

IMPROVING THE TEACHING OF RUNNING TECHNIQUES IN ATHLETICS

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Abstract

The article describes the General characteristics of the process of improving the running technique, in particular, the running technique is analyzed on the example of middle-distance running. In conclusion, the main errors that occur due to an incorrect understanding of the nature of movements, inability to control your body, as well as affecting the effectiveness of the lesson are highlighted.

Keywords: Running technique, middle distance running, sports technique.

Introduction

Sport technique refers to the method of performing a studied exercise. It is defined both by the external form of movements and their internal content, such as transitioning to instantaneous relaxation when possible and necessary, the correct rhythm of elements and movements within the entire exercise, and the maximum possible concentration of effort at the right moment [4]. Recently, in the theory and methodology of training in track and field running disciplines, there has been a growing emphasis on optimizing the technical preparation of runners. This is attributed to the fact that mastering technique is essential for reducing energy expenditure during running activities, which subsequently influences the achievement of high results.

The foundation of mastering technique lies in the formation of complex conditioned reflex connections in the cerebral cortex, which necessitates repeated practice of the studied exercises. In middle-distance running, a high start is utilized. Upon the command “On your marks,” the runner positions themselves before the starting line without the toes of the forward foot touching the line. The other foot is placed back on the toes at a distance of 1.5 to 2 foot-lengths from the starting line. The runner’s body weight is shifted to the forward leg. The arms are relaxed and lowered, and the torso is almost upright.

On the command “Set,” the runner leans the body forward, increasing the inclination of the torso. The rear leg presses firmly on the ground with the forefoot, while the arms bend at the elbows—one leg remains forward and the other back. If the right foot is at the line, the left arm is extended forward, while the right arm is pulled back. At the command (or gunshot), the athlete begins running with a powerful push-off from the ground, taking the first step with the rear foot. Middle-distance races are usually conducted on a shared track. To ensure that runners standing at the start, located at varying distances from the inner edge, begin the race under equal conditions, the starting line is drawn not perpendicular to the edge but along a curve.

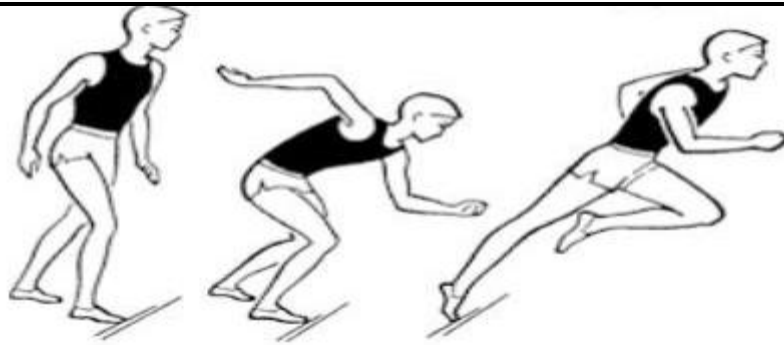


Figure 1. Phases of starting acceleration

After the starter's command, all runners begin the race aiming to take the inner edge of the track. In the first 30–50 meters, they run quickly with a slight forward lean of the torso before transitioning to a broader stride.

The movement during the stride should be free and effortless, avoiding excessive muscle tension that can lead to fatigue. When studying running techniques, special attention should be paid to the placement of the feet on the ground and the ability to relax the leg muscles. The feet should land on the forefoot or the outer arch. The runner's torso is slightly tilted forward, with a small natural arch in the lower back.

The movement of the shoulders and arms should be smooth. The arms help maintain body balance and are bent at the elbows, forming nearly a right angle, with the elbows slightly extended outward. During movement, the hands swing slightly inward toward the body's midline, and the hands rise to chin level.

The runner's stride should feel natural and comfortable. A key factor is the full extension of the rear leg; after completing the push-off, the leg should swing forward more relaxed until it reaches the vertical position [5].

The running technique differs between straight sections and curves of the track. When running around a curve, the stride becomes slightly shorter, the torso leans slightly to the left, and the center of gravity shifts to the left leg. The key elements of middle-distance running technique are:

- The torso is tilted slightly forward (5–6°).
- The shoulder girdle is completely relaxed.
- The shoulder blades are slightly drawn together.
- There is a small natural arch in the lower back.
- The head faces forward, and the muscles of the face and neck are not fully relaxed, with the jaw remaining loose.

This technique is the most optimal and energy-efficient, reducing unnecessary muscle tension [1].

Actions During Curve Running

The main actions for running around curves include:

- Slightly leaning the torso to the left (toward the curve's center).
- Reducing the amplitude of the left arm's movement.

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- Slightly moving the right shoulder forward.
 - Shortening the stride of the left leg.
 - Swinging the right leg slightly inward during its movement.
 - Positioning the right foot with a slight inward rotation.

Increasing Speed in Middle-Distance Running

Speed in middle-distance running is increased by raising the stride frequency rather than the stride length. Longer strides require more energy and lead to quicker fatigue. Studies have shown that the average stride length for runners ranges from 155 to 225 cm. Running speed increases if stride frequency rises without a corresponding decrease in stride length.

The Role of Finishing and Breathing

The finishing phase in middle-distance running plays a crucial role. The length of the finishing segment varies, typically between 120–300 meters, depending on the physical and physiological characteristics of the runner, as well as the total race distance.

Breathing is equally important in middle-distance running. The rhythm of breathing varies, with the most common pattern being inhalation over 3–4 strides and exhalation over the same number of strides. Breath-holding during the race negatively impacts performance.

Teaching Running Technique

Teaching running technique may initially seem simple, as running movements are straightforward and repetitive [9; 10; 11]. However, identifying technical errors, determining their root causes, and finding the most effective ways to address them are critical components of instruction.

Successful teaching of running technique depends on the runner's understanding of the purpose and benefits of specific movements, the advantages of one method over others, and knowledge of how to master these movements. A conscious approach to training is one of the fundamental principles of learning.

Training in running technique is closely linked to physical conditioning, with workload levels being significant even in the initial sessions. However, the workload should not be excessive for beginners, as this may hinder progress in mastering proper technique and reduce interest in training.

During the first session, the instructor or coach should observe and form an overall impression of the trainees' running technique. All explanations should be accompanied by demonstrations of the correct positions and movements. Special attention should be given to identifying and correcting errors, ensuring that the instructor's conclusions about the cause of an error are accurate.

Errors in running technique may arise due to misconceptions about movement mechanics or a lack of body control. Below are some common errors that negatively affect performance and results, along with suggestions for correction:

1. Excessive Forward Lean

This error limits the range of motion of the limbs. The thigh of the swinging leg does not rise high enough, resulting in unnaturally short strides and sharp, jarring landings. Back and shoulder muscles become overly tense, arms fail to swing forward adequately, and elbows move too far back and upward. Movements become jerky and uncoordinated.

Correction: Slightly reducing the forward lean by pulling the shoulders back often resolves these issues, leading to smoother, more natural, and rhythmic running.

2. Hip Flexion (Bending at the Hip Joint)

A bent position at the hip joint causes issues similar to excessive forward lean. Additionally, it reduces running dynamics, as the alignment of body parts does not match the direction of movement, wasting part of the backward push force.

Correction: The torso should be straightened, shoulders pulled back, and the diaphragm slightly elevated. The pelvis should be moved forward during the push-off phase to align with the direction of movement.

3. Vertical Torso Position with a Backward Lean

This error, which can be constant or appear toward the end of a race due to fatigue, reduces running dynamics. The backward push force is misdirected upward, shortening the backward stride. The swinging leg's thigh lifts too high, but the stride length does not increase because the body moves in a steeper trajectory.

Correction: A slight forward lean resolves this issue. It's important to note that a backward lean often stems from weak abdominal muscles. Strengthening these muscles through specific exercises is essential to eliminate this error.

4. Lateral Sway of the Body

While some lateral movement is inevitable, excessive swaying negatively affects efficiency. This issue often arises from high arm positions, limited arm swing amplitude, or a rigid torso.

Correction: Adjust arm movements to ensure a proper swing and incorporate a slight torso rotation toward the swinging leg.

5. Rigid Torso

A stiff torso reduces running efficiency. Teaching the runner to relax their body is crucial. Relaxation can be achieved through specific exercises for the arms, legs, and upper body, performed both statically and dynamically.

Key Exercises:

- **Shuffling Run:** Start with short steps emphasizing the work of ankle-extending muscles. Keep the leg muscles engaged while relaxing the arms and torso.
- **Arm Relaxation:** During running, extend and lower the arms, then shake them at the shoulder joints to release tension.

Technical Adjustments in Running

The structure of the running stride and basic technique remain consistent across all distances. However, the frequency and length of strides, along with kinematic and dynamic characteristics (e.g., race distance, running speed, anthropometric features, and physical capabilities), may vary. By addressing these common errors and incorporating proper exercises, runners can improve their technique, optimize energy use, and achieve better results.

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