

## SPECIAL PHYSICAL FITNESS ENHANCING TOOLS OF SPRINTERS

Submission Date: March 21, 2023, Accepted Date: March 26, 2023,

Published Date: March 31, 2023

Crossref doi: <https://doi.org/10.37547/pedagogics-crjp-04-03-17>

Journal Website:  
<https://masterjournals.com/index.php/crjp>

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### ABSTRACT

The article describes the impact of the morphofunctional condition on the sports results of short-distance runners in order to show good results and maintain their sports form for a long time. In order to show a high sports result, a statement was even made about the importance of proper breathing of the athletes in the starting position and when covering the distance.

### KEYWORDS

Anatomy, individual capabilities, sports form, psycho-emotional state, sports results, breathing, concept of second breath, sprint, athlete.

### INTRODUCTION

Relevance of the topic. We can see from the results of our athletes that short-distance running in our country requires special attention. Errors in sprinting technique and instability of competitive activity are no coincidence. An improperly organized training process causes the athlete to exert more effort than necessary, make mistakes that are difficult to correct, and reduce the effectiveness of the training process.

Pre-competition training of sprinters is a very complex process that requires a well-thought-out training plan from the coach and the athlete.

In order to eliminate the above shortcomings and, as a result, to raise the status of our country's athletes in the world arenas, the use of new modern tools aimed at improving special physical training, technical and tactical training, will undoubtedly have a good effect.



The purpose of the research work. Improving the special physical fitness of sprinters.

Research results and discussion. Running for a short distance consists of cyclical exercises, it is said to effectively perform the actions of running the first half of the distance at maximum speed, and the second half of the distance faster than the first.

Sprinters are required to have high running speed, quick endurance, and explosive strength.

Short-distance running consists of 4 phases: take-off, start acceleration, distance running, finish line. Achieving good results in short distance running is directly related to running through these phases efficiently. The more skillfully the athlete takes off the start, the higher the result. That is, the starting phase is very important in short distance running.

In short-distance running, the reaction time to the starter's signal is very important, because this time is included in the overall running result. Therefore, it should be included in the training of short-distance runners, moreover, the shorter the distance, the more time should be devoted to improving the reaction time.

Usain Bolt, the record holder and world champion of the world championship held in Berlin, Germany in 2009, when setting the world record (9.58s) had the following parameters: Reaction time -0.146 s, 0-20m-2.89; -20m-2.89s. 20-40m-1.75s; -40m-4.46s. 40-60m-1.67s; -60m-6.31s. 60-80m -1.61s; -80m-7.92s. 80-100m-1.66s; -100m-9.58s. Usain Bolt's average speed in 100 meters is 37.76 km/h, and in the 60-80m section he reached 44.71 km/h.

U. Bolt usually takes 41 steps in the distance, in which the length of the step in the middle of the distance was 2.83 m. Most of the world's top male sprinters take 44 strides in the 100m. Normally, sprinters taper off after 60 meters, but in Beijing, Bolt made a brilliant front

move and even crossed the finish line with his arms raised 10 meters before the finish line. This situation creates some controversy about the actual end result. According to some experts, it should have been better by 0.04 s. U. Bolt was recognized as the best athlete of the year after his great success at the Olympic Games in Beijing.

It is known that the speed of sound in air is about 340 m/s. Thus, if the starter is about 15 m from the starting line, the sound waves reach the starting line after 0.05 s. Propagation of sound waves, transmission of mechanical vibrations to the nerve impulse, finding the command address, transmission of the nerve impulse and initiation of active activity of muscle fibers - this is the simplified content of the latent period of the movement reaction. It is 0.09-0.11 sec in skilled athletes.

In the study, training during the competition period was specialized. They repeatedly ran distances from 80 m to 200-250 m at high speed, near maximum and maximum speed. 400 m runners repeatedly ran from 200 to 500-600 m, increasing their speed every week, to develop special endurance. The rest time between runs is determined by the readiness of the runner to run the distance again at high speed. If the runner is not very ready for this, he can run the first third of the distance at  $\frac{1}{2}$ - $\frac{3}{4}$  pace during the repeat run.

A 500-600 m sprint was also held. But when running these distances, you should not strive to show a record time, you should distribute your strength over the entire distance and run at an average speed lower than the average speed when running 400 m. In order to develop special endurance, it is sometimes necessary to run 500-600 m and pass 400 m of it at the speed of the competition.

How long the break between repetitions should last was determined depending on how the athlete feels



subjectively. Usually, the break is 5-15 minutes. continues.

In increasing the special endurance of a 400 m runner, holding races and competitions at this distance has a good effect.

A runner's 200m and 400m runner's training during the competition period has a lot of importance on turning. Starting from the start, running for 30-60 m, accelerating, repeating all the exercises can be done easily while turning. This is especially important for 200m runners. Because their turning speed is close to the speed on the straight road.

In order not to reduce the level and stability of sports results, it is necessary to regularly perform speed-strength exercises during the entire competition

period. Therefore, in addition to sprinting, it is necessary to add special running exercises, various types of jumps, exercises with stuffed balls and bags, lifting stones, and exercises with a light barbell to the sprinter's summer training. Sometimes, it is possible to devote whole sessions to such exercises.

Strength training aimed at increasing stride length and frequency in short-distance runners has been used purposefully to improve athletic performance in many cases. In the study, running and jumping exercises, multiple jumps on a pair of legs or on the left and then on the right leg; Various means were used, such as several repeated runs for a distance of 20-30 m, jumping exercises from 30-50 cm high jumps, crossing different distances in parts, running from the place, running in a variable speed method.

**Table 1;**

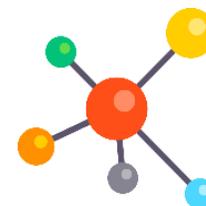
**Average pre- and post-experimental performance and growth rates of short-distance runners. (boys U18)**

No	Tests	100m run from low start, sec	30 m sprint, sec	Standing long jump, cm	Throwing the ball forward from below (3 kg), m
1	Average of pre-test results.	13.2	4.1	228	11.40
2	Average post-test results	12.6	3.8	245	12.60
4	Growth rate in %	4.5	7.3	7.4	10.5

## CONCLUSIONS

Out of the 16 athletes involved in the experimental group, training tools developed by us to improve the starting phase were used. The control group was

trained according to the traditional training plan. After the study, it can be seen that the growth rate of the experimental group was much better than that of the control group. The following conclusions were drawn from the experiment:



- 100m running time from low start to 4.5% after experience;
- Running time for 30m distance by 7.3%;
- The indicator of long jump from a standing position by 7.4%;
- Improved 10.5% low-forward throw of 3 kg filler ball.

## REFERENCES

1. To'xtaboyev N.T., Shakirjanova K.T., Soliyev I.R., Qisqa masofaga yugurish,
2. o'quv qo'llanma, 2013 y, 171-bet.
3. Davletyarova L.B, Yuqori malakali yengil atletikachi sprinterlarni texnikani takomillashtirishning zamonaviy vosita va uslublari. Ilmiy-amaliy anjuman to'plami materiallari,-B,125-128
4. Davletyarova L, Soliyev I. Va b., Yengil atletikaning qisqa masofaga yugurish turlarida texnik tayyorgarlikni takomillashtirish., Academic research in educational sciences jurnal, vol 2. 116-122-betlar.
5. Arakelyan Ye.E., Levchenko A.V., Vovk S.I. Fizicheskaya podgotovka sprinterov. Uchebnoye posobiye dlya slushateley fakul'teta povysheniya kvalifikatsii, Vysshey shkoly trenerov i studentov, M.:FiS, 1991g str 209.
6. Arakelyan Ye.E., Filin V.P., Korobov A.V., Levchenko A.V. - Beg na korotkiye distantsii (sprint) Trenirovka v bege na 400 m , M.: FiS, 1988g str 79.
7. Arzumanov G.G. Vliyaniye trenirovochnykh rejimov na izmeneniye pokazateley strukturnykh komponentov texniki bega i spetsial'noy rabotosposobnosti sprinterov. Avtoref.diss... kand.ped.nauk, - M., 1982
8. Пресняков В.В. Структура и содержание годового цикла тренировки квалифицированных бегунов на 400 м на основе преимущественного использования средств скоростно-силовой подготовки. Дисс. ... кан.пед.наук. 13.00.04 / Пресняков, Виталий Валерьевич. – Смоленск 2013. – 144 с.
9. Мирзоев О.М. Психофизиологические и биохимические аспекты тренировочной и соревновательной деятельности легкоатлетов. Пути повышения спортивной работоспособности спринтеров и барьеристов: учеб.-метод. пособие / О.М. Мирзоев, В.У. Аванесов, Е.П. Врублевский; Рос. гос. ун-т физ. культуры, спорта и туризма. – М., 2007. – 125 с.: табл.
10. Миронов Д.Л., Начальная подготовка в беге на короткие дистанции с использованием специальных технических устройств. Дисс... кан.пед.наук 13.00.04. // Миронов, Дмитрий Леонидович, – М.: 2001. – 162 с.
11. Мухин О.А., Мирзоев О.М., Определение специальной физической подготовленности. // Легкая атлетика. – М.: №9-10, 2016, 10-11 с.
12. Никитушкин В. Г., Чесноков Н. Н., Бауэр В. Г., Зеличенко В. Б., Гос. комитет РФ по физ. культуре и спорту. М.: Советский спорт. 2003, 59 с.