



# The Speed of Injury and Its Concussion Among Some Basic Skills for Youth Football

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**Abstract:** The current research aimed to identify the speed of motor response to some basic skills in youth soccer players, and to identify the relationship between some basic skills and the speed of motor response in youth soccer players. The descriptive method was used by the researcher in the form of correlations to fit the research question. The research community was represented by young football players of the Border Sports Club in football, and the number of players (26) players were selected by the random method, and the researcher chose the research sample by random method and consisted of (18) players, the goalkeepers were excluded from the lottery and their number (3) and the sample was excluded from the exploratory experiment and their number (5). The speed of reaction test and the basic skills test were determined after being presented to a group of experts and specialists who considered it one of the most important basic skills in the game of football, as most scientific sources emphasize that it is the basis of the learning and training process in the game of football. And because mastering this skill will quickly help improve the performance of other skills. The researcher relied on the statistical package (SPSS) version (25). The researcher concluded from her study that young soccer players are characterized by fast motor response, and that the speed of motor response has an effective role in the accuracy of some special skills, including the skill of handling, rolling and shooting for young soccer players.

**Keywords:** Motor Response, Youth Football, Basic Skills

## Introduction

Football has received more attention than any other sporting game at all levels, both official and popular, and as a result of this interest, specialists have made great efforts to develop the game. Skill alone is no longer the decisive factor as it was more than half a century ago (Gronwald, 2022; Ribeiro-Alvares, 2020; Whalan, 2019). Rather, physical aptitude and mental skills have become with the variables they contain, whether motor or physiological, not to mention physical measurements that have an impact on the development of the game, so mental skills have a major role in the motor performance and basic skills of the game practiced by the athlete in particular, including football, through the economy of excessive movements, economy of effort and accuracy of decision-making, accurate information and various motor programs are stored, which lead to accurate and appropriate motor responses to reach the overall performance required by the game of football (Buckthorpe, 2019; Li, 2020; López-Valenciano, 2021).

Football is one of the games with an abundant ocean of stimuli and variables during performance, and it needs mental processes such as attention, high concentration, sensation and perception, as Harrah pointed out that mental training is one of the most important modern methods used to acquire and develop motor skills in addition to mental training, which is an important dimension in the game of football, as its importance appears in the player's sense of movement of body parts during performance and the extent of control over changing body position during performance with and without the ball as required by the motor duty in the game of football (Baugh, 2019; Crossley, 2020; Ekstrand, 2023).

The development of mental skills in soccer begins at this age stage due to the specificity of this sport and its difference from other sports, where there is a huge amount of variables and different reactions during the game (Bisciotti, 2019; Jones, 2019; Langhout, 2019). In this case, mental skills play an important and distinctive role in players' absorption of information and acquisition of abilities, including the ability to accelerate motor reactions, as it requires the player to realize the sense of the ball, distance and time and direct it to the desired place, and for this reason, the researcher, being an academic specialized in this field, tended to highlight the by providing the learner with verbal stimuli to develop the accuracy and speed of their motor response accompanying the skillful learning of some football skills and through the use of specialized tests for these skills and measuring the extent of the next unexpected motor response similar to realistic game situations and basic skills (Johnson, 2020; Mack, 2020; Rommers, 2020; Werner, 2019).

The research objectives are to know the speed of motor reaction to some basic skills in young soccer players and to identify the relationship between these basic skills and the speed of motor reaction in young soccer players. The research hypothesis is that there is a significant correlation between motor reaction and some of the basic skills under study for youth soccer players. The study will be conducted in the spatial field of the main stadium at Al-Haddad Sports Club in Baghdad, within the time frame of January 1, 2024, to January 3, 2024, and will involve players from the Border Sports Club football team in the youth category. The study defines motor response speed as the correlation between reaction time

and motor time, which is the time between the onset of the stimulus and the completion of the exercise.

## Methodology

The research objectives and procedures used by the researcher and the nature of the sample that will be selected to represent the study population (Wajih :1988 :9), so the descriptive method was used by the method of correlation relationships to suit the research issue. The research community was represented by the football players of the Borders Sports Club in football, and their number was (26) players chosen by the researcher by the random method, the research sample was randomly selected and consisted of (18) players after the goalkeepers were excluded from the lottery (3), as well as the sample of the exploratory experiment was excluded and its number was limited to (5) players. To determine the validity of the selection of the research sample and the degree of its normal distribution, the law of the torsion coefficient was employed to know the extent of the homogeneity of the sample in terms of (height, weight, age), as shown in Table 1.

**Table 1.** The Variables (Height, Weight, Age) and the Values of the Arithmetic Mean, Standard Deviation, and Coefficient of Variation for the Sample Members

Torsion coefficient	Mediator	Standard deviation	Arithmetic mean	Number of Sample	Statistical processing Variants
0,435-	192,6	5,14	191,88	18	Height - cm
0,222	82,8	12,770	84,550		Weight - kg
0,066	290,7	9,600	288,440		Age - Month

**The Torsion coefficient of these variables is between +3, so the sample is considered to be normally distributed**

Instruments and tools used in the research are observation, interview, test, ruler, pens, 15 figures, 45 cm high cube, 2 whistles, tape measure, 10 soccer balls, and divided targets. The researcher identified the test of speed of motor response and basic skills test after presenting it to a group of experts and specialists which is considered one of the most important basic skills in the game of soccer, as most scientific sources emphasize that it is the basis of the learning and training process in the game of soccer. And because mastering this skill will quickly help improve the performance of other skills.

### A. Nelson's Transitional Motor Response Test: (Imad, 1999, p. 3)

The objective of the test is to assess the individual's ability to react and respond swiftly upon release. To conduct this assessment, several tools are utilized, including an open area measuring 20 meters in length and 2 meters in width, devoid of any obstacles, a tape measure, a timer, and four screens. During the execution phase, the tester positions themselves at one end of the central line, facing a referee stationed at the opposite end. Holding the timer with one hand, the tester swiftly moves their arm to one side, triggering the timer simultaneously. Subsequently, the tester sprints as quickly as possible to the sideline indicated by the referee, halting the timer upon arrival. The recording process

involves scoring the best right and left attempts for each participant out of three attempts for each side.

B. Handling Speed Test: (Ali, 2015, p. 4)

The objective of this test is to assess handling speed. To conduct the test, the necessary tools include a wall, a timer, balls, a tape measure (meter), and plaster (Burke). The tester begins by standing behind a line drawn at a distance of 8 meters from the wall, positioning themselves so that their face is against the wall. Upon hearing the start signal, the tester alternately kicks the ball towards the wall. Each tester is allowed two attempts, with the best performance recorded. The test duration is 20 seconds. The recording process involves counting the number of repetitions completed within the 20-second timeframe.

C. Rolling Speed Test: (Thamer, 1999, p. 2)

The test involves rolling a ball between five designated figures in a back-and-forth motion. Its objectives are twofold: to evaluate the proficiency of the participants and to measure the speed of their performance. To facilitate this test, five screens, five legal footballs, a timer, and markers indicating a distance of 2 meters between the screens are utilized. Experiment instructions dictate that two trials are conducted, with the best trial recorded for analysis. The round-trip time, calculated and recorded to the nearest hundredth of a second, serves as the primary metric for performance evaluation. Participants are permitted to use either their right foot, left foot, or both feet during the test. Upon receiving the signal to begin, athletes commence running from the starting line, maneuvering the ball around the designated figures, and returning to the starting point in the same manner. Time is meticulously recorded, ensuring precision to the nearest hundredth of a second.

D. Shooting Accuracy Test: (Imad, 1999, p. 3)

The objective of the test is to assess the accuracy of shooting at the Megazza goal from a stationary position. To execute the test, the following equipment is utilized: five legal soccer balls, a rope to delineate the goal, a tape measure, a regulation soccer goal, and a suitable soccer field. The test procedure involves positioning five soccer balls at various locations along the penalty line, while a rope is employed to partition the goal into nine distinct sections, as illustrated in Figure 6. During the test, the player stands facing the goal, holding the ball, and upon receiving the start signal, they kick the ball towards the goal using their feet, aiming to place it within the designated square on the goal. Points are awarded based on the accuracy of the shots: five points for hitting square (4), four points for square (5), three points for box (2), two points for box (3), and one point for box (1). If the ball fails to enter the goal, zero points are awarded. Additionally, if the ball hits the ropes, the player receives the highest possible score. This comprehensive method of assessment provides a standardized approach to evaluating shooting accuracy, thereby offering valuable insights into the players' proficiency in this essential soccer skill.

E. Scientific Basis for Testing

The researcher conducted a scientific basis for the tests to ensure the reliability of the results. The researcher used subjective validity by determining stability. Table (3) shows this. The tests were conducted on an exploratory sample of Border Club players (6 players) on (2024/1/1) and the tests were repeated after 7 days under the same conditions, and the data from the tests were collected and the results were processed statistically, which showed that all tests have high stability, as shown in Table (3), and the stability of the tests has been proven. An objective test is a test that gives the same results even if the content is different, i.e. the results are not affected by subjectivity or personality. The test used in the study is a quantitative test that does not allow the judge to change the position of the scores when assigning the actual score (Zoukan, 1988, p. 15).

**Table 3.** The Scientific Coefficients of the Tests Used in the Research

Self-Confidence Coefficient	Error Level	Stability Coefficient	Tests
0,992	0,000	0,997	Speed of motor response
0,988	0,000	0,978	Handling speed
0,994	0,000	0,992	Rolling with a ball
0,977	0,000	0,990	Scoring accuracy

The main experiment, conducted by the researcher on Thursday, January 11, 2024, at 4:00 PM at the Border Sports Club football stadium, marked a pivotal phase in the research. During this session, the designated research sample underwent testing, with all procedures smoothly implemented without encountering any issues or obstacles. This seamless execution ensured the reliability and integrity of the data gathered for analysis. Subsequently, the researcher employed rigorous statistical methods to analyze the experiment's outcomes. Utilizing the statistical package SPSS (Version 25), the researcher meticulously processed and interpreted the collected data, enabling comprehensive insights into the research findings. This meticulous approach to statistical analysis contributed to the robustness and validity of the experiment's results, enhancing the overall credibility of the research outcomes.

**Result and Discussion**

**A. The Arithmetic Means and Standard Deviations of the Variables Under Study**

To achieve the objectives of the research, the researcher collected data on the study variables and extracted the arithmetic means and standard deviations as indicators of central tendency and measures of dispersion, and the differences between them were tested using the correlation coefficient to ensure the significance of the mentioned tests, and Table No. (4) shows the arithmetic means and standard deviations of the speed of motor reaction and handling skills, rolling and aiming.

**Table 4.** Shows The Arithmetic Means and Standard Deviations of the Variables Under Study

Standard Deviation	Arithmetic Meanings	Variants
0,0881	1,960	Fast motor reaction time
6,456	28,511	Handling speed
5,900	27,344	Rolling with a ball
5,101	26,244	Aiming accuracy

From Table 4 above, the arithmetic mean and standard deviation of the tests for the variables under study were (1.960) and (0.0881). The arithmetic means for handling, rolling, and aiming skills were (28.511), (27.344), and (26.244) respectively, and the standard deviations were (6.456), (5.900), and (5.101) respectively.

#### **B. Present, Analyze, and Discuss the Results Related to the Relationship Between Motor Reaction Time and Handling, Rolling, and Shooting Skills**

**Table 5.** Correlation Between Motor Reaction Speed and Rolling, Handling, and Shooting Skills

Significance level	Motor Reaction	Correlation coefficient Skills
moral	0,91	Handling
moral	0,86	Rolling with a ball
moral	0,80	Aiming accuracy

Tabular Arithmetic mean value at degree of freedom (n-2=16)

Table 5 shows that there is a significant correlation between handling, dribbling and shooting skills and speed of motor reaction, which enhances the ability of players to focus on passing and high skill performance because physical skills require skill performance requirements that lead to the development of speed of motor reaction and the result, and this is what Max Meyer emphasized, that the more training periods and similar to the game situations that players face during the game for the player, the more his expertise, experience and awareness of different game situations will increase (Abu Alaa, 1994, p. 13). Through sensory perception, players are able to determine the correct place to receive the ball, the correct pass, and various other game situations, so here comes the importance of the speed of motor reaction in the execution of the handling skill. (Al-Issawi, 2000, p. 14) In relation to rolling skills, the speed of the athlete's motor reaction is also required in order to perform the skill in the correct manner. This has been confirmed by a number of scientists in the field of sports training, who stated: (Kinetic reaction time includes reaction time and movement time, which are requirements that must be developed in athletes and in most sports disciplines, including football. The shorter the reaction time, the more the athlete is able to act in time, especially in the rolling skill, react quickly to different stimuli in response to different playing conditions, and move quickly on the field while performing the rolling



skill in soccer, in terms of control and speed (fluidity commensurate with the demands of the game).

The researcher believes that the appropriate reaction is influenced by the previous information, which made the research sample able to choose the appropriate position to take the appropriate place during the performance of the rolling skill, as (Issam Al-Washami) confirms that “determining the path of rolling the ball and its speed is one of the most important factors that help to perform well by taking the appropriate position of the body in preparation for receiving and rolling the ball, and therefore the speed of the appropriate motor response plays a prominent role in some football skills since performance is often fast and fast in addition to decision-making in motor execution (Issam, 2002, p. 10).

As for the aiming skill, the researcher attributes the reason for the emergence of a significant correlation to the fact that the speed of motor reaction is one of the processes of great importance to the mental process and is represented in the nervous system as the controller of the organization of the various activities and motor events carried out by the nervous system by sending signals, so that “without rapid motor response signals, it is not possible to carry out All stages and steps of the scoring skill in order to master the steps sequentially to achieve the goal is considered “the harmony of qualities between sensations, perceptions, movements of body organs and their communications with the internal organs of the body” and the shorter the motor reaction time, the shorter the athlete is able to make the right movement at the right time, especially in the overall performance of different skills and in different situations (Al-Khazraji, 2011, p. 11 ). Speed of motor reactions is also important for athletes. This is because the body needs to adapt and change quickly in order to perform a skill, and this depends on the speed of movement, concentration and preparation during the game (Mahmoud, 2008, p. 12).

## Conclusion

In conclusion, it is evident that youth soccer players exhibit notable motor reaction speed, which significantly influences their performance in specific skills such as handling, rolling, and shooting. This underscores the importance of developing and enhancing motor reaction speed alongside basic skills for soccer players. Recommendations stemming from these findings include prioritizing the improvement of motor reaction speed and basic skills among players, emphasizing the pivotal role of reaction speed in skill performance, and incorporating specialized exercises designed to enhance motor reaction speed using available tools and equipment. Additionally, there is a need for further studies examining the relationship between reaction speed and other soccer skills across diverse player samples. These recommendations aim to optimize player development and enhance overall performance in soccer.

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