



# Optimization of the national system of physical training and sports GTO through a comparative study of the results of tests of persons with musculoskeletal disorders

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## Abstract

**Objective of the study** is to determine ways to improve the All-Russian Physical Culture and Sports Complex GTO for people with disabilities and individuals with limited health capabilities, taking into account the specifics of fulfilling the standards of tests for people with musculoskeletal disorders.

**Methods and structure of the study.** Analysis of the results of testing people with disabilities and individuals with limited health capabilities with musculoskeletal disorders in the Russian Federation based on statistical reporting from the Federal Operator of the All-Russian Physical Culture and Sports Complex GTO for the period from 2019 to 2023.

**Results and conclusions.** Based on the results of the work carried out – an analysis of the results of participation of persons with musculoskeletal disorders in the All-Russian Physical Culture and Sports Complex GTO for the period 2019-2023 – it is recommended to develop separate tests and introduce relative standards based on a comparison of their current level of physical fitness and initial indicators, using an individual approach to each participant.

**Keywords:** ways to improve the All-Russian Physical Culture and Sports Complex GTO, testing disabled people and people with disabilities, people with musculoskeletal disorders, testing standards (tests).

**Introduction.** Since the introduction of the state requirements of the All-Russian Physical Culture and Sports Complex Ready for Labor and Defense (GTO) for persons with musculoskeletal disorders to the present day, the number of participants has increased threefold, from 1,043 to 3,000 or more people.

**Objective of the study** is to identify ways to improve the All-Russian Physical Culture and Sports Complex Ready for Labor and Defense for persons with disabilities, taking into account the specifics of fulfilling the standards for testing persons with musculoskeletal disorders.

**Methods and structure of the study.** The analysis of the testing results of persons with disabilities and persons with disabilities with musculoskeletal disorders in the Russian Federation based on statistical reporting from the Federal Operator of the All-Russian Physical Culture and Sports Complex Ready for Labor

and Defense for the period from 2019 to 2023 was carried out as part of the work on scientific and methodological support [1, 2].

**Results and conclusions.** Analyzing the data in Fig. 1, we can conclude that the number of participants in the All-Russian Physical Culture and Sports Complex GTO with musculoskeletal disorders has positive dynamics.

Fig. 2 shows the results of the implementation of the standards of tests of distinction by persons with musculoskeletal disorders for the period from 2019 to 2023. The data obtained also indicate an increase in the number of participants who fulfilled the standards of the All-Russian Physical Culture and Sports Complex GTO for distinction.

Further, Fig. 3 presents statistical data on the results of testing of male and female individuals with unilateral or bilateral amputation, or other lesions of the

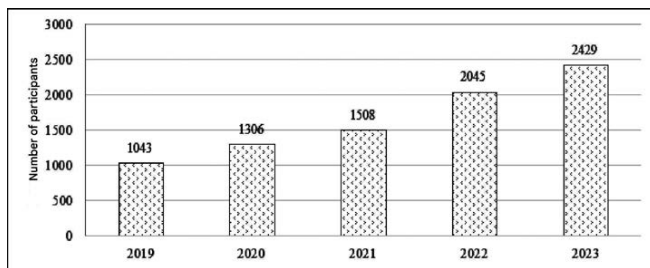


Fig. 1. Number of persons with musculoskeletal disorders who took part in the implementation of the standards of tests of the All-Russian Physical Culture and Sports Complex GTO (from 2019 to 2023)

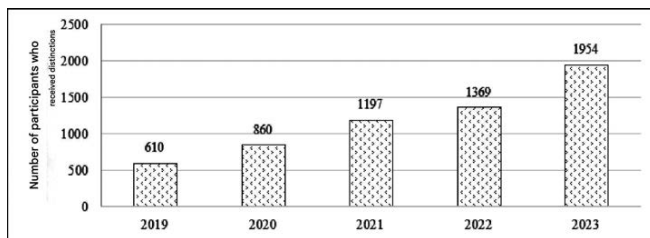


Fig. 2. Number of persons with musculoskeletal disorders who have passed the All-Russian Physical Culture and Sports Complex GTO (VFSK) test standards for distinction badges (from 2019 to 2023)

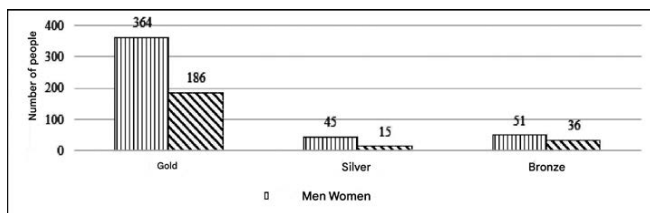


Fig. 3. Total number of persons with unilateral or bilateral amputation or other upper limb impairments, male and female, who passed the All-Russian Physical Culture and Sports Complex GTO (VFSK) test standards for distinction badges for the period (2019 to 2023)

upper limbs, who received distinctions (gold, silver, bronze) for the period 2019-2023.

Analysis of the results of testing persons with unilateral or bilateral amputation or other upper limb impairments according to the All-Russian Physical Culture and Sports Complex GTO (VFSK GTO) standards for distinction badges for 2019-2023 (Fig. 3) shows that a total of 697 distinction badges were received, of which 460 were received by males and 237 distinction badges by females.

When generalizing the data, there is a confident positive trend in the number of GTO participants and the receipt of distinction badges. However, it is advisable to consider the data on the number of male and female participants who received gold, silver, and bronze distinction badges for each year separately (Tables 1, 2).

The provided data on the number of male and female participants who received gold, silver, bronze badges of distinction for each year separately indicate that the majority of participants met the standards of the test (tests) of the All-Russian Physical Culture and Sports Complex GTO for the gold badge of distinction (Tables 1, 2).

The established fact can be interpreted as follows:

- the GTO complex is attended by persons with minor lesions of the upper limbs, for whom the proposed standards of the test (tests) are easily accessible for fulfillment;
- the standards of the test (tests) for silver and bronze badges of distinction are fulfilled by persons with severe forms of damage to the musculoskeletal system, which may be biased for assessing the level of their real physical fitness;

Table 1. Generalized results of participation in the implementation of the standards of tests of the All-Russian Physical Culture and Sports Complex GTO with unilateral or bilateral amputation, or other lesions of the upper limbs of males for the period from 2019 to 2023

Year	The number of persons with unilateral or bilateral amputation or other lesions of the upper limbs of the male gender who took part in the All-Russian Physical Culture and Sports Complex GTO and fulfilled the standards of the test for the badges of distinction								
	Those who took part	Those who completed the tests (number of people)				%			
		For insignia			NNZ	Received insignia			NNZ
		33	CC	БЗ		33	СЗ	БЗ	
2019	115	41	2	3	69	35,7	1,7	2,6	60
2020	165	59	8	7	89	35,8	4,9	4,2	53,9
2021	116	72	5	1	38	62,1	4,3	0,9	32,7
2022	155	78	17	26	34	50,3	11,0	16,8	21,9
2023	186	114	13	14	45	61,3	7,0	7,5	24,2
Total	737	364	45	51	275	49,3	5,8	6,4	38,5

Note: NNZ - below the standard of badges; BZ - bronze badge of distinction; ZZ - gold badge of distinction; SZ - silver badge of distinction



Table 2. Generalized results of participation in the implementation of the standards of tests of the All-Russian Physical Culture and Sports Complex GTO with unilateral or bilateral amputation, or other lesions of the upper limbs of the female sex for the period from 2019 to 2023

Year	The number of females with unilateral or bilateral amputation or other upper limb lesions who took part in the All-Russian Physical Culture and Sports Complex GTO and completed the test standards for distinction badges								
	Those who took part	Those who completed the tests (number of people)				%			
		For insignia			NNZ	Received insignia			NNZ
		ZZ	CC	BZ		ZZ	CZ	BZ	
2019	46	17	1	1	27	36,9	2,2	2,2	58,7
2020	71	34	0	3	34	47,9	0	4,2	47,9
2021	47	34	2	3	8	72,3	4,2	6,4	17,1
2022	96	47	8	20	21	49	8,3	20,8	21,9
2023	88	54	4	9	21	61,4	4,6	10,2	23,8
Total	348	186	15	36	111	53,5	3,9	8,8	33,8

Note: NNZ - below the standard of badges; BZ - bronze badge of distinction; ZZ - gold badge of distinction; SZ - silver badge of distinction

- results below the standard for the distinction badges are achieved by persons with the most severe and mixed forms of musculoskeletal disorders.

The above analysis of the participation of persons with musculoskeletal disorders in the All-Russian Physical Culture and Sports Complex GTO for 2019-2023 determines ways to improve the All-Russian Physical Culture and Sports Complex GTO for persons with disabilities with motor disorders. Based on statistical data on the participation of persons with musculoskeletal disorders in the GTO complex, it can be argued that the number of participants increases annually, as well as the interest of this category of the population in fulfilling the standards of tests.

However, at present, the state requirements of the All-Russian Physical Culture and Sports Complex GTO for persons with musculoskeletal disorders include tests where participants experience difficulties in fulfilling the standards for one of the distinction badges [3].

In order to increase the number of participants in the GTO complex with complex forms of musculoskeletal disorders, it is necessary to develop separate tests and implement relative standards based on a comparison of their current level of physical fitness and initial indicators, using an individual approach to each participant [4].

**Conclusions.** Thus, today, in order to attract a larger number of potential participants in the physical culture and sports complex with musculoskeletal disorders, as well as to increase the number of people who could meet the standards for distinctions, it is

necessary to improve the regulatory framework of the GTO complex.

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