

## **The effect of anaerobic exercises on some physical and skill variables in developing scoring accuracy for youth football players**

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DOI:

[https://doi.org/10.37359/JOPE.V37\(2\)2025.2273](https://doi.org/10.37359/JOPE.V37(2)2025.2273)

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**Article history:** Received 28/ March/2025 Accepted 29/ April/2025 Available online 28/ June/2025

### **Abstract**

The research comprises four chapters. The first contains an introduction and the importance of the study. The researcher addressed the importance of sports training science in the context of football, particularly since football relies on physical skill and functional aspects in translating the attack. The importance of the research lies in the effect of anaerobic exercises on some physical and skill variables in developing scoring accuracy. The problem with the research lies in the neglect of using anaerobic exercises on some physical and skill capabilities in daily training sessions at a precise level, which affected the weakness of their offensive performance, which is the fundamental foundation upon which match results are built. The research aims to prepare anaerobic exercises on some physical and skill variables in developing the scoring accuracy of youth football players and to identify the extent of the impact of anaerobic exercises on some physical and skill variables in developing the scoring accuracy of youth football players. The research areas included the human field and Al-Talaba Sports Club players in the youth category (under 19 years old), and the time frame was determined from 1/10/2025 to 3/25/2025. At the same time, the spatial field was the Al-Talaba Sports Club stadium. The researcher used the experimental approach. The research sample consisted of 20 players from the Al-Talaba Sports Club for the youth category. The researcher applied physical and skill tests in football. The players were divided into two groups: (10) players for the experimental group and (10) players for the control group. The researcher used the statistical package (SPSS) to obtain results. The researcher concluded that the effect of anaerobic exercises on some physical and skill variables and their effect on scoring accuracy, which the researcher prepared for youth football players, is valid, as it has a positive effect. Therefore,

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the researcher recommends that coaches pay attention to using anaerobic exercises on some physical and skill variables in their daily training curricula, which affect the scoring accuracy of youth football players.

**Keywords:** anaerobic exercises, physical and skill variables, developing scoring, youth football players.

## Introduction

The application of physical education and sports science research in general and training science in particular has a fundamental and effective role in developing the sports level and achieving high sports achievements, as training science is the basic science in physical education and sports science, and the rest of the other sciences are devoted to serving the science of sports training, and the development achieved in practical reality in various sports activities came as a result of applying theoretical research and studies in practical reality, which led to the advancement of the sports level, which depends on physical, skill, planning and psychological abilities. The advanced countries of the world have paid attention to the sports aspect. (Farhan et al., 2016) The importance of the research was represented by a great interest in training age groups by preparing them in the optimal way, as they represent the basic foundation for achieving the best achievements, depending on well-studied scientific planning and training according to scientific foundations, not on the basis of personal experiences that must be combined with these foundations to reach the best levels. Football is one of the games that has received increasing global interest in all countries of the world, as it has witnessed a tremendous development in the preparation of players. This development was characterized by a high level of physical, skillful, tactical and mental performance of players in terms of their possession of high capabilities and skills, their enjoyment of a good physical level and the development of their collective thinking to form a unit of thought for the team on the basis of the game of football, which requires all elements of physical fitness in order to perform it, as strength and its types, speed and its types, agility, flexibility and endurance play a fundamental role in making the player able to implement the skills of this deliberate game, in addition to his performance of game plans that have become the key that the coach manages to achieve victory. (HalalAtiyah et al., 2024) As for the problem the research represented the training process requires knowledge and practice and reliance on field experience without resorting to science that violates one of the basic rules for developing that experience and working on its growth. As a result of the researcher's observation and following up on the game's developments as a former player and current coach and watching most of the training units, most coaches are ignorant of the anaerobic exercises that football depends on and their training curriculum, especially in daily training units in special preparation and competition, which

performs its exercises with a high intensity maximum or less than maximum in line with the nature of the team's play, where speed in performance and accuracy in carrying out duties and how to link anaerobic exercises, which is reflected positively with the development of their abilities and this helps the team to invest in carrying out their duties. For this reason, the researcher pushed for preparing anaerobic exercises on some physical and skill variables in developing scoring accuracy in football. The research objectives were represented in preparing anaerobic exercises on some physical and skill variables in developing scoring accuracy for youth football players. And to identify the extent of the impact of anaerobic training on some physical and skill variables in developing scoring accuracy for youth football players. The research hypothesis was represented. There are statistically significant differences between the pre-test and post-test of the experimental and control groups in favor of the post-test. There are statistically significant differences between the post-tests of the experimental and control groups in favor of the experimental group. The research areas the human field represented the players of the Al-Talaba Sports Club for the youth category, aged (under 19 years). The time field was (1/10/2025) to (3/25/2025). The spatial field was the Al-Talaba Sports Club stadium located in Baghdad Governorate. Method and tools The methodology is important in scientific research, as the value of the research and its results are closely linked to the one followed by the researcher. The experimental method was used by designing two equivalent groups, the experimental and the control, to suit the nature of the research. The process of selecting the research sample and collecting data and information is considered. The researcher often resorts to determining his research community based on the phenomenon or problem that he chooses for his research, meaning that "the researcher chooses a sample that he sees as representing the original community that he is studying in a true representation)". Muhammad Hassan Alawi: 2000: 222 (The researcher chose his research sample intentionally from the youth of the Al-Talaba Sports Club for football, aged (under 19) years, numbering (20) players, and they were divided into two groups, a control group and an experimental group. He made the equivalence between the two research groups in terms of physical and skill capabilities, in addition to basic skills. The experimental group was applied using anaerobic exercises on some variables (physical and skill) and affected the individual attack in the control group, which was applied by the coach. For Arabic and foreign sources and references. The Internet. Football field. Signs of different heights. Stopwatch. Burke's tape measure. Football represented A For the exploratory experiment on a sample of (6) players from the youth of the Oil Sports Club from the youth league clubs for the 2024/2025 football season from Baghdad Governorate. The tests were conducted on 1/10/2025 at exactly four o'clock in the afternoon on the Oil Sports Club field, in order to know the time required to implement the tests, the difficulty that the researcher might face and to know the ability of the assistant work team on how to use the devices and tools as well as the time taken for the tests. The pre-tests were represented by the researcher, with the help of the work team, applying the combined tests (physical and skill) on

the main research sample of (20) players at exactly four o'clock in the afternoon on 1/11/2025 on the Al-Talaba Sports Club field. After completing the tests, the equivalence of the control and experimental groups in the pre-tests was extracted using the (T) test for unrelated samples. Number of anaerobic exercises on some physical variables AFor skill The researcher prepared anaerobic training for some variables (physical and skill) and their impact on the development of collective attack in football for the youth category under (19) years, distributed over (24) training units for a period of (8) weeks from 1/12/2025 to 3/12/2025, which is a sufficient period to cause changes in the implementation of movements and body positions towards exercises at a rate of three training units per week. The duration of the exercises used ranged from (35-40) of the main section. The researcher took into account the training level of the age groups, their abilities and levels of the research sample, relying on references and scientific sources in the science of sports training, in addition to the opinions of experts and specialists in football. The research also relied on the principle of innervation of exercises as a means to increase the intensity of performance. Simple exercises, starting with the implementation of exercises, reaching the complexity that helps the player to adapt, which facilitates mastering the scoring process towards different tests. The researcher conducted tests after completing the implementation of anaerobic exercises on some physical and skill variables and their impact on developing scoring accuracy on 13/ 3/2025 The researcher was keen to match the conditions and place for implementing the post-test to the pre-test as much as possible. Statistical methods: The researcher used the statistical package (spss) to process the data that was obtained. Arithmetic mean, standard deviation, simple (Pearson) correlation coefficient, independent samples t-tests, matched samples tests

## Results

Displaying the arithmetic means, standard deviation, calculated t-value and significance level for the pre- and post-tests of the physical tests under study for the individuals of the research sample. Table (1) shows the arithmetic means, standard deviation, calculated t-value and significance of the differences between the pre- and post-tests of the physical variables for the experimental and control groups.

T	V	ab	ne	T		P	s	wi	th	Ta	bu	ne
				Q	A	Q	A					
1	30	hig	T	3	0	3	0	4		2		s
			Z	3	0	3	0	2		2		s

2	P	W	T	S	E	C	4	0	,	4	0	3	2	S
2	P	W	Z	S	E	C	4	0	,	4	0	2	2	S

The tabular value at a significance level of (0.05) and a degree of freedom of 9 is (2.26).

Table (1) shows:

The results of the pre- and post-tests of the physical variables that the individuals of the experimental and control groups underwent in the variables (30m running from a high start - strength characterized by speed) The value of (t) (calculated for the control group and respectively 2.696-2.192) is greater than the tabular value of (t) at a significance level of (0.05) and a degree of freedom of (9) and amounting to (2.26), which means that the differences between the pre- and post-tests were statistically significant and in favor of the post-tests. While the value of (t) calculated for the experimental group for the physical variables (30m running from a high start - strength characterized by speed) respectively 2.696 is greater than the value of (t) (tabular at a significance level of) (0.05) and a degree of freedom of (9) and amounting to (2.26), which means that there are differences between the pre- and post-tests and in favor of the post-tests for the experimental group in these variables. Discussion of the 30m high start running test: Through the presentation and analysis of the results of the special test of high start running and lateral jump for a second, significant differences appeared between the pre- and post-tests in favor of the post-test and for both the experimental and control groups, despite the difference in exercises in the two groups, which indicates a development of this variable after the main experiment. The researcher attributes the development of the high start running variable for the control group to the coach's approach that he prepared as part of the training load components, which facilitates the development of the player's level. Since football requires this physical ability according to the different conditions and situations of playing football, especially jumping and rebound running, this is what Serag El-Din confirmed“ :Any movements that continue for a long period and increase the number of resistances that are to be overcome hinder running and make the player twist, turn, feint, jump and go back, so it is necessary for the football player to acquire the ability to run. As for the development that occurred in the experimental group, the researcher attributes this development to anaerobic exercises that the researcher prepared through continuing the scientifically organized training process, which enables the player to improve his level if These exercises were characterized by scientific and standardized components of the training load. Since the game of football requires the player to perform various and diverse movements throughout the game, such as rotation, turning, returning, continuous jumping, and zigzag running, the football player must acquire the characteristic of strength endurance. This is what Abu Al-Ala emphasized“ :In order to obtain real physiological adaptations, the athlete must organize regular and continuous training for a period of no less than (8-12) weeks “.These exercises helped the individuals of the research sample to develop, which the player benefits from during his performance, which positively affected the improvement of their level by





The tabular value at a significance level of (0.05) and a degree of freedom of (9) is (2.262). The table shows the statistical indicators for the results of the pre- and post-skill tests that the individuals of the experimental and control groups underwent in the skill variable, where the calculated (t) value for the control group, which is the largest (t) value for the tabular value at a significance level of (0.50) and a degree of freedom of (9), is (2.26), which means that the differences were statistically significant in favor of the post-test. While the calculated (t) value for the experimental group, which is greater than the (t) value of the tabular value at a significance level of (0.50) and a degree of freedom of (9), is (2.26), which means that the differences between the pre- and post-tests were statistically significant in favor of the post-tests. Discussion - scoring balls and handling through the presentation and download of the results of the test of speed endurance and running. Significant differences appeared between the pre-tests - post-test in favor of the post-test for both experimental and control groups despite the difference in the exercises given between the two groups, as development appeared in the post-test for the experimental and control groups. The researcher attributes this development in the control group to the coach in terms of continuing training that leads to improving the physical, (Zghayer & Kadhim, 2014) technical and functional level, as the coach's approach was characterized by linking the components of the training load, and since the game of football is special in terms of running over multiple distances, it requires training on the ability to endure speed, and this is what was confirmed by) Omar Abu al-Majd and Abu al-Ala Abdel Fattah (124 :2007 :The nature of football as a team game is characterised by rapid performance throughout the match and constant change in fast running for multiple distances, whether in defence or attack . (Issa et al., 2024) As for the experimental group, the development is attributed to focusing on the components of the training load in terms of intensity, volume, rest, and fast performance at less than maximum intensity, which led to creating a state of compatibility among the players to work at high speed for the longest possible period. This is what football requires with fast performance, for different distances, and for the longest possible period, in addition to the curriculum prepared by the researcher, which was prepared with extreme precision and standardized in line with the specificity of the game of football. This is what Muhammad Othman confirmed. " If the coach could determine the correct timing for recovery to occur, he would be able to gradually increase the training load within the training rhythm for the physical level of rebound handling: Through the presentation and downloading of the results shown in the table, it became clear that there was a noticeable development in the variable of rebound handling tests for the experimental and control groups, in favor of the post-tests. The researcher attributes this development in the experimental group to the development due to focusing on the components of the training load, which led to creating a state of functional adaptation among the players to work at high speed for the longest possible period. This is what football requires with different fast performance and for the longest possible period, standardized in line with the specificity of the game of

football. This is what Muhammad Othman confirmed. Osman: If the coach could stand on the correct timing for the recovery to occur, he could increase the gradual increase in the training load within the training rhythm that improves the skill aspect, which helps the player to master scoring in the post-tests to the effectiveness of the training that the coach prepared for the control group, which included training that works to visit the possibility that would work to improve the player's skill level, and this is what Hanfy Osman confirmed. The skill aspect is very necessary and must receive the same importance from the coach.

Table (3) shows the statistical world, the calculated and tabulated (t) values, and the significance level for the post-tests of the experimental group, physical tests.

Th	1	3
Variables	30m high start sprint	Power characterized
Unit of	seconds	seconds
P	3,37	4
Q	7	4
A	0,22	0
calculated t value	0,554	0,114
Tabular	2,10	2,10
indicati on	spiritual	spiritua l

The table value for the significance level (0.50) and degree of freedom (11) which is 2.10 shows the arithmetic means, standard deviation, calculated (t) value and significance of the differences between the results of the post-tests of the physical variables for the experimental and control research groups. The experimental and control groups in the variables Discussion: - Running a distance of 30 m from a high start There were significant differences between the post-tests of the experimental and control groups in favor of the experimental group, indicating a development in the variable of strength endurance. The researcher attributes this development to the training that he prepared, and this is what was confirmed by (Al-Taie: 2006: 82) since the characteristic of running 30 meters is of special importance in



the game of football, as it is characterized that half of the work accomplished during the match by the player in training is in the race, and this works to increase the training volume by increasing performance, as long work can measure the characteristic of strength endurance, in addition to the gradual volume and the rest periods between which were built on practical foundations that indicate the player's ability to perform the rest period between groups by the process, as the body was trained for muscular training within the training units in the prepared training curriculum, and this is what the specificity of the game of football requires, and this is what Abu Al-Ala confirmed. "The game of football requires the development of these characteristics because of their importance in the process of developing tactical mechanisms that aim to develop the muscular capacity for muscular endurance resulting from anaerobic energy in the tactical system, i.e. strength endurance". And speed tolerance. Discussion - The distinctive power of speed through the presentation and analysis of the results of the post-tests of the experimental and control research groups in the variable of the distinctive power of speed in the running test for a distance of 5 m, significant differences appeared between the post-tests of the experimental and control research groups in favor of the experimental group, indicating a development in the variable of speed endurance. The researcher attributed this development to the exercises prepared in the training curriculum. The game of football requires that the performance be characterized by speed endurance to increase the player's ability to perform short, medium and fast distances. During this, the nature of the player's steps varies from jogging to sprinting. Exercises were developed according to the requirements of the game. This was confirmed by Abu Al-Ala and Nasr Al-Din, since the game of football requires the player to have the ability and ability to stay on the field for the longest possible period of time during the match. This is because the player performs many different and varied positions according to the match conditions, from quick starts and at varying levels, whether in training or the match, as the speed rate is achieved after a certain distance due to the fatigue factor. Therefore, the player must have a high degree of speed. (Al-Azawi & Kathom, 2012)

Table (4) shows the statistical parameters, calculated and tabulated (t) values, and significance level for the post-tests of the control and experimental groups for the skill tests.

Th	Variabl es	Unit of	P o s		calcula ted t	Tabula r	indicati on
			Q	A			
1	A	d	1	2	3		spi rit
	To	d	1	4	3		
3	Reve rse	d	6	0	2		spirit
		d	4	1	2		

The tabular value at a significance level of (0.50) degrees of freedom (18) is(2.10)

The table shows the statistical indicators of the results of the post-tests, the skill tests that the members of the experimental and control groups underwent in the skill variable, where the calculated (t) value reached (3.367), which is greater than the tabular (t) value at a significance level of (0.50) and a degree of freedom of (18), which amounted to (2.10), which indicates that the differences between the post-tests were statistically significant between the experimental and control groups, in favor of the experimental group. Discussion of the results: The researcher believes that the development achieved in physical and skill performance is the result of exercises prepared by the researcher according to scientific foundations in training that contributed to raising the players' physical and skill capabilities, which play an important role, and the player's ability to endure performance on the field. Since the game of football is in constant development and speed of performance, (Kadhim & Majid, 2023) this is what was confirmed by (Abu Al-Ala Ahmed: 1997: 168) that the sum of exercises or directed physical efforts that lead to adaptations or functional change in the body's internal systems to achieve a high level of athletic achievement(.Through the presentation and analysis of the results shown in the tables, it was found that there were differences in the experimental and control variables in favor of the experimental group, which indicates a development in the skill aspects. The researcher attributes this moral development to the type of exercises used, which contained a

group of complex exercises in implementing the fast tactical match that aims to achieve progress in implementation with speed in performance, as there is hardly an exercise without tactical performance and under a real playing atmosphere. The researcher prepared special physical skill exercises in the training units. This led to the development of the players' exercise time, (Kadhim & Mahmood, 2023) as the continuation of the application necessitates the implementation process in the shortest appropriate time during the game in order to achieve the desired goal, which helped the player to master scoring from different distances and several directions. Because the game of football requires specificity in modern game plans and players performing the best tactical performance to achieve the desired goals and purpose, this is what was confirmed by (Mufti Ibrahim (74 :1994 :repeating the physical skill exercises that are similar to what is in the game, as there is a special feature that enables the player to shorten the time of perception and his ability to "Performing the match at the best level ". If the type of exercises that simulate the course of play and matches contributed greatly to the player's sense of position in the influential places, the player can face the goal as quickly as possible, and this has an impact on developing the player's ability. (Mufti Ibrahim: 1994: 143) confirms that the specialized sport of football allows for the emergence of the best and most accurate level of skillful and tactical performance, and at high levels of special physical qualities.

### **Conclusions**

- The researcher had a positive effect of using anaerobic exercises on some physical and skill variables in developing the scoring accuracy of youth football players.

- The anaerobic exercises he used led to the right foot developing a greater percentage of the strength and speed of the legs than the left foot, facilitating the scoring process.

- Players' mastery of attacking skills helps them develop more complex attacking plans against their opponents.

### **Recommendations**

- Emphasize the use of aerobic exercises and give them great importance in their curricula in special preparation and competitions for age groups in football to develop scoring accuracy.

·Focus on developing physical abilities as they are the basis for building the skill aspect that works to develop tactics.

·Focusing on building basic skills based on correct scientific foundations, which saves effort and time and improves the scoring performance of players.

## Appendices

Determine the tests used in the research:

Physical tests:

In order for the researcher to determine the physical abilities that a football player needs to perform his skill-based tasks, he surveyed many scientific publications and studies in the field of physical fitness to identify the most important and necessary ones for football players.

### 30m high start sprint test<sup>[1]</sup>

- Purpose of the test: to measure the translational velocity.
- Tools: Clock, timer, indicators, plaster (Bork), measuring tape in meters.
- Performance description: The tester is described directly behind the line, and upon hearing the start signal, he runs and tries to reach the finish line in the shortest possible time.
- Recording: Time is calculated in seconds to the nearest tenth of a second.(100/1)

Power characterized by speed<sup>[2]</sup>.

- Purpose of the test: To measure the speed-specific strength of the leg muscles.
- Tools: Stopwatch – Indicators – Plasterboard – Measuring tape in meters
- Performance description: The tester stands at the starting line, with the jumping foot on the starting line, and the free leg

Free to the rear and upon hearing the start signal, the tester begins to hop for a distance of 30 meters. Each tester is given two attempts, the best of which is recorded.

Time is measured in seconds to the nearest tenth of a second.(100/1)

To test the ball scoring<sup>[3]</sup>.

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●Purpose of the test: To measure scoring accuracy.

●Tools used: seven footballs, a marker, a rope to divide the goal, and a goal divided into specific areas.

●The method of performance is to distribute the balls in the penalty area, and start running from behind the marker on the penalty arc towards the first ball, then aiming, then turning around the marker, then heading for the second ball, and so on with all the balls, and the goal is scored higher than the ground level, and the player is free to choose which foot to use, provided that the performance is done from a running position.

●Registration method:

The score is calculated by the sum of the scores the player gets from scoring the seven balls, as follows: The player is awarded (3) scores if the ball enters the two designated areas.(2,1)

The player is awarded one point if the ball enters the designated area.(3)

The player is awarded zero if the ball goes out of the goal.

To handle the apostate<sup>l4))</sup>

●Purpose of the test: To measure handling accuracy and speed.

●Tools: wall – stopwatch – balls – tape measure – gypsum (Bork)

●Test description: The tester stands behind the line drawn for him, which is (8 m) away from the wall, and the tester's face is facing the wall. Upon hearing the start signal, the tester kicks the ball towards the wall in turns. Each tester is given two attempts, the best of which is recorded, noting that the test time is (20 seconds).

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