for sports, creating conditions for sports, both for professional athletes and for the entire population of the country. At the initiative of republican sports organizations and associations and directly under the leadership of President Shavkat Mirziyoyev, a program for the development of physical culture and mass sports in Uzbekistan for 2017-2021 was approved in Uzbekistan.

Modern sport is characterized by the intensification of the training process, increasing physical exertion, requiring the athlete to master and hone technical and tactical skills. Based on the above, we set the task of developing on the basis of morph-functional and anthropocentric criteria for assessing the prospects of young wrestlers, taking into account their athletic form, conducting selective selection with the subsequent prospect of scientific support for national teams of Uzbekistan by types of wrestling, in particular, freestyle wrestling.

**The degree of study of the topic:** At the first stages of long-term training, general physical training is first carried out, then a special foundation is built on its basis, on the basis of which special physical qualities are developed to the highest possible level [9; 863., 3; 259., 4; 98-100]. The ratio of the means of general and special training of athletes depends on qualifications, age, individual characteristics, type of sport, stages and periods of the training process, and with increasing qualifications, the volume of special training funds increases and the proportion of general training funds decreases [6; 351-356., 13; 98-100].

At the present stage, sports training and competitive activities, including in wrestling, are characterized by an increase in physical and nervous stress. Over the past decades, the intensity and density of competitions have increased, requiring the full mobilization of athletes' functional capabilities. Considering that most types of martial arts, in particular, freestyle wrestling, which

also belongs to situational sports, it is particularly necessary to highlight the increase in the role and effectiveness of fighting, which are based on high functional readiness and high requirements for technical and tactical actions in conditions of forceful counteraction and time deficit [1; 51., 2; 38., 5; 316]. Information about the anthropometric and functional characteristics of athletes who have associative links with indicators of general physical performance can be one of the main characteristics for determining sports prospects. A number of important morphological and physiological indicators, first of all, the specifics of the activity of the cardio-respiratory system, energy capabilities, muscle strength, BMD indicators, maximum oxygen consumption, physical performance are directly related to the conditioning of athletic achievements, so they reflect the level of physical fitness [7; 142-145., 8; 5-10., 10; 34-39., 11; 41-45., 12; 4-12., 15; 21-28., 14; 74-77]. Based on the patterns of age dynamics of indicators that determine the level of athletic achievements of young wrestlers aged 15-16, it is assumed that at the stage of sports improvement in their chosen specialization, the effectiveness of training can be significantly increased by establishing relationships between the level of development of motor qualities and endurance with such functional indicators as physical performance and aerobic capabilities of wrestlers who specialize in freestyle wrestling.

**The purpose of the study** – To establish the dynamics of improving the physical fitness of qualified wrestlers, taking into account the interrelationships with functional indicators at the stage of sports improvement.

**The object of the study** - Qualified wrestlers aged 15-16, engaged in freestyle wrestling at the Nukus Center of Martial Arts.

**Research methods:** functional methods - PWC -170 method - for assessing physical performance, pedagogical testing methods for determining the level of development of physical qualities; strength, speed qualities, speed-strength qualities, endurance, flexibility, as well as evaluating the results of leading technical and tactical qualities specific to wrestlers.

**Table 1. Assessment of the physical fitness of wrestlers at the initial stage of the experiment**

Pedagogical tests	Wrestlers - wrestlers		The validity of the differences
	EG- (M ± m)	KG-(M ± m)	R
Cooper's Test	1400± 9,8	1390± 10,03	r > 0,05
PWC-170 –kg/m/min - physical performance	1440,5±300,33	1438,9±294,57	r > 0,05
Long jump from a place-cm	160,0 ± 2,2	163,0 ± 2,1	r > 0,05
Flexion-extension of the arms lying down in 30 seconds- number	39,3 ± 0,9	40,6 ± 0,9	r > 0,05
Flexion-extension of the arms lying down in 10 seconds	12,5 ± 0,5	13,0 ± 0,5	r > 0,05
Pull -up on the crossbar - once	17,80 ± 0,7	18,1 ± 0,7	r > 0,05
Shuttle run 4 × 10 m- sec.	11,8 ± 0,4	14,2 ± 0,4	r > 0,05
Rope climbing 4.5 m- sec	11,1 ± 0,3	11,0 ± 0,2	r > 0,05
Running 1000 m -- min., s	5.45± 3,09	5.47± 3,06	r > 0,05
10 throws with the back footboard-sec	24,1 ± 1,0	23,9 ± 0,9	r > 0,05
10 throws over the back-with.	34,2 ± 1,5	33,7 ± 1,0	r > 0,05
Mannequin throws at a variable pace for 5 minutes	61,7±1,30	61,3±1,30	r > 0,05

**The results of the study and their discussion.** An analysis of the contents of the table indicates that, according to the tested indicators, the results of freestyle wrestlers 15-16 indicate that priority was given to athletics, that is, the impact of the training program consisted in the use of such athletics means as running 1000 m, running for 12 minutes, walking 10,000 m on flat terrain, running the 3000 m ascent in the mountainous area is a descent.

## Assessment of the physical fitness of wrestlers at the final stage of the experiment (Table 2)

Pedagogical tests	Wrestlers - wrestlers				
	ЭГ (M ± m)	КГ (M ± m)	%	The degree of success-	
				t	P
Cooper's Test	1456±9,0	1428±8,8	1,9	4,19	<0.05
PWC-170 –kg/m/min - physical performance	1648,4± 311,4	1508 ± 308,4	8,5	2,29	<0.05
Long jump from a place-cm	177,0 ± 2,4	170,0 ± 2,1	4,0	4,16	<0.05
Flexion-extension of the arms lying down in 30 seconds- number	45,5 ± 1,0	43,3 ± 0,8	4,8	3,69	<0.05
Flexion-extension of the arms lying down in 10 seconds	22,80 ± 0,7	20,10 ± 0,6	11,8	4,90	<0.05
Pull -up on the crossbar - once	10,9 ± 0,1	11,7 ± 0,09	7,3	3,98	<0.05
Shuttle run 4 × 10 m- sec.	8,8 ± 0,13	9,7 ± 0,12	10,2	3,12	<0.05
Rope climbing 4.5 m- sec	5.43,2± 3,09	5.38,1± 3,06	1,5	3,14	<0.05
Running 1000 m -- min., s	19,0 ± 0,8	21,6 ± 0,9	13,7	0,19	< 0.05
10 throws with the back footboard-sec	26,8 ± 1,1	31,2 ± 1,2	12,7	0,12	< 0.05
10 throws over the back-with.	59,8±1,30	55, 12 ±1,33	7,8	4,48	<0.05

So, the results of the "long jump from a place" test turned out to be better for freestyle wrestlers of the experimental group, the average increase was 4.0%, , in the "Flexion-extension of arms in a prone position for 30 seconds - the results were better by 4.8%; in the "pull-up on the crossbar" test, the result increase was 11.9%, which indicates an increase in the strength qualities of the muscles of the upper limb; in the "4 × 10 m shuttle run" – the increase was 7.3%. In the 1000m running test, the increase turned out to be insignificant and amounted to only 1.5%, which indicates the need to increase the aerobic capabilities of freestyle wrestlers. In the dexterity test “ Rope climbing 4.5 m, the increase was significant and amounted to 10.2%. We also analyzed the results of technical and tactical indicators of wrestlers. In the "10 throws with the back foot" test, the test results increased by 13.7%, in the "10 throws over the back" test, the increase was 12.7%; and in the "Mannequin throws at a variable pace for 5 minutes" test, the results increased by 7.8%

**Conclusion:** Significant changes have occurred not only in the indicators of general and special preparedness, but also in the results of technical and tactical preparedness. It is necessary to point out the relationship and importance of a functional indicator such as PWC-170, demonstrating physical performance, the growth of which indicates an increase in the reserve capabilities of wrestlers. Such an obvious superiority of the wrestlers of the experimental group, at the final stage of the experiment, is a very important argument for concluding that achieving high efficiency in EG is an accentuated use of athletics, in particular, running at various distances included in the experimental program. It can be quite definitely assumed that this program has a positive effect on the intensity of the increase in the indicators of the basic physical qualities of athletes. However, it cannot be denied that the magnitude of this increase is influenced by other factors, in particular, the patterns of biological development of ontogenesis, since the peak of growth processes falls on this age period of wrestlers aged 15-16 years.

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