

**SCIENTIFIC SUBSTANTIATION OF THE INTERRELATIONSHIP BETWEEN  
GENERAL AND SPECIAL PHYSICAL PREPAREDNESS IN JUDO AGED 11–16**

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**Abstract:** This article provides a scientific and methodological analysis of the interrelationship between general and special physical preparedness in the training process of judokas aged 11–16. The study identifies the influence of general physical training on the development of special physical preparedness in young athletes. The obtained results are of significant importance for the effective planning of the training process and for improving sports performance.

**Keywords:** judo, general physical preparedness, special physical preparedness, young athletes, sports training.

**INTRODUCTION**

At present, in the system of physical education and sports, combat sports-particularly judo-play an important role in the comprehensive physical and volitional development of the younger generation. Judo is distinguished by its complex technical and tactical actions, as well as high demands for strength and endurance. Therefore, organizing physical preparation in the training process of judokas on a scientific basis is a decisive factor in achieving competitive sports results.

The age period of 11-16 years represents a phase of intensive growth and development of the athletes' bodies, during which favorable physiological conditions exist for the formation of physical qualities. Proper organization of sports training at this stage plays a crucial role in achieving high levels of athletic mastery in the future. At the same time, excessive training loads or one-sided training approaches when working with young athletes may lead to negative consequences. For this reason, determining a scientifically grounded balance between general and special physical preparedness is considered one of the most pressing scientific problems.

In sports theory and methodology, general physical preparedness is recognized as a fundamental factor ensuring the comprehensive physical development of an athlete. General physical training expands the functional capacities of the organism, improves movement coordination, and accelerates adaptation to training loads. Special physical preparedness, in contrast, serves to ensure the effective performance of sport-specific movements and competitive activities. In judo, the development of special strength, special endurance, and explosive power provides athletes with technical and tactical advantages.

An analysis of scientific literature indicates that general and special physical preparedness are closely interconnected, and their harmonious integration determines the effectiveness of sports training. Particularly in the preparation of young judokas, insufficient attention to general physical preparedness may result in incomplete mastery of special exercises, rapid fatigue, and an increased risk of injuries. Conversely, limiting training exclusively to general preparedness restricts the development of sport-specific skills and competitive performance.

In recent years, issues related to the individualization of sports training and consideration of age-related and biological development characteristics have become key directions of scientific research. From this perspective, scientifically substantiating the interrelationship between general and special physical preparedness in judokas aged 11–16 contributes to the

improvement of the training process, the strengthening of athletes' health, and the achievement of high sports results.

The above considerations determine the relevance of the present study and highlight the necessity of a comprehensive scientific analysis of the interrelationship between general and special physical preparedness in the training of judokas aged 11–16.

#### **MAIN PART**

##### **Physical Development Characteristics of Judokas Aged 11–16**

The age period of 11–16 years represents a stage of intensive growth and development of athletes' bodies, during which significant functional changes occur in the musculoskeletal system, muscular system, as well as the cardiovascular and respiratory systems. This period provides favorable biological conditions for the development of physical qualities, and the scientifically grounded organization of the training process creates a solid foundation for achieving high sports performance.

In young judokas, strength and speed qualities should be developed progressively, while endurance and coordination abilities should be formed primarily through general physical training means. When determining training loads, consideration of athletes' biological age, level of physical development, and individual capacities corresponds to the scientific approach requirements established by the Higher Attestation Commission.

##### **Content and Methodological Significance of General Physical Training**

General physical training is aimed at ensuring the comprehensive physical development of judokas aged 11–16 and plays an important role in expanding athletes' functional capacities and enhancing their adaptation to training loads. Through general physical training exercises, muscle strength, speed, agility, endurance, and movement coordination are developed.

The use of running, jumping, gymnastic exercises, exercises performed without resistance or with light resistance, as well as movement-based games during training sessions increases the effectiveness of general physical training. These exercises strengthen the functional preparedness of the organism and create the necessary conditions for the effective mastery of special exercises at subsequent stages.

##### **Specific Features of Special Physical Training in Judo**

Special physical training is focused on the effective execution of movements, technical techniques, and competitive activities specific to judo. This type of training involves the development of special strength, explosive power, special endurance, and coordination abilities. Judo-specific exercises, partner-based resistance movements, and the repetition of techniques under conditions of speed and force constitute the main means of special physical training. In this context, increasing the intensity of training loads in accordance with athletes' age and level of preparedness is carried out in compliance with scientific and methodological requirements.

##### **Scientific Analysis of the Interrelationship Between General and Special Physical Training**

The results of scientific research indicate that judokas aged 11–16 with a higher level of general physical training also demonstrate higher indicators of special physical preparedness. General physical training forms the physiological and biomechanical foundation necessary for performing special exercises.

Moreover, general physical training enhances intermuscular coordination, facilitating the fast and accurate execution of special technical movements. In athletes with insufficiently developed general preparedness, special training sessions are often accompanied by rapid fatigue, decreased movement accuracy, and an increased risk of injury.

##### **Determining the Ratio of General and Special Training in the Training Process**

Scientifically determining the ratio of general and special physical training is of great importance in the preparation of judokas aged 11–16. At the initial and intermediate stages of training, priority should be given to general physical training, while the proportion of special training should be gradually increased with age and sports experience.

When planning the training process, consideration of the annual training cycle, training stages, and competition period ensures systematic and stable physical development of athletes. This approach enables the organization of scientifically grounded sports training in accordance with requirements.

### CONCLUSION

The conducted scientific and methodological analysis indicates that there is a close and stable interrelationship between general and special physical training in the preparation of judokas aged 11–16. General physical training ensures comprehensive physical development and forms the physiological and functional basis necessary for the effective implementation of special physical training.

The research results confirm that young judokas with a high level of general physical preparedness also demonstrate higher indicators of special physical qualities, including special strength, explosive power, and special endurance. This allows for the effective application of judo-specific techniques under competitive conditions.

It was also established that the lack of scientifically grounded integration between general and special physical training may lead to rapid fatigue, decreased coordination, and an increased incidence of sports injuries. Therefore, maintaining an optimal ratio between these types of training in the preparation of judokas aged 11–16 is of significant scientific and practical importance.

Overall, the harmonious integration of general and special physical training is one of the key factors in the gradual development of sports mastery, strengthening athletes' health, and achieving high sports results among young judokas.

### PRACTICAL RECOMMENDATIONS

1. In training sessions for judokas aged 11–16, priority should be given to general physical training exercises, particularly at the initial and intermediate stages of preparation.
2. General and special physical training exercises should be integrated in accordance with athletes' age, biological development level, and individual capacities.
3. Training loads should be increased gradually to ensure effective adaptation of the organism to sports-related loads.
4. When performing special physical training exercises, special attention should be paid to the correct and safe execution of technical techniques and to injury prevention measures.
5. Athletes' physical preparedness should be regularly assessed through pedagogical and functional monitoring, and training programs should be adjusted based on assessment results.
6. When working with young judokas, extensive use of general developmental exercises, movement-based games, and health-oriented training sessions is recommended.

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