

DOI: <https://doi.org/10.54702/sfy7bx97>**Neuromuscular compatibility and its relationship to the speed of skill performance among Abbasiya Youth Forum football players**Ali Hamid Abadi ⁽¹⁾✉, Ahmed Abdel Moneim Hasnawi ⁽²⁾✉

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Received: 17/01/2024, Accepted: 21/02/2024, Published: 30/04/2024This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/), © Modern Sport**Abstract**

Performing a movement requires a degree of compatibility between the nervous and muscular systems, and the importance of neuromuscular compatibility is highlighted by the beauty of performance in the game of football, and this comes through mastering its basic skills as well as the integration of physical performance, and this in turn leads to mastering skill performance and scoring goals, which is the goal of this game, which Players strive to reach it. Given that the researchers are interested in this game, players and observers of its matches noticed that there is a clear defect and weakness in the speed of skill performance, especially when the players perform multiple playing positions on the playing field, which require combining two skills or using compatibility between the eyes and feet, or the eyes and the rest of the body parts, which is a basic requirement for integration. Technical Performance The aim of the research is to identify the relationship between neuromuscular compatibility and the speed of skill performance among Abbasiya Youth Forum football players. As for the research hypothesis, there is a significant correlation between neuromuscular compatibility and the speed of skill performance among players of the Abbasiya Youth Forum in football. The descriptive approach was used in order to suit it and the nature and problem of the research. The research sample consisted of (18) players from the Abbasiya Youth Forum, and they were chosen by lottery to implement the curriculum. The most important conclusions were that there is a significant correlation between neuromuscular compatibility and the speed of skill performance among the players of the Abbasiya Youth Forum in football. As for the most important recommendations, there is an emphasis on coaches testing their teams periodically for compatibility and speed of skill performance, as well as paying attention to developing neuromuscular compatibility among football players and the exercises used by them. Trainers must develop neuromuscular compatibility during performance.

Keywords**muscular compatibility, speed of skill performance****Introduction:**

What distinguishes the game of football is that it is one of the most widespread games in the world, and many efforts are made to prepare various sports teams according to scientific rules and foundations. This has become clear because the game requires that its players possess high skills and at a very high level. In the modern era, the game of football has taken a new form that keeps pace with modern developments in all activities and scientific fields. The game has developed to maintain its overwhelming popularity in all countries of the world. This rapid development has created multiple models for it in all aspects

required by the competitive performance of the game. It has become a matter of requiring a high degree of performance. Skills, with the need for speed, accuracy, and continuous movements throughout the match with high efficiency, and since the first task of sports training is the integrated preparation of players in all aspects, whether skillful, physical, psychological, tactical, or functional, that is, the aspects that are related to excellence in this game, which requires Receiving, delivering, quick movement to take space, quick scoring, as well as constantly changing direction on the field, sudden stops, dribbling, and sliding on the ball, including, in

particular, compatibility, as this game requires compatibility between the eye and the foot, or between the eye and the rest of the other parts of the body while playing. Skill performance, and this depends on the integrity of the nervous and muscular systems, in order to enable the player to combine several movements in order to demonstrate the skill task in the required movement pattern with complete accuracy and fluidity. (Saad) pointed out that “compatibility is the individual’s ability to control the work of the different parts of the body involved in the performance.” A specific motor duty and linking these parts with a unilateral, flowing movement with high effort to take on that motor duty” (4). (Abu Al-Ala) stated that “the quality of compatibility has a large and important role in the performance of the football player from a physical and skill standpoint, and this can be clearly seen in the performance.” The wonderful skills and difficult technical movements performed by athletes with high skill levels, as they will be performed with ease of movement and few errors (1). The researchers believe that the fundamental importance in the emergence of the element of compatibility as a special movement among football players lies in mastering all skill and motor performance easily and simply, and helps the player to avoid mistakes during competition and the ability to perform fast skill in various degrees, and from here the importance of research in the study emerged. Neuromuscular compatibility and its relationship to the speed of skill performance among Abbasiya Youth Forum football players. The problem of the research is that movement performance requires a degree of compatibility between the nervous and muscular systems, and the importance of neuromuscular compatibility becomes clear in the aesthetics of performance in the game of football, and this comes through the integration of physical performance and mastery of basic skills, which in turn leads to integration and mastery of skill performance and scoring goals, which is The goal of this game that players seek to achieve. Given that the researchers are interested in this game, players and observers of its matches noticed that there is a clear defect and weakness in the speed

of skill performance, especially when the players perform multiple playing positions on the playing field, which require combining two skills or using compatibility between the eyes and feet, or the eyes and the rest of the body parts, which is a basic requirement for integration. The technical performance of these skills and compatibility are very important requirements for mastering the speed of skill performance in football. The research aims to identify the relationship between neuromuscular compatibility and speed of skill performance among Abbasiya Youth Forum football players. The research assumes that there is a significant correlation between neuromuscular compatibility and the speed of skill performance among Abbasiya Youth Forum football players.

Research fields:

- Human field: Abbasiya Youth Forum players (2023-2024).
- Time field: (25/10/2023) to (12/12/2023)
- Spatial field: Abbasiya Youth Forum Stadium

Research Methodology:

The researchers used the descriptive method.

Community and sample research:

The research community was deliberately selected from the players of the Abbasiya Youth Forum for the sports season (2023). The research community reached (22) players aged (18-25) years. After that, the researchers selected the sample on which the tests will be based by drawing a lottery. It included (18) players. It constituted a percentage of (81.81%)

Homogeneity of the research sample:

In order to determine the homogeneity of the research sample members in the variables of height, weight, and chronological age, the researchers used the skewness coefficient, which showed the homogeneity of the sample as shown in Table (1). The skewness coefficient was between (0.725, 0.12, 0.20), and these values are limited to (-3, + 3) Which indicates the homogeneity of the research sample.

Table .1 Homogeneity tests for Length, chronological age, weight, and skewness coefficient value between the two experimental groups.

Variables	Measuring unit	Mean	Median	Std. Deviations	Skewness
Length	Cm	172.65	173	1.794	0.725
Weight	Kg	69.712	73	1.386	0.12
Chronological age	Year	19.5	19.5	0.616	0.20

Devices and tools used in research:

Dell laptop and SONY camera. (1) - Medical scale to the nearest half a kilogram - A device for measuring height to the nearest half a centimeter - A manual calculator - (2) C.D. tape - A measuring tape 30 meters long - (7) types of footballs. Molten - Circular plates that are formed in a circular shape and have different diameters as needed - Number signs (15) - Whistle number (3)

- Electronic stopwatch number (2) - Tape to divide the target

Data collection methods:

Observation, Arab and foreign sources, testing and measurement, the global Internet Scientific foundations of tests (compatibility and speed of complex skill performance) for soccer players Table (2)

Table .2 shows the validity, Stability, and objectivity of the test of compatibility and speed of skill performance under investigation

No.	Skills test	measuring unit	Stability coefficient	Self-validity coefficient	Objectivity
1	Numbered circles test to measure eye-leg compatibility	second	0.86	0.91	98%
2	Football skill performance test	second	0.88	0.92	100%

The following variables were used in the research: The variables in the research were determined by the researchers and the two variables were chosen (compatibility, speed of skill performance).

Determine tests for the research sample.**First Test: Compatibility: (Muhammad) (5)**

- Test name: Numbered circles
- The aim of the test: to measure the compatibility between the eyes and the legs
- Used equipments :
 - Electronic stopwatch.

- Flat land on which (8) circles are drawn, each with a diameter of (60) cm, Figure No. (1).
- The circles are numbered as shown in the figure.
- Performance method: The experimenter stands inside circle (1) and when he hears the start signal, he jumps with his feet together to circle (2), then to circle (3), then circle (4), and so on until circle (8), and this is done at the maximum speed.
- Recording: The laboratory records the time it takes to move through the eight circles.

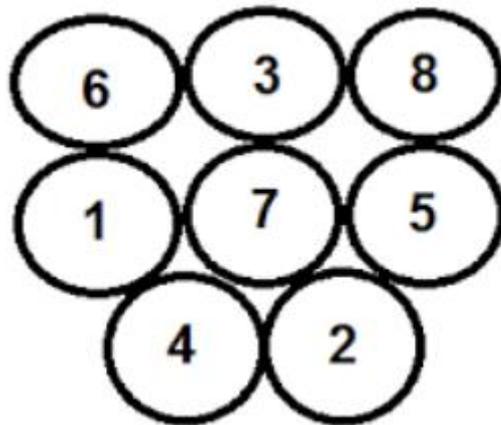


Figure (1) shows the muscular compatibility test

Determine the speed test for complex skill performance in football for the research sample:

Football skill performance test (Ahmed and Ali) (2)

- Test name: Football skill performance test
- Objective of the test: to measure skill performance in football
- Necessary tools: half a football field, an electronic stopwatch, a whistle, (4) obstacles, (6) signs, (3) flags, a measuring tape, one football, and one bench.
- Description of the test: The player begins running from the specified starting point at the corner of the penalty area located with the goal line, where there is a ball at a distance of (10 m) from the starting point. He must roll the ball between four hurdles, the distance

between each pair (4 m in length and 2 m in width), then he completes Rolling the ball up to the midfield line, to meet a post that passes on either side of it, and at a distance of (5m) from this post there are four marks at different distances, which are respectively (1,5, 1, 2, 1m), and then it heads after passing by the last post. To the goal, and at a distance of 10 metres, there is a post for him to pass by and pass the ball to the Swedish bench tilted with the running line so that the ball bounces to him and he kicks it towards the goal.

- Recording: The time is calculated from the moment of the start to the moment of scoring, and 10 of a second is added, in the event that the player collides with one of the blocks and falls to the ground. Figure No. (2) shows the test.

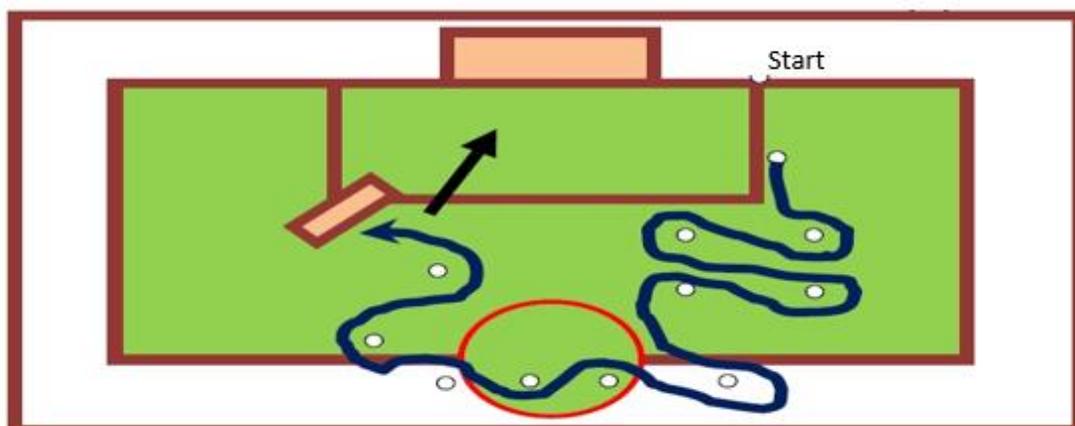


Figure (2) shows the football skill performance tests

Exploratory experiment:

The researchers conducted a reconnaissance experiment on November 1, 2023, at three o'clock in the afternoon, at the Abbasiya Youth Forum Stadium, on a sample of the research community, numbering (4) players representing the Abbasiya Forum. They were excluded in the main experiment, and the purpose of the experiment was as follows:

- Ensure that the research sample understands the research tests
- The time the experiment takes
- Difficulties and obstacles facing work
- Ensure the efficiency of the assistant work team

Table .3 shows the arithmetic means and standard and significant deviations for the relationship between neuromuscular compatibility and speed of skill performance in football.

No.	Tests	Arithmetic means	Std. Deviations	Correlation
1	Numbered circuit compatibility test	5.2	0.53	0.94
2	Skill performance	30.3	0.99	

Discussion:

From the table we notice that the arithmetic mean reached 5.2 seconds in the neuromuscular compatibility test for Abbasiya Youth Forum players, with a standard deviation of 0.53, while the speed of skill performance reached 30.3 seconds, with a standard deviation of 0.99. Therefore, the value of the standard deviation for both tests is less than (3), which gives acceptability to the results obtained by the players as a result of conducting the tests. As for the value of the correlation between the values of neuromuscular compatibility and the speed of skill performance of the players of the Abbasiya Youth Forum in football, it reached 0.94, and this value means that there is a strong correlation. Among the variables under study. The researchers believe that the results between neuromuscular compatibility and the speed of skill performance in football are logical, requiring compatibility in the movement of the eyes with the movement of the legs, and in the game of football in particular, skill performance plays an important and major role in achieving positive results for the benefit of the team that refrains from a high level of that

Main experience:

It consisted of conducting a neuromuscular compatibility test and a speed test of skill performance in football, which the researchers applied to the research sample, which numbered (18) players over a period of two days from 2/11/2023.

Statistical methods: The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Results:

Presentation, the results of the differences between the pre- and post-tests of the experimental group in the research variables

performance, because this leads the team to mastery. And the success of a style of play, which leads to confusion and instability of the opposing team and makes it unable to control the course of play, as skill performance means the player's ability to perform technical skills with speed and high accuracy or appropriateness, and the harmony and integration between these aspects with each other shows the level of that performance what makes him It is characterized by many characteristics, such as economy of effort as a result of involving specific muscle groups to perform the motor requirement, and this reduces the appearance of fatigue, as well as accuracy in performance as a result of accuracy in the nervous instructions that reach those muscles, which shows high control of the nervous system over the muscular system, especially for the muscle groups involved in the motor requirement. (Muhammad) stated that "it is possible to develop (compatibility) by focusing on movements in which the player uses more than one part of his body when performing, in addition to sudden movements that are unexpected for the players, with a focus on accuracy and high speed in

performance and continuous repetition” (6) and the speed of skill performance has a close relationship with the quality of nervous and muscular compatibility.” (Hanafi Mahmoud Mukhtar) points out that the ability of the player’s skill performance “is one of the important abilities of the football player, and in order for the player to be able to perform skills during matches at the ideal speed, the coach must pay attention to choosing the exercises.” Which is exactly similar to what happens during the match, and he trains the players on it with a gradual progression of performance until the players become accustomed to performing it with the same force and speed with which it should be performed during the match” (3).

as it is mentioned in the similar studies (7) , (8)

Conclusions:

- There is a significant correlation between neuromuscular compatibility and speed of skill performance among Abbasiya Youth Forum football players.

Recommendations:

- It is necessary for coaches to periodically test their teams for neuromuscular compatibility and speed of skill performance
- Need for coaches (especially for youth teams) to pay attention to developing the level of skill performance among players for the purpose of keeping pace with modern football’s physical, skill and tactical requirements.
- Exercises used by trainers must develop neuromuscular compatibility during performance

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التوافق العضلي العصبي وعلاقتها بسرعة الاداء المهاري لدى لاعبي منتدى شباب العباسية بكرة القدم
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1 & 2 وزارة التربية / مديرية تربية النجف

ان اداء الحركة يتطلب درجة من التوافق ما بين الجهازين العصبي والعضلي وتبرز اهمية التوافق العصبي العضلي بجمالية الأداء في لعبة كرة القدم وهذا يأتي من خلال إتقان المهارات الأساسية لها فضلا عن تكامل الأداء البدني وهذا بدوره يؤدي إلى إتقان الاداء المهاري وتسجيل الأهداف وهو غاية هذه اللعبة والتي يسعى اللاعبون إلى الوصول إليها . ومن خلال كون الباحثان مهتمين بهذه اللعبة لاعبين ومتابعون لمبارياتها لاحظوا هناك خلل وضعف واضح في سرعة الاداء المهاري وخاصا عندما يؤدي اللاعبون مواقف متعددة للعب داخل أرضية الملعب والتي تتطلب الدمج بين مهارتين أو استخدام التوافق بين العينين والقدمين أو العينين وباقي أجزاء الجسم والتي تعد مطلبا أساسيا لتكامل الأداء الفني اما هدف البحث هو التعرف على العلاقة بين التوافق العضلي العصبي وسرعة الاداء المهاري لدى لاعبي منتدى شباب العباسية بكرة القدم . اما فرض البحث وجود وجود علاقة ارتباط معنوية بين التوافق العضلي العصبي وسرعة الاداء المهاري لدى لاعبي منتدى شباب العباسية بكرة القدم وقد تم استخدام المنهج الوصفي وذلك لملائمته وطبيعته ومشكلة البحث وتكونت عينة البحث من (18) لاعبا من منتدى شباب العباسية وتم اختيارهم بطريقة القرعة لتنفيذ المنهج وكانت اهم الاستنتاجات توجد علاقة ارتباط معنوية بين التوافق العضلي العصبي وسرعة الاداء المهاري لدى لاعبي منتدى شباب العباسية بكرة القدم واما اهم التوصيات التأكيد على قيام المدربين باختبار فرقتهم اختبارات دورية للتوافق وسرعة الاداء المهاري وكذلك الاهتمام بتطوير التوافق العضلي العصبي لدى لاعبي كرة القدم والتمرينات المستعملة من قبل المدربين يجب ان تنمي صفة التوافق العضلي العصبي اثناء الاداء.

ملخص البحث

التوافق العضلي ، سرعة الاداء المهاري

الكلمات المفتاحية