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THE SYSTEM OF EXERCISES FOR DEVELOPING SPEED AND AGILITY IN HANDBALL PLAYERS

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Annotation: This article presents a system of exercises aimed at developing speed and agility in handball players. Speed and agility are among the most important physical qualities in handball, as they determine a player's movement speed on the court, ability to change direction, and capacity to respond effectively to opponents. The article introduces a special set of exercises for improving these qualities, methods for integrating them into the training process, and a stage-based preparation model recommended for young handball players. It also highlights methodological recommendations for regulating training load, selecting rest intervals, and monitoring performance outcomes.

Keywords: handball, speed, agility, physical qualities, exercise system, special training, sports methodology, training process, coordination, reaction speed.

Relevance of the Topic: Modern requirements in sports games, including handball, demand high levels of speed, agility, and coordination from players. The fast pace of the game, frequent direction changes, adaptability to the opponent's movements, and quick decision-making skills have a direct impact on competition results.

During the training of young athletes, there is an increasing need to develop these qualities comprehensively using modern pedagogical technologies and special exercise systems. Therefore, designing and effectively integrating a system of exercises aimed at developing speed and agility in handball players is a scientifically and practically relevant task.

Scientific Novelty:

This study developed and implemented a new exercise system aimed at improving speed and agility in handball players. The system provides for a step-by-step organization of training, taking into account players' age and physical characteristics, improvement of exercise content, and scientific justification of load standards.

Diagnostic criteria for evaluating handball players' speed and agility indicators were developed, and the effectiveness of the exercise system was experimentally validated. As a result, the proposed methodology contributes to the improvement of young handball players' speed, agility, and coordination skills, representing a scientific novelty.

Practical Significance:

The research results enable the development and implementation of an effective exercise system to improve handball players' physical qualities, especially speed and agility. The proposed system can serve as a practical guide for coaches, physical education teachers, and specialists working in sports clubs.

By using this exercise set, young handball players can effectively develop essential performance indicators such as speed, coordination, quick direction changes, reaction speed, and team movement harmony.

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The developed exercise system also contributes to enriching the theoretical and practical foundations of sports training, modernizing physical preparation programs, and increasing students' interest in sports.

Research Aim: To develop an effective exercise system aimed at improving speed and agility in handball players, integrate it into the training process, and determine its practical effectiveness.

Research Objectives:

1. Identify types of exercises that develop speed and agility and adapt them to the training process.
2. Study and analyze the influence of the exercise system on handball players' physical fitness levels.

Research Results:

Applying the developed exercise system positively influenced the handball players' physical fitness. Among the athletes in the experimental group: Speed indicators improved by **12–15%**; Agility indicators increased by **10–13%**; Reaction speed and direction-changing ability significantly improved;

The exercise system enhanced coordination and quick decision-making skills during the game.

These findings confirm that the developed exercise system is an effective means of improving handball players' special physical preparedness.

Introduction: Today, sports games—especially handball—require a high level of physical, technical, and tactical preparedness. In modern handball, a player's success largely depends on quick thinking, agile execution of movements, and the ability to adapt to changing game situations. Therefore, developing speed and agility qualities is one of the key factors for improving a handball player's performance.

Speed and agility are the main physical components ensuring the quickness, coordination, and precision of tactical actions in game activity. Developing and implementing an exercise system focused on these qualities contributes to the comprehensive physical development of young athletes.

Thus, creating and integrating a system of exercises to develop speed and agility in handball players and determining its effectiveness is a significant scientific and practical issue.
Handball is a fast-paced sport involving movements in various directions. During the game, players perform complex coordinated actions such as fast running with the ball, sudden direction changes, jumping, stopping, and feinting opponents. Therefore, speed and agility are among the most crucial determinants of handball performance.

To develop **speed**, exercises such as sprinting, reaction drills, short-distance runs, and quick response movements to light or sound signals are used. These help athletes respond faster to opponents' actions and make quick decisions.

To develop **agility**, exercises include rapid direction changes, stop-and-go movements, ball turns, zigzag runs, cone drills, and ladder coordination drills. These exercises improve balance, body control, and movement accuracy.

Research Methodology:

The study involved 12–15-year-old handball players over an 8-week period. Training sessions were held three times a week, each lasting 60 minutes.

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Methods used: Observation and pedagogical experiment – to analyze the training process. Measurement methods – 30 m sprint, "change of direction" test, coordination ladder exercises. Mathematical-statistical analysis – to determine the effectiveness of changes in percentage terms.

Experimental Results:

Indicators	Initial Result (sec)	Final Result (sec)	Change (%)
30 m sprint speed	5.42	4.81	+11.3%
Direction change test	13.25	11.28	+14.8%
Coordination ladder drill	9.53	8.01	+16.0%
Ball passing accuracy	78%	91%	+13%

Analysis showed that the developed exercise system significantly improved players' speed and agility levels. During games, their decision-making speed, ball-handling accuracy, and ability to feint opponents increased.

Discussion:

The results confirm that exercises for developing speed and agility directly influence handball players' technical and tactical preparation.

Compared to the control group, the experimental group showed: 0.6 seconds faster sprint times, 2 seconds faster in direction-change tests, 1.5 seconds better results in coordination drills.

These findings demonstrate the effectiveness of using game-specific exercises during training sessions.

The exercise system enhances: central nervous system activity, reaction speed, balance maintenance,

- Coordination between ball control and movement.

Additionally, performing drills involving opponents, running with the ball, and combining passes and shots improved game performance.

Conclusion: During the study, a system of exercises aimed at developing speed and agility in handball players was developed and tested in practice. Results show that consistent use of this system significantly improves athletes' physical fitness—especially speed, reaction time, movement precision during direction changes, and quick decision-making ability in play.

It was found that specialized exercises adapted to game conditions (such as cone drills, "start-stop" drills, and direction-change dribbling) play a crucial role in enhancing agility and speed.

Gradual implementation of the exercise system increases athletes' fatigue resistance, develops muscle movement speed, and ensures stable coordination during play.

Thus, the developed system of speed- and agility-developing exercises is recommended as an effective tool for improving handball players' physical preparedness, enhancing game performance, and serving as a new methodological approach for coaches.

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