

**MENTAL ENLIGHTENMENT SCIENTIFIC –  
METHODOLOGICAL JOURNAL****MENTAL ENLIGHTENMENT SCIENTIFIC –  
METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**MODERN METHODS FOR DEVELOPING PHYSICAL QUALITIES IN  
VOLLEYBALL PLAYERS****Dadakhon Umaraliyev***Lecturer at the Department of Theory of Physical Culture**Gulistan State Pedagogical Institute**E-mail: [dadaxonumaraliyev24@gmail.com](mailto:dadaxonumaraliyev24@gmail.com)**Gulistan, Uzbekistan***ABOUT ARTICLE**

**Key words:** volleyball, physical qualities, strength, agility, endurance, speed, flexibility, physical fitness, modern methods, pliometric exercises, interval training, functional exercises, sports training, game effectiveness.

**Received:** 01.05.26**Accepted:** 02.05.26**Published:** 03.05.26

**Abstract:** This article analyzes modern methods for developing the physical qualities of volleyball players - strength, agility, endurance, speed, and flexibility. The study examined the effectiveness of innovative approaches aimed at improving the physical fitness of athletes, including functional exercises, interval training, pliometric exercises, and training organized on the basis of an individual approach. The interconnection of physical qualities in ensuring the rapid and precise execution of movements characteristic of volleyball game activities has also been scientifically substantiated. Research results show that the comprehensive use of modern methods significantly enhances the general and special physical fitness of athletes and improves game efficiency.

**Introduction.** Today, the development of physical education and sports in the Republic of Uzbekistan is considered one of the priority directions of state policy. In particular, the Law of the Republic of Uzbekistan “On Physical Education and Sports” (new edition, September 4, 2015, No. O’RQ-394), as well as Presidential Resolution No. PQ-3031 (June 3, 2017, “On Measures for Further Development of Physical Education and Mass Sports”), serve to fundamentally improve the sports system.

In addition, special attention has been paid to organizing athletes' training based on modern approaches, promoting a healthy lifestyle among youth, and developing sports infrastructure through Presidential Decree No. PF-5924 (January 24, 2020) aimed at further developing physical education and sports.

Based on these regulatory legal documents, organizing the training process on a scientific basis, especially the effective development of physical qualities in volleyball players, remains a relevant issue. Volleyball is a sport rich in complex coordination movements requiring a high level of speed, agility, strength, endurance, and flexibility, and athletes' physical preparedness is one of the key factors determining game performance.

Therefore, studying and implementing modern methods for developing physical qualities in volleyball players is one of the important tasks of contemporary sports pedagogy.

In this study, the following scientific and methodological methods were used to examine modern approaches to developing physical qualities—strength, agility, endurance, speed, and flexibility—in volleyball players and to determine their effectiveness:

First, an analysis of scientific and methodological literature was conducted. This included reviewing sources related to the theory of physical education and sports, volleyball training methodology, and the development of physical qualities, and systematizing existing approaches.

Second, the method of pedagogical observation was applied. During the study, the training process of volleyball players was regularly observed, and their level of physical preparedness and quality of exercise performance were analyzed.

Third, pedagogical experimental work was carried out. Participants were divided into experimental and control groups. In the experimental group, training was organized using modern methods—plyometric exercises, interval training, functional exercises, and an individual approach. The control group continued training using traditional methods.

Fourth, physical qualities were assessed through testing:

- strength – via maximal load exercises,
- speed – 30-meter sprint,
- agility – specialized movement tests,
- endurance – long-distance running exercises,
- flexibility – sit-and-reach test.

Fifth, mathematical and statistical analysis methods were used. The obtained results were processed, and differences between the experimental and control groups were scientifically substantiated.

These methods ensured the reliability of the research results and helped determine the effectiveness of developing physical qualities in volleyball players.

**Methodology.** The methodological basis of this study is grounded in modern scientific views of physical education and sports theory, sports pedagogy, and sports physiology. In the research process, systematic, комплекс (comprehensive), and individual approaches were applied to the development of physical qualities—strength, agility, endurance, speed, and flexibility—in volleyball players.

The following principles were considered fundamental:

- Principle of systematicity – development of physical qualities in interconnection as a unified system.
- Principle of gradual progression – gradual increase of training loads to expand athletes' functional capabilities.
- Principle of individualization – organizing training considering each athlete's age, fitness level, and functional characteristics.
- Principle of specificity – selecting exercises based on volleyball-specific movements (jumping, rapid direction changes, striking).
- Principle of innovation – effective use of modern training methods (plyometric exercises, interval training, functional training).

The methodology also included approaches aimed at optimizing the pedagogical process, increasing training effectiveness, and monitoring athletes' physical development. Based on the results obtained, the advantages of modern methods in developing physical qualities in volleyball players were scientifically substantiated.

This methodology contributes to improving both general and specific physical preparedness, enhancing sports performance, and increasing game efficiency.

**Results and Discussion.** A total of 24 volleyball players participated in the study and were equally divided into an experimental group (n=12) and a control group (n=12). The experimental group trained using modern methods, while the control group followed a traditional program. The study lasted 8 weeks.

The results showed that:

- In the experimental group, improvements in all indicators were statistically significant ( $p < 0.05$ ).
- Positive changes were also observed in the control group, but at a lower statistical level (in some cases  $p > 0.05$ ).

- The greatest increases were observed in flexibility (+47.0%) and strength (+17.8%).
- Improvements in speed, agility, and endurance were confirmed through reductions in time.
- The level of improvement in the experimental group was on average 2–3 times higher than in the control group.

These results scientifically confirm the high effectiveness of modern methods (plyometric exercises, interval training, functional training) in improving the physical preparedness of volleyball players and justify their широкое внедрение in practice.

**Conclusion.** The analysis of modern methods for developing physical qualities in volleyball players shows that a comprehensive approach plays a crucial role in achieving high performance. The development of key physical qualities—speed, strength, agility, endurance, and flexibility—should be carried out in an interconnected manner.

According to the results, functional training, interval loads, plyometric exercises, coordination exercises, and the integration of technical-tactical elements with physical training stand out as effective methods. These approaches positively influence reaction speed, jump height, movement speed on the court, and overall game performance.

In addition, monitoring training loads through modern control methods and functional tests enables the individualization of the training process, ensuring appropriate нагрузка for each athlete and reducing the risk of injuries.

In general, the use of scientifically grounded, systematic, and modern methods in developing physical qualities ensures stable high performance of volleyball players in competitive activities.

#### References:

1. Xolmatov S. O'zbekiston sharoitida yosh sportchilarda tezkorlik va chidamlilikni rivojlantirish metodikasi. Toshkent: Toshkent davlat jismoniy tarbiya instituti, 2018.
2. Yoqubov A. Sportchilarning jismoniy tayyorgarligini rivojlantirish asoslari. Toshkent: O'zbekiston milliy universiteti nashriyoti, 2020.
3. Karimov M.K. Jismoniy mashqlar nazariyasi va metodikasi. Toshkent: Ilm ziyo, 2021.
4. Raximov B.B. Voleybol nazariyasi va mashg'ulotlar metodikasi. Toshkent: Sport nashriyoti, 2019.
5. Sobirov D.T. Sport trenirovkasida zamonaviy pedagogik texnologiyalar. Toshkent: O'qituvchi nashriyoti, 2022.

6. O'zbekiston Respublikasi Jismoniy tarbiya va sport vazirligi. Sport tayyorgarligi bo'yicha uslubiy qo'llanma. Toshkent, 2023.

7. Matveyev L.P. Theory and methodology of physical education and sport training. Moscow: Soviet Sport, 2010.