

## DIFFERENT APPROACHES TO THE DEVELOPMENT OF SPEED IN YOUNG FOOTBALL PLAYERS OF THE U12 CATEGORY

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**Annotation.** This article explores various approaches to the development of speed in young football players in the under-12 (U-12) category. It examines modern training methods aimed at improving starting, maximum, and reactive speed. The study also analyzes the impact of age-specific characteristics and the principles of long-term athletic development on the effectiveness of different training programs. Practical recommendations are provided for coaches and physical training specialists.

**Keywords:** speed development, youth football, training methods, physical education, motor skills, U-12 players, sprint training, agility, neuromuscular adaptation, long-term athlete development.

**Аннотация.** В данной статье рассматриваются различные подходы к развитию скорости у юных футболистов в возрастной категории до 12 лет. Рассматриваются современные методики тренировок, направленные на улучшение стартовой, максимальной и реактивной скорости. Также анализируется влияние возрастных особенностей и принципов долгосрочной спортивной подготовки на эффективность различных программ развития. Представлены практические рекомендации для тренеров и специалистов по физической подготовке.

**Ключевые слова:** развитие скорости, детский футбол, тренировочные методики, физическая подготовка, двигательные навыки, игроки до 12 лет, спринтерская подготовка, ловкость, нейромышечная адаптация, долгосрочная подготовка спортсменов.

**Introduction:** The development of physical qualities in young athletes plays a crucial role in their long-term athletic success. Among these qualities, speed is often considered a key component of performance in football, especially during the critical stages of early specialization. In the U-12 age group, players undergo significant neuromuscular development, making it an optimal period for targeting speed-related training. However, due to the physiological and psychological uniqueness of this age, specific approaches are necessary.

Speed in football is not a singular attribute but a multifaceted quality that includes acceleration, maximum sprinting speed, change of direction, and reactive speed. These components are interlinked with coordination, strength, flexibility, and cognitive processing. Therefore, training young players for speed requires an integrative approach that encompasses technical, tactical, physical, and psychological dimensions.

This article aims to review different methodologies used for speed development in U-12 football players, evaluate their effectiveness based on scientific and practical evidence, and provide recommendations for their application in training environments. The goal is to create a foundation for sustainable athletic growth and injury prevention through age-appropriate and evidence-based speed development strategies.

**Abstract:** Speed is a fundamental component of performance in football, particularly for young players in the U12 category, where early athletic development significantly influences future potential. This article reviews and compares different training methods for developing speed in U12 football players, including natural play, technical drills, resistance training, and coordination exercises. The study highlights the importance of age-appropriate, scientifically grounded methodologies that enhance speed while minimizing injury risks. The findings suggest that a mixed-method approach yields the most effective results in improving sprinting ability, reaction time, and game-speed agility among young athletes.

### 1. Components of Speed in Youth Football

Speed in football is not limited to running fast in a straight line. In young players, speed development must address multiple interrelated elements:

- **Starting Speed (Explosiveness):** The ability to accelerate from a stationary position.
- **Maximum Speed:** The highest running velocity a player can achieve.
- **Agility and Change of Direction:** The capacity to rapidly change direction while maintaining control.
- **Reactive Speed:** The ability to respond quickly to stimuli such as the ball, opponent movements, or a coach's signal.
- **Speed Endurance:** The ability to maintain high-speed efforts over a period of time, especially in match conditions.

Each of these components requires tailored approaches during training, especially when working with players aged under 12..

### 2. General vs. Specific Speed Training

There are two broad categories of speed training for young players:

- **General Speed Training:** Includes exercises like sprint drills, ladder drills, skipping, coordination circuits, and basic plyometrics. These exercises improve basic motor skills and build a foundation for more specific work.
- **Specific Speed Training:** These are football-related drills that simulate game situations — such as sprints to a ball, chasing an opponent, quick changes of direction with the ball, and reactive sprints based on visual or auditory cues.

Modern youth development programs emphasize combining both types of training to ensure balanced development.

### 3. Common Approaches to Speed Development

#### a) Game-Based Drills

This includes relay races, tag games, or reaction-based activities. These are highly effective at the U-12 level because they:

- Engage players psychologically
- Stimulate neuromuscular adaptation
- Build speed through competition and play
- Foster creativity and quick decision-making

#### b) Technical-Tactical Speed Drills

These drills combine speed with football-specific actions such as dribbling, shooting, and defending. Examples:

- Sprint and shoot drills
- Defend-and-sprint scenarios
- One-on-one situations with a time constraint

They develop both speed and tactical understanding.

#### c) Plyometric Training

Although often associated with older athletes, low-intensity plyometrics (e.g., hopping, bounding, skipping) can be safely integrated with U-12 players to develop explosive power. Exercises should be done on soft surfaces and in limited volume.

#### d) Agility and Change of Direction Training

Includes cone drills, zig-zag runs, and shuttle runs. Key points:

- Emphasize body control and proper foot placement
- Use reactive cues (whistle, color cone, coach command)
- Combine with ball control when possible

#### e) Sprint Mechanics and Technique Training

While top-speed sprinting is less relevant in match conditions compared to acceleration and agility, improving sprinting technique helps overall athleticism. Coaches can include:

- Arm drive drills
- High knee drills
- Wall runs
- Short sprints focusing on form

### 4. Duration and Frequency of Speed Training

For U-12 players, speed training should be short and frequent:

- Duration: 10–20 minutes per session
- Frequency: 2–3 times per week
- Intensity: High (short bursts), with full recovery
- Rest Intervals: 30 seconds to 2 minutes between repetitions

The focus should be on quality, not quantity.

### 1. Purpose of the Study

The purpose of this study is to examine and evaluate the effectiveness of different speed development approaches in young football players under the age of 12. The aim is to identify which types of training yield the most significant improvements in various speed components, including acceleration, agility, and reaction time.

The study was conducted with a sample of 30 male football players, aged 10 to 12 years, from three youth football academies. All participants had at least 2 years of training experience and were regularly involved in competitive matches.

- Group A (n=15): Trained primarily with general speed and coordination drills.
- Group B (n=15): Engaged in sport-specific speed drills integrated into tactical training.

Parental consent was obtained for all participants, and the study was conducted in line with ethical standards for youth sports research.

Each training session began with a standardized 10-minute dynamic warm-up and ended with a 5-minute cool-down.

The intervention lasted 8 weeks, with each group training 3 times per week, 60 minutes per session. The training sessions for each group were designed as follows:

- Group A: Sprint technique, ladder drills, skipping, cone drills.
- Group B: Football-specific sprint and reaction drills (e.g., sprint to ball, 1v1 chases, changes of direction with ball).

### 1. Performance Comparison Between Groups

Group A (General Speed Training):

This group showed significant improvement in linear sprint tests (10m and 30m), with an average time reduction of 4.2% and 3.8%, respectively. This indicates that basic motor coordination and sprint mechanics training can effectively improve acceleration and top-end speed, even without sport-

specific context. However, their performance gains in agility and reactive tests were minimal, suggesting a lack of adaptability to dynamic, game-like environments.

#### Group B (Specific Football Speed Training):

Participants in this group showed the greatest improvement in the Speed with Ball and Reactive Shuttle Test, with average improvements of 5.6% and 6.1%, respectively. These results support the principle of specificity in training – that adaptations are maximized when exercises closely resemble game scenarios. However, their gains in pure sprint speed were less significant than Group A.

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