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## The effect of strength exercises (static and dynamic) in developing the skills of getting over the blocker and switching between defenders for basketball players aged (14-16) years

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### Abstract

Training is a crucial field that has seen significant developments due to scientific research and experiments. It aims to raise the technical level of sports and athletes to the highest possible level. To sustain the training process, correct scientific methods and modern curricula are essential, including physical, skill, tactical, and psychological preparation. In basketball, exercises like static and dynamic strength contribute to physical and skill development. Developing defensive skills and researching static and dynamic strength exercises are essential for optimal performance and preventing attackers from scoring points.

**Keywords:** Dynamic strength, static strength, psychological preparation, basketball player

### Introduction

The world of training is considered one of the most important fields in which many developments have occurred in recent years due to experiments and scientific research, whose only concern was and still is raising the technical level of sports in general and reaching the level of athletes to the highest possible level, as there is no longer a limit to reach and stop at, but rather it has become everything. Something that can be used to develop the level of the athlete. Among the things that must be provided to sustain the training process in general are the use of correct scientific methods and modern scientific training curricula that contain physical, skill, tactical and psychological preparation, which is focused on the use of correct scientific training methods that are consistent with the element to be developed, whether physical or skilful, and the game of basketball. Group sports that require exercises (static strength and dynamic strength) which contribute greatly to developing the numbers of players from a physical and skill standpoint, as the diversity of muscle contractions works to develop muscle strength to a greater extent. Therefore, attention must be paid to preparing the players in a comprehensive manner in all aspects, and developing defensive skills, including (getting rid of the blocking player and switching between defenders). Hence comes the importance of researching the development of the above-mentioned skills through static and dynamic strength exercises, which have an effective role in ideal and good performance which prevents attackers from scoring points.

### Research Problem

The game of basketball has developed a lot in recent years due to changing some laws and rules, which made the game faster and more exciting. This development, based on the presence of elements and physical abilities, gave skill performance the characteristic of continuity without decreasing in level. Through this research, the researcher tried to answer about some questions, the most important of which.

1. Knowing the players' levels of skill in getting over the barrier
2. Knowing the players' skill levels of switching between defenders and the basket?
3. Knowing the basic skill levels of young basketball players?

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- Knowing the effect of exercises (moving and static force) and some basic skills for basketball players?

**Research Objectives**

- Preparing strength exercises (static and dynamic) to develop the skills of getting over the blocking player and switching between defenders for basketball players aged (14-16) years
- Realizing the effect of strength exercises (static and dynamic) in developing the skills of getting over the blocker and switching between defenders for basketball players aged (14-16) years.

**Research Hypothesis**

Static and dynamic strength exercises have a positive effect in developing the skills of getting over the blocker and switching between defenders for basketball players aged (14-16) years.

**Research Scope**

- Human Field:** Samawa Sports Club Players, ages (14-16).
- Time Frame:** From 6/1/2022 To 12/1/2023.
- Spatial Area:** Samawa Club Indoor Sports Hall.

**Research Methodology**

**Research Method:** The researcher used the experimental method (two equal groups) as it is the most appropriate method to solve the research problem.

**Table 1:** Experimental Design of Research Groups

Group	Pretest	Experimental Treatment	Post-test
Experimental	Get rid of the attacking player.	Static and dynamic strength exercises.	Get rid of the attacking player.
Controlling	Switch between defenders.	Exercises prepared by the trainer.	Switch between defenders.

**Research Community**

The research community included Samawah Sports Club players aged (14-16) years, with (20) players. The community was divided into two groups, one experimental and the other control, each group consisting of (10) players.

**Methods, tools and means used in the research**

Means of collecting information

- Personal interviews.
- References and sources.
- The Internet.
- Tests and measurement.
- Registration form.

**Devices and tools used in the research**

- Rubber band.
- Measuring tape.
- A stop watch to measure time.
- Laptop (FUJITSU)

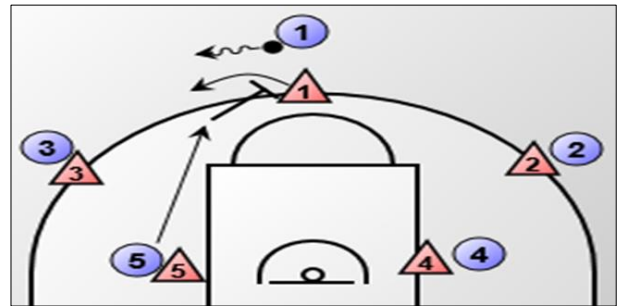
**Description of the tests used in the research**

- Test name:** Getting rid of the blocking player to defend against the player who has a good goal.
- Purpose of the test:** To measure the skill of getting over the blocker to defend against a player who has a good goal.

**Description of performance:** Attacking player no. (5) Creates an offensive block for his teammate no. (1) In the front zone and on the three-point line. Here, defensive player no. (1) Must cross over the barrier in order to be able to defend properly.

**Scoring:** If defender no. (1) was able to cross in front of the attacker and prevent the player from scoring, he is given (2) marks. If he was able to cross but did not prevent the attacker from shooting, he was given (1) marks, and if he was unable to cross, he was given (0).

**Note:** A time of (15) seconds is given for each laboratory, and the number of attempts is calculated, taking into account the evaluation of each case.



**Fig 1:** Attackers Performance Description

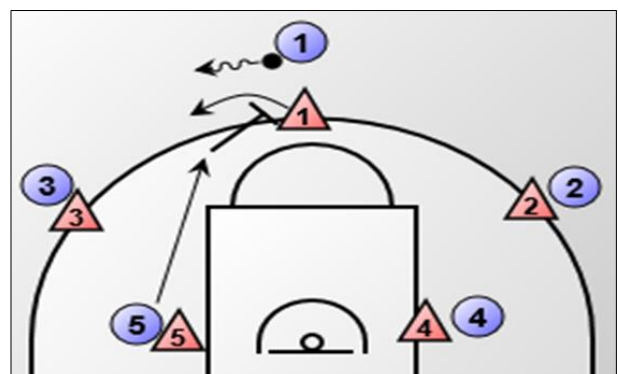
**Description of the switch between defenders' test:**

- Test name:** Switching between defenders during an offensive hold (switch back).
- Purpose of the test:** To measure the skill of switching between defenders during an offensive hold (switch back).

**Description of the performance:** Attacker no. (5) Makes a reservation on the defensive player No. (1), and here we must perform a defensive switch (switch back), and the defensive player no. (5) Must defend the attacking player no. (1) and the defender no. (1) Performs referring to the defense of the attacking player no. (5).

**Scoring:** If the defensive player No. (5) was able to make the defensive switch (switch back) and stop the attacker, he is given (2) marks, and if he made the defensive switch (switch back) and was unable to stop the attacking player, he is given (1), and if he was unable to make the defensive switch (switch back) is given (0) degrees

**Note:** A time of (15) seconds is given for each laboratory, and the number of attempts is calculated, taking into account the evaluation of each case.



**Fig 2:** Defenders Performance Description

### Exploratory Experiment

Before undertaking the main experiment, it was necessary to conduct a reconnaissance experiment on a small sample in the research community. Its purpose was to test the research methods and tools, and to experiment with physical and mental exercises and how to apply them, in addition to extracting the scientific foundations of the field intelligence scale. The researcher conducted a reconnaissance experiment on a sample of (8) players.

### Pretest

The pre-test for the research sample was conducted on Sunday, June 5, 2022, at exactly 4:30 pm, and all variables were controlled in terms of time, tools and devices, as well as the supporting work team, to be applied when conducting the (post-test).

### Posttest

After completing the implementation of the plyometric exercises, the post-test was conducted for the experimental group on Wednesday, July 22, 2022 at exactly (4:30) in the afternoon, taking into account all the time and space conditions of the pre-test with the help of the work team. The post-test was applied to the Hamza Nouri Sports Games Hall.

### Statistical Methods Used

1. Arithmetic mean.
2. Standard deviation.
3. Coefficient of variation.
4. Simple correlation (Pearson).
5. Test (T-TEST) for independent samples.

### Presentation, Analysis and Discussion of the Results

Presentation of the results of group defensive skills tests in basketball (for the experimental group).

**Table 2:** The median values, the interquartile deviation for the pre- and post-tests, and the calculated Wilcoxon value and its statistical significance for the results of the collective defensive skills tests in basketball and for the experimental group.

Test	Pretest		Post-test		Sample Size	Wilcoxon Calculated value	Wilcoxon Tabulated value	Significance Level
	Mean	Std.	Mean	Std.				
Getting rid of over the barrier	0.798	0.430	1.44	.5300	6	8	2	Significant
Switching between defenders	0.677	0.510	1.54	.5320	6	3	2	Significant

By looking at Table (2) for the tests for the experimental group, we find that there is a difference between the pre- and post-tests for the experimental research group, which indicates that there are significant differences.

### Illustrating the results of group defensive skills tests in basketball (for the control group).

**Table 3:** The median values, the interquartile deviation for the pre- and post-tests, and the calculated Wilcoxon value and its statistical significance for the results of defensive skills in basketball for the control group.

Test	Pretest		Post-test		Sample Size	Wilcoxon Calculated value	Wilcoxon Tabulated value	Significance Level
	Mean	Std.	Mean	Std.				
Getting rid of over the barrier	0.657	0.509	.7910	.2250	6	0	3	Significant
Switching between defenders	0.879	0.605	.8790	.2110	6	3	3	Significant

By looking at Table (3) for the tests for the experimental group, we find that there is a difference between the pre- and post-tests for the experimental research group, which indicates that there are significant differences.

### Displaying the results of the pre- and post-tests and the Mann-Whitney value calculated for the results of the basketball defensive skills tests (control and experimental group)

**Table 4:** The values of the means and the spring deviation of the post-test and the calculated Mann-Whitney value and their statistical significance for the results of the defensive skills tests in basketball (for the control and experimental group)

Test	Pretest		Post-test		Sample Size	Wilcoxon Calculated value	Wilcoxon Tabulated value	Significance Level
	Mean	Std.	Mean	Std.				
Getting rid of over the barrier	.7910	.2250	1.44	.5300	6	11	15	Significant
Switching between defenders	.8790	.2110	1.55	.5320	6	0.7	0.04	Significant

By reviewing Table (4) which shows the value of the median, the interquartile deviation, and the Mann-Whitney value for the test of collective defensive skills, it is clear that there are significant differences in favor of the experimental group.

### Discussing the Results

Through the previous incidents, it is clear that there is a development in the defensive skills of young basketball players for the control and experimental group.

The researchers attribute the reason for the development that occurred in the control group to the influence of the regular curriculum set by the coach in addition to the continuity and regularity of the players in the training units. As for the development that occurred for the experimental group in defensive skills, the researcher attributes the reason for This development led to the development of static and mobile strength, which reflected positively on the performance of young players, as these exercises are consistent with the set goal, as the thigh and calf muscles were developed, which work mainly in the ability to move the defensive feet, as well as change directions by running quickly during matches. The exercises also resulted in a noticeable improvement and development in individual defense, which had a positive impact on collective defense, which is considered one of the most important types of defenses, as well as developing the spirit of teamwork by switching between defenders and creating health coverage to prevent the opponent from reaching the goal.

## **Conclusions and Recommendations**

### **Conclusions**

Based on the results of the study, the conclusions were:

1. There is a development of collective defensive skills (getting over the fence, switching between defenders) for young basketball players in the experimental group and the control group.
2. From what the research results showed, there is a clear and real effect of static and dynamic strength exercises in developing complex defensive skills (getting over the fence, switching between defenders) for young basketball players.

### **Recommendations**

Based on the previous conclusions, the researcher recommends:

1. Interest in developing complex offensive skills for young basketball players.
2. Interest in developing physical abilities in a way that precedes and accompanies the development of defensive and offensive skills for young basketball players.

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