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IMPROVING STRENGTH QUALITIES IN YOUNG SHORT-DISTANCE RUNNERS THROUGH FITNESS TRAINING

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Abstract
This article focuses on improving the speed-strength qualities of adolescent short-distance runners in athletics. It analyzes scientifically based training load methods to enhance athletes' running performance. The study examines the effect of weightlifting exercises on the speed-strength abilities of adolescents, and appropriate training loads are developed for training programs.The main purpose of the article is to improve the physical fitness of young athletes and to provide practical recommendations for direct load-based individual and group training aimed at recovery. The results show that special exercises significantly improve athletes' explosive technique, which contributes to their overall performance. The study also presents methodological approaches for optimally organizing the training process, taking into account the physiological characteristics of adolescents.

Keywords: Adolescent athletes, sprint running, speed-strength abilities, physical fitness, weightlifting exercises, training load dosage, explosive power, training process, sports physiology.

Introduction

Nowadays, achieving high results in athletics, especially in short-distance running, is directly dependent on the speed-strength qualities of athletes. The development of these qualities in adolescent athletes should be organized on the basis of training loads that correspond to their stage of physical development. Because during adolescence, the body's growth process continues, and improper loading can lead to negative consequences. Speed-strength quality is understood as the ability of muscles to perform movements with maximum force in a short period of time. This quality is important in the starting speed, acceleration and finishing stages of short-distance running.

Research shows that weightlifting elements, jumping exercises, and explosive power exercises are effective for developing speed and strength. Scientific research has shown that weightlifting exercises activate muscle fibers in adolescent athletes, increasing their strength and speed. In

particular, exercises performed with a light barbell, bodyweight jumps, and dynamic exercises develop the ability of muscles to contract quickly. This leads to the improvement of running technique. The correct distribution of the load during training is of particular importance.

The physical load given to adolescent athletes should be appropriate for their age, level of physical fitness, and health. During the study, training sessions were conducted 3–4 times a week, at moderate intensity. General and specific warm-up exercises were performed before each session, and then speed-strength exercises were performed in the main part. At the end of the training, recovery exercises were used. The results of the study showed that after using a special set of exercises, the athletes' starting speed, acceleration and jump height significantly increased. In particular, the indicators of explosive power changed positively. This increased the effectiveness of the short-distance running technique. In addition, the combination of individual and group training had a positive effect on the physical development of athletes.

Individual training eliminated the athlete's personal shortcomings, while group training increased competition, speed, and endurance. This served to increase the motivation of athletes. The physiological characteristics of the adolescent body were also taken into account when planning the training. In particular, the cardiovascular system, respiratory system, and muscle development stages were taken into account. Not exceeding the norm of the load served to prevent excessive fatigue and injuries in athletes. During the study, special attention was also paid to the recovery process of athletes. After training, active rest, light jogging, stretching exercises and water procedures were used. These methods helped the muscles recover quickly and become ready for the next training. In general, it was found that speed-strength training, organized on the basis of a scientifically based training system, significantly increases the sports results of teenage track and field athletes. This is an important factor in achieving high efficiency in short-distance running.

Developing strength qualities in young athletes (sprinters) who run short distances is important for increasing speed, explosive power, and starting acceleration. The following methods can be effectively used to increase strength through fitness exercises:

1. Repetitive strength method. In this method, exercises are repeated a certain number of times with moderate or high loads. It serves to develop muscle mass and increase overall strength in young athletes.

Uses: • Squats with a barbell or dumbbell• Leg press• Step-up• Plank exercises for the core muscles

Recommendations: • 8–12 repetitions, 3–4 sets• Load around 60–75% of maximum weight
• Exercises must be performed technically correctly

This method increases the activity of muscle fibers and strengthens the stance phase of running.

2. Explosive strength (fast-strength) method. One of the most important methods for sprinters, it develops maximum power generation in a short period of time.

Uses: • Box jump• Jump squat• Medball toss• Plyometric jumps

Recommendations: • 6–8 repetitions, 3–5 approaches• Complete rest (1.5–3 minutes)• Movement is performed at maximum speed

This method helps to increase starting acceleration and speed in the first 30 meters of the distance.

3. Circuit training is a method of training in which several exercises are performed in a row, with short rest periods. It is considered a safe and effective method for teenagers.

Sample complex: 1. Squat – 12 times 2. Jumping run – 20 meters 3. Plank – 30 seconds 4. Sitting jump – 10 times 5. Push-ups – 10–12 times. 3–4 circles are performed.

This method develops overall strength endurance and muscle coordination.

4. Isometric strength method. Muscles are tense while stationary. Effective for strengthening the starting position.

xercises: • Wall push • Static wall sit • Low start hold

Duration: 10–20 seconds, repeated 3–4 times.

5. Differential and individual approach method. The load is determined depending on the age, physical development and level of training of young athletes. The use of excessive weight is not recommended. The main emphasis is on technique and speed.

Developing strength qualities in young sprinters is an important factor in improving athletic performance. Studies have shown that targeted strength training sessions based on fitness exercises have a positive effect on sprint technique, starting acceleration, and maintaining maximum speed over distance.

Scientific analysis has shown that the combined use of repetitive strength training, explosive (fast-strength) exercises, plyometric elements, and circuit training methods improves muscle coordination, increases lower extremity strength, and expands the functional capabilities of the musculoskeletal system. In particular, exercises aimed at developing explosive strength are effective in improving the initial acceleration phase, which is crucial in short-distance running. Also, a gradual increase in the load, taking into account the age characteristics, level of morphofunctional development and individual capabilities of adolescent athletes, is important in achieving high results and reducing the risk of injury. When the process of developing strength qualities through fitness exercises is carried out on the basis of regularity, systematization and pedagogical control, the general and special physical fitness of short-distance runners is significantly improved.

Therefore, a scientific and methodological approach developed based on fitness exercises serves to effectively develop the strength qualities of young athletes who run short distances and creates the basis for them to achieve consistently high results in their competitive activities.

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