

## STUDYING THE TECHNIQUE OF SHORT-DISTANCE RUNNING

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**Annotation:** This article examines the fundamental aspects of short-distance running technique and its significance in athletic performance. It explores the biomechanical, physiological, and pedagogical principles involved in mastering the technique of sprinting. Key phases of sprint performance including the start, acceleration, and maximum velocity are discussed in terms of their technical execution. The importance of individualized instruction, the development of reaction time, and motor coordination are emphasized. Methodologies for detecting and correcting technical errors are presented alongside contemporary coaching strategies and the application of modern training tools. The article aims to provide a comprehensive understanding of how sprinting technique can be effectively taught, developed, and optimized for performance.

**Keywords:** short-distance running sprinting technique start acceleration speed motor coordination training biomechanics coaching performance

### Studying the Technique of Short-Distance Running

Short-distance running, also referred to as sprinting, is a highly dynamic and explosive athletic event that demands a combination of technical precision, muscular power, and neuromuscular coordination. While physical strength and speed are essential, success in sprinting is largely determined by how well the athlete executes each phase of the sprint with optimal technique. The study and instruction of sprinting technique play a critical role in enhancing overall performance, minimizing the risk of injury, and building consistent competitive success. The sprint race is typically divided into several phases: the starting position, the reaction to the start signal, the drive phase or acceleration, and the maintenance of top speed. Each phase requires a distinct set of mechanical patterns and motor skills, which must be taught systematically through progressive and scientifically grounded training. The sprint starts with the athlete assuming a crouched position, known as the block start. This position allows for the accumulation of muscular tension that can be explosively released when the start signal is given. Proper foot placement in the blocks, hand positioning on the track, and alignment of the torso are essential to achieving a powerful start. Coaches focus on ensuring that the athlete maintains a forward-leaning posture, keeps the head in a neutral position, and generates force through the rear leg for optimal propulsion. Following the initial movement, the acceleration phase is crucial for building momentum. During this phase, the sprinter gradually shifts from a forward lean to an upright running position. Strides are short and powerful at first, gradually becoming longer and more rhythmical as speed increases. The athlete must maintain high ground force production, optimal stride frequency, and effective arm swing to support the lower body motion. Sprint-specific drills such as bounding, high-knee runs, and sled pushes are used to reinforce the correct movement patterns associated with this phase. The maximum velocity phase requires the athlete to maintain the highest possible speed without loss of control or efficiency. Here, sprinting mechanics must be at their most refined. Proper posture, relaxed upper body motion, vertical force production, and precise limb coordination are essential for maintaining top speed. Any technical deviation at this stage may result in deceleration and increased fatigue. Teaching sprinting technique involves both theoretical knowledge and applied motor learning

principles. Coaches must first evaluate the athlete's baseline mechanics using observation, video analysis, and biomechanical feedback tools. Based on these assessments, individualized training plans are developed that target specific deficiencies while reinforcing strengths. Instruction is typically organized from simple to complex, with initial emphasis on basic drills and positional training, followed by integrated sprint simulations.

Modern coaching strategies include the use of wearable sensors, motion analysis software, and timing systems to monitor performance indicators such as stride length, contact time, and split timing. These tools provide objective data that can be used to track progress and make evidence-based adjustments to training. In addition to technical instruction, psychological factors such as confidence, focus, and reaction to competitive pressure also influence sprinting performance. Coaches must cultivate mental preparedness alongside physical conditioning to ensure that athletes can consistently perform under the stress of competition. Visualization techniques, pre-race routines, and goal-setting practices are useful components of a comprehensive sprint training program. Common technical errors in sprinting include false starts, excessive vertical oscillation, improper foot placement, and inefficient arm mechanics. Correcting these errors requires a combination of verbal cues, physical demonstrations, and repeated practice. Athletes benefit from consistent, constructive feedback that promotes awareness and encourages gradual improvement. Ultimately, mastering the technique of short-distance running requires time, patience, and a deep understanding of biomechanics and individual athlete needs. Sprint performance is not solely determined by innate speed but by how effectively the athlete can execute technical components of running under pressure. By employing structured methodologies, integrating feedback mechanisms, and prioritizing individualized coaching, the sprinting technique can be successfully taught and optimized to produce high-level results.

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