

# STRATEGIES FOR IMPROVING THE PHYSICAL DEVELOPMENT ASSESSMENT TECHNIQUE OF CHILDREN 7-17 YEARS OF THE REPUBLIC OF UZBEKISTAN

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## СОВЕРШЕНСТВОВАНИЕ МЕТОДИКИ ОЦЕНКИ ФИЗИЧЕСКОГО РАЗВИТИЯ ДЕТЕЙ 7-17 ЛЕТ РЕСПУБЛИКИ УЗБЕКИСТАН

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**Abstract:** *it was studied indicators of physical development of more than 6,5 thousand children from 7 to 17 years residing in Tashkent city, Karakalpakstan, Samarkand, Syrdarya, Kashkadarya and Khorezm regions of the Republic. Significant differences of physical development indicators of children in Tashkent from their peers, living in the regional cities of Uzbekistan and Karakalpakstan was based for developing individual assessment tables of physical development for children in Tashkent city, for children of the regional cities of Uzbekistan and separately for children-Karakalpak, in the form of methodological technique recommendations of the "Normative assessment tables of children physical development in 7-17 years of the Republic of Uzbekistan", №012-3/0300. Tashkent, 2016.*

**Аннотация:** *изучены показатели физического развития более чем у 6,5 тысячи детей от 7 до 17 лет, проживающих на территории г. Ташкента, Каракалпастана, Самаркандской, Сырдарьинской, Кашкадарьинской и Хорезмской областей республики. Существенные различия показателей физического развития детей г. Ташкента от их сверстников, проживающих в условиях областных городов Узбекистана и Каракалпастана, явились основанием для разработки отдельных оценочных таблиц физического развития для детей г. Ташкента, для детей областных городов Узбекистана и отдельно для детей-каракалпачков, в виде методических рекомендаций «Нормативные оценочные таблицы физического развития детей 7-17 лет Республики Узбекистан», № 012-3/0300. Ташкент, 2016.*

**Keywords:** *indicators of physical development, individual assessment tables, methodological technique recommendations, child population.*

**Ключевые слова:** *показатели физического развития, индивидуальные оценочные таблицы, методические рекомендации, детское население.*

One of the most important tasks in the framework of the chosen course by the Government of the Republic of Uzbekistan at the present stage is education from an early age of physically strong young generation with a harmonious development of physical and spiritual strength, an increase in motivation among child population to a healthy lifestyle.

It has being implemented in the Republic the State social program "Youth year" (2008), "Harmoniously developed generation year" (2010), "Family year" (2012), "Wellbeing and prosperity year" (2013), "Healthy child year" (2014), "Healthy mother and child year" (2016) which aims to improve children health and to prevent diseases by promotion of youth healthy lifestyle, inculcating interest in physical activity and sports, involvement in regular physical exercise, especially girls in rural areas, new construction and strengthening of material-technical base of the existing sports facilities, equipping them with modern sports equipment, strengthening of qualified training staffs and coaches.

A significant increase in the efficiency of mass medical examinations, an improvement primary detection of various abnormalities in children physical development is achieved by implementation in child healthcare practice of mass diagnostic "screening" tests or screening tables, and standard references [4, 24]. Transition from the "routine" annual examinations to advance based on the screening tables of normative values dedicated to "key" age periods in the most developed countries.

One of the leading criteria in children health is physical development, which allows assessing the readiness to operate in specific conditions [1, 12; 7, 137]. The physical development in childhood determines main features of this generation of health at older ages, including potential longevity, and transfers these qualities to future generations [2, 15; 6, 215].

All the ways individual and collective assessment of children and adolescents physical development are assumed and based on standard, references, normative values establishment. The norm is regarded as a qualitatively defined state as it should reflect actual age, gender, regional and other special contingent aspects by discussed characteristics. The standards serve as values intervals, which are indicators of the majority of children in this age-sex group in practice [3, 31; 5, 27].

For children physical development assessing uses a wide range of standards: local standards, regional

standards (length and weight assessing of children), the international WHO standards. To develop regional age-sex ratios for assessing Uzbekistan child population physical development is a priority mission relevant for pediatricians, hygienists and public health specialists.

Children and adolescents physical development assessment is based on the statistical analysis methods that can be used for developing standards. These include Sigma deviations method. It consists of individual development phase's comparison with an average physical development level of the belonged group. Anthropometric indicators of the examined child are compared with sigma data tables that include an arithmetic mean of the characteristic values (M) for a particular age-sex group and corresponding standard values deviations (sigma). Thus, deviations from average rates are expressed in sigma so it is gotten a sigma deviation. According to the data obtained draw up the physical development profile. Depending on the degree of this deviation it is distinguished between average, above the average, high, below the average and low physical development.

Forming a medical conclusion in addition to level development symptoms also take into account and their harmonicity, if the difference between sigma deviations of all estimated signs does not exceed 1.

**Materials and methods.** It has been studied the physical development indicators more than 6,5 thousand children from 7 to 17 years residing in Tashkent city, Karakalpakstan, Samarkand, Syrdarya, Kashkadarya and Khorezm regions of the Republic of Uzbekistan. Study results conducted by scientists of Research institute of sanitary, hygiene and occupational diseases of the Ministry of health of the Republic of Uzbekistan performed in the framework of the ADSS-15.17.1 State grant project.

Studied somatometric indicators of children of the Republic of Uzbekistan have been expressed differences in age and sex aspect and depend on their living: the most intensive growth of the of physical signs development occurs in boys 13-16 and girls - 11-14 years; by far the majority of surveyed students groups studied indices in Tashkent children significantly higher compared with their peers living in the regional cities; children of the regional cities in contrast to Tashkent students has been noted a more even distribution of somatometric growth performance over the years. Final body size in children aged 15-17 years almost the same, however, the growth rate of Tashkent children are significantly higher than their peers living in the regional cities. Given a negligible difference in terms of length and body mass in children living in comparable regional cities and an absence of significant changes in most age and sex groups according to chest circumference have been indicated an absence of differences in children physical development level in regional cities.

Significant differences of children physical development indicators in Tashkent from their peers living in the regional cities of Uzbekistan were based on work developed the individual evaluation tables of physical development for Tashkent children and for children of the regional Uzbekistan cities.

Relations between the basic anthropometric characteristics of body length and mass were based fundamental assessment tables.

The screening tables for individual evaluation of physical development developed by regression analysis, separately designed to assess the children physical development (boys and girls) preschool and school age (from 7 to 17 years) of Tashkent city, children of regional towns and rural areas of the Republic of Uzbekistan.

In each age-sex group of children for specific variants of body length (growth) of a child is ranged a normal variation in body mass. These tables has been allowed identifying deviations due to deficit or excess of body weight and also forming a persons' group with low body length, who has possible general delay of physical development.

In the corresponding table depending on child residence region, gender and age should be found his length and then strictly on a horizontal line corresponding to this growth the range of the "norm" of body weight for physical development assessing. Depending on whether an actual value of the body mass in this range would be bellowed the minimum or above the maximum of its boundary, is estimated child physical development.

Using these tables allows defining the options for children physical development:

1. Normal physical development (body weight is within the normal variants of relative growth).
2. Deviations in physical development:
  - a) deficit in body weight (body weight less than the minimum limit of the "norm" relative to growth);
  - b) excess in body weight (body weight greater than the values of the maximum norms on growth);
  - c) low growth - growth less than the values given in the corresponding table.

Paramedical services staff conduct an assessment by these corresponding tables.

Children with excessive body mass are directed on consultation to the endocrinologist being that obesity among them in a significant number of cases.

Children with deficiency in body weight are qualified for supervision of the family doctor to determine the causes of inadequate weight and its correction.

Children with low length are sent to the endocrinologist for sorting out the question whether a general delay of physical development or poor growth of the child due to genetic factors (parents dwarfishness).

**Conclusions:** Recommended in practice action of health care services developed the normative assessment tables of children physical development in 7-17 years of the Republic of Uzbekistan written in the form of

methodological recommendations (approved of the Ministry of health of the Republic of Uzbekistan №012-3/0300, 2016), is designed for medical professionals, professors and medical students of higher and secondary educational institutions, researchers and other professionals will improve monitoring of key indicators of growth and children development in a timely manner to track and predict trends in their growth and development, will be an effective tool in prevention and wellness activities among the child population of the Republic of Uzbekistan.

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