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## Compound skill performance and its relationship to the level of lactate and some physical characteristics of football players

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### Abstract

The aim of the research is to identify the relationship between the complex skill performance at the level of lactate and some physical characteristics of football players. The sample of the research consisted of (20) players of the Samarra University football team for the academic year (2018-2019), and the statistical means represented by the following (percentage law, arithmetic mean, standard deviation, simple correlation coefficient, torsion coefficient) were used by Statistical bag (SPSS The results showed that there is a significant correlation between the skill complex performance and the concentration of lactate and some physical characteristics under study represented by (transitional speed, explosive power of the muscles of the legs, the speed characteristic of the muscles of the legs).

**Keywords:** compound skill performance, lactate, football

### 1. Introduction

The ultimate goal of scientific research that focused on the sports aspect has always been to create a generation of young people on whom society depends in showing the capabilities and capabilities of its members in various fields and sports. (Al-Badri *et al.*, 2020) <sup>[2]</sup>, (Ibrahim *et al.*, 2019) <sup>[7]</sup>. The game of football is one of the team games that require its practitioners to have special specifications that enable them to perform the various movements and skills due to the need for these movements in terms of functional, physical and mental capabilities, as well as planning and skill aspects. (Ibrahim *et al.*, 2020) <sup>[2]</sup> It is characterized by being of a highly competitive nature because of its distinguishing characteristics, as it achieves a high level of excitement, suspense, fun and aesthetic goals, and that this progress is not the result of chance, but rather the result of the use of training methods and methods and scientific, technical and research efforts that are made for long periods of time to search and investigate various factors The functional and physical components that serve their skill aspects, in addition to the importance of the motor aspects associated with them the need for diversity in the physical requirements and that the neglect of one of those aspects lead to a point of weakness in the training process and then twice in the level and tastier may be reflected on the level of performance skills in football. Football is one of the sports activities that players need to maintain good and continuous performance with high effort and resistance to fatigue in addition to maintaining the skill level, as it is one of the games that depend on the anaerobic energy system, so it is necessary to take into account the accumulation of lactate left by this system In the muscles and blood, which in turn will lead to muscle fatigue when it increases. The concentration of lactate is one of the most important indicators that are currently used in training, which has an important impact on the fatigue process and how to develop the athlete functionally to adapt and withstand the accumulation of acid in the muscles and blood. A player who has a high level of skill alone cannot lead to good results if he does not possess a similar level of skill Functional and physical aspects, and on the contrary, the physically prepared and functionally qualified player has the ability to fulfill the duties assigned to him within the game and competition (Thbat, 2008). From the above, the importance of the research lies, as the researcher decided to research and investigate the nature of the relationship between complex skill performance and lactate concentration and some physical.

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Characteristics of the football players of Samarra University, and what this research may provide from a scientific addition in the sports field in general and in the game of football in particular

### 1.1. Research problem

Through the researcher's follow-up to the training and competitions of the Samarra University football team, he noticed the presence of some errors and various skill failures, which appear clearly after the performance of the effort for long periods, which is attributed to fatigue resulting from weakness in some functional capabilities and physical qualities necessary in the player's resistance to fatigue, which prompted the researcher to answer About the following question:

What is the nature of the relationship between complex skill performance and lactate concentration and some physical characteristics of Samarra University football players?

### 1.2. Research Objectives

- To identify the relationship between the skill performance of the complex and the concentration of lactate among the football players of the University of Samarra.
- Recognizing the relationship between the skill complex performance and some physical attributes of the Samarra University football players.

### 1.3. Research assignments

- There is a significant relationship between the skill performance of the complex and the concentration of lactate among the players of the Samarra University football team.
- There is a significant relationship between the complex skill performance and some physical characteristics of the Samarra University football players.

### 1.4. Definition of Terms

#### • Complex skill performance in football

The complex skill performance in the football game defines those moves that the player makes alone to participate in the group plan, and the player's strength in the individual plans leads to the strengthening of the collective plans (Zuhair., 1999, 232) <sup>[19]</sup>.

#### • Lactate concentration

It is called (the lactic acid system) and it is a system to give energy after the depletion of phosphates and the restoration of a complex (ATP) Within the muscles, it is the anaerobic breakdown of glycogen, as Bahaa El-Din defines the safety of lactic acid as " the final form of anaerobic glycogen consumption, but this percentage increases when high intensity sports activities are increased, or it is the final product of the glucose decomposition process without oxygen" (Bahaa, 1990, 107).

## 2. Similar study

### 2.1.1. Study (Taha, 2009) <sup>[17]</sup>

The relationship between the skill performance of the skill of rolling the ball for soccer players and some elements of physical fitness.

The research aimed to identify the relationship between the skill performance of the skill of dribbling with the ball and some elements of physical fitness. Basic education in football at Al-Mustansiriya University for the academic year (2009-

2010) at ages between (20-22 years) of (16) players were chosen deliberately, and the researchers used the following statistical means (arithmetic mean, standard deviation, simple correlation coefficient) and the researchers reached To the existence of a significant relationship between the performance of the skill of rolling and the following physical fitness elements (flexibility, speed, agility, longevity, speed length, strength characteristic of speed), (Taha, 2009) <sup>[17]</sup>.

### 2.1.2. Study (Saif, 2018) <sup>[15]</sup>

The aim of the research is to identify the relationship between the endurance of speed and the accuracy of the performance of some offensive skills in basketball, as well as to identify the relationship between the level of lactate in the blood and the accuracy of the performance of some offensive skills in basketball. -2017 They are clubs (Dujail - Samarra) and the research sample was chosen randomly and numbered (14) players were divided into (7) players for each club, and after collecting the data, it was processed statistically through the statistical bag SPSS Using the arithmetic mean, standard deviation and simple correlation coefficient (Pearson), the researcher concluded that there is a significant correlation between the speed endurance test and the accuracy of performance of some complex offensive skills for the research sample, as well as a significant correlation between each of the complex offensive skills and the level of lactate for the research sample (Saif, 2018) <sup>[15]</sup>.

## 3. Research methodology and field procedures

### 3.1. Research Methodology

The researcher used the descriptive approach in the style of correlative relations for its suitability and the nature of the research.

### 3.2. The research community and its sample

The research sample consisted of (20) players of the Samarra University football team for the academic year (2018-2019), who were chosen deliberately.

### 3.3. Tools and means of collecting information

#### 3.3.1. Tools

- Lactate measuring device type lactate pro 2 Japanese made
- Lactate measuring tape strips
- Finger prick device for obtaining a small sample of blood
- Signs.
- Stopwatch.
- Footballs.

### 3.4. Compound skill performance test, measurement of lactate concentration and physical tests:

**3.4.1. The name of the test:** Receiving, then running, then shooting (Sami, 2009, 72) <sup>[16]</sup>. (The two attempts were made at maximum intensity without a rest period in between)

#### 3.4.2. Measurement of lactate concentration

The researcher did With the help of the assistant work team, a sample of blood was drawn after the sample performed the offensive skills test, then given a rest period of (5) minutes, as (5) minutes is a good and appropriate period for the purpose of drawing blood after completing the exercise so as to give an opportunity for the lactate to exit the muscle into the bloodstream <sup>[1]</sup> We begin by placing the drill in the perforating device, then the drill is placed on the side of one of the fingers, then the drill is pressed to penetrate the surface

of the skin. A sample of blood about 5 micrometers in size is extracted and placed directly on a lactic acid measuring tape. Strips It is placed in the measuring chamber of the device Lactate Pro 2 Then the device beeps indicating that the blood sample touched the measuring tape and the measurement process began, then the 15-second countdown process begins, after which the reading of the lactate level in the blood will appear.

**3.4.3. Physical trait tests under consideration**

- Leg strength test
- Test name: Bend and extend the knees in 20 seconds (from a standing position)
- (Gollnick, 1986,39)
- Maximum transition speed test
- Test name: 30-meter flight test.
- (Mohammed, 1987, 364) [15].
- Legs explosive strength test

**The name of the test: the wide jump from stability (Ali, 2004, 170) [4].**

**3.5. Main research experience**

The main research experiment was conducted on the research sample by applying (skilled performance test complex in football, measurement of lactate concentration, speed characteristic test for the legs, maximum speed test, explosive power test for the muscles of the legs) and on the stadium of the Faculty of Physical Education and Sports Sciences / University of Samarra.

**3.6. Statistical means**

Statistical bag was used SPSS) to extract the following statistical variables:

- Percentage
- SMA.
- Standard deviation.
- Distortion coefficient.
- Simple correlation coefficient (Pearson).

**4. Presentation, discussion and analysis of the results**

**4.1.** Presenting the results of the relationship between the composite skill performance test, the lactate concentration and the physical characteristics tests under study:

**Table 1:** Statistical parameters of the composite skill performance test, lactate concentration and physical traits tests under investigation

T	Physical Traits	Measuring Unit	S	P	Skill performance		Correlation coefficient	Sig	Morale
					S	P			
1	Lactate concentration	ml/mol/liter	15.16	0.55	2.77	0.48	0.89-	0.000	moral
1	Transition speed	Second	3.87	0.45	2.77	0.48	0.17-	0.042	moral
2	Explosive power of the legs	Meter	2.09	0.39	2.77	0.48	0.32	0.039	moral
3	speed power	Repetition	22.6	2.88	2.77	0.48	0.07	0.022	moral

\* Significant if the significance level value (Sig) < (0.05).

It is evident from Table (1) that the arithmetic mean of (lactate concentration, transitional velocity test, legs explosive strength test, speed characteristic strength for both legs) for Samarra University football players was, respectively, (15.16-3.87-2.09-22.6) with a standard deviation of respectively (0.55 -0.45 -0.39-2.88), while the arithmetic mean of the complex skill performance test was (2.77) with a standard deviation (0.48), and the value of the simple correlation coefficient reached (0.89) between the skill complex performance and lactate concentration, while it reached (0.17) between complex skill performance and transitional speed, and the value of the simple correlation coefficient between complex skill performance and explosive power was (0.32), and its value was (0.07) with the speed characteristic of the two legs, and the values of the significance level were (0.000-0.042-0.039-0.022), all of which are smaller than The error level is (0.05), which indicates the existence of a significant correlation between the skill performance test and the concentration of lactate acid and the tests of physical characteristics in question among the football players of the University of Samarra. Ralden) that “lactic anaerobic capacity increases and the concentration of lactic acid in the blood increases as a result of the increase in the volume of energy consumed by breaking down glucose without oxygen and the athlete’s ability to perform, bear fatigue, and increase the accumulation of lactic acid in the blood” (Abu El-Ala, 2003, 308) [1].

The same applies to the complex skill performance that the players performed during the tests, as (Muwafaq Asaad) mentioned that “lactic acid accumulates due to the use of glucose in the blood and glycogen in the muscles, then the liver reaches its maximum during the high intensity effort that lasts from (60-180) seconds.” (Muwaffaq, 2010, 33).

Also, those physical qualities of football players are among the necessary requirements to reach the required skill level. The player possesses a good level of physical fitness elements that qualifies him to carry out his skill duties. The game of football is characterized by the difference and diversity of its skills from handling, suppression, rolling with the ball and scoring in different positions, in addition to running with and without the ball. And doing other movements such as jumping, squatting and zigzag running, as all of these skills and movements require the football player to have a high level of physical qualities, and the percentages of need for these qualities vary according to the playing lines and the duties assigned to the player, as the weakness of these abilities leads to a weak level And then the inability to keep pace with the requirements of modern playing, and the emergence of a direct relationship between the physical characteristics under study confirmed this. Of the most important physical abilities that a football player needs, the nature of the game, defensive and offensive tactics, and most of the skills of football effectiveness are implemented through the use of Or the explosive power to perform, because it is one of the basic pillars for building the athlete physically and to reach the best level” (Mounir, 2010, 33), and the force distinguished by speed is one of the basic physical abilities on which the game of football is based and is composed of strength and speed, which can be through which to improve performance skills and showed Trdah including the relationship between performance skills in the current study of the need for a football player for this trait task of aspects of muscle strength and this is confirmed (Ali Fahmi pick, 1992) [3] as " one of the muscular elements of the force required by the football performance due to the evolution of winning In the different playing plans, in the cases of defense and attack,

and the implementation of these required duties as quickly and as strongly as possible" (Ali Fahmy Al-Baik, 1992, 117)

[3] The game of football is also characterized by the speed of performing its skills and the speed of players' transfer and exchange between the different lines of play, as we find that some advanced teams depend The element of speed in surprising the opposing team and achieving victory, and it became a key to playing for advanced teams " because the nature of the game, the method of physical and skill performance, the speed of the game's performance in defense and attack, as well as the speed of handling and Receipt and speed of performance in scoring and speed of performance of some skills in defense and attack" (Mounir Mahmoud Jassim, 2010, 9) [13] and this is what the current study showed of the direct relationship between complex skill performance and the transitional speed variable, and thus the researchers reached from these results to achieve the research hypothesis.

## 5. Conclusions

- The increase in the accumulation of lactate negatively affected the skillful performance of football for the study sample.
- The skill performance of the complex in the football game showed a direct relationship with the transitional velocity variable among the football players of the Samarra University team.
- The skill performance of the complex in the football game showed a direct relationship with the explosive force variable for the two men among the players of the Samarra University football team.
- The complex skill performance in the football game showed a direct relationship with the speed-distinguishing force variable for the two legs of Samarra University football players.

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