

# THE DEGREE OF PAIN IN THE KNEE JOINT AND ITS RELATIONSHIP TO SPEED AND AGILITY ACCORDING TO THE CODA TEST FOR FOOTBALL REFEREES

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## **ABSTRACT**

Through the field observation of the researcher as a referee for open-air football and after reviewing the sources in the field of practical specialization, does the preventive aspect of referees affect the role of tests used in special tests for football referees, and focus on the theoretical aspect of the law only? While prevention is no less important than it, and any lack of modern and advanced preventive methods will cause injury to referees, so the researcher is required to know this relationship between the CODA test for speed and agility and the degree of pain in the knee joint, and thus it will certainly lead us to the real level of referees. The aim of the research was to measure the degree of pain in the knee joint among the research sample members according to the CODA test and to identify the relationship between the CODA test for speed and agility and the degree of pain among first-class football referees. The researcher used the descriptive approach to suit the nature of the research and its field procedures and to solve its problem. The researcher defined the research community as first-class football referees (assistant referees) for the season (2023-2024). The number of them is (15) referees. As for the research sample, (10) referees were chosen randomly. After collecting the data and conducting the statistical analysis of the results, the researcher concluded that there is a significant correlation between the degree of pain and the Coda test for speed and agility, as well as the presence of simple pain among the individuals in the research sample.

**KEYWORDS:** Pain, Knee Joint, Agility and CODA test.

**INTRODUCTION**

Football is the most played sport in the world. It has captured the imaginations of over a billion followers worldwide, which is why it's referred to as the round witch. It's the most popular sport in the world, despite the cultural, social and economic differences between countries, it's primarily due to its significant psychological, social and political effects on individuals and society. What differentiates football from other sports is its collective nature and not its individualized nature. It's a game between two teams that involves 11 principal participants and numerous substitutes.

The winning team in the match is the team that scores the most in the matches. What also distinguishes it is that it is a sport played with the feet, which requires great skill and is not easy for a person who naturally controls his hands better than his feet.<sup>1</sup> Since the referee is the most important leader on the playing field, the decisions taken by him are extremely sensitive. Therefore, paying attention to the advancement of all movement aspects is extremely important, as many positive results depend on these skills in making the right decision at the right time. The physical aspect of the referee is extremely important, and the more his functional and muscular systems and body joints are healthy, the referee will be fully prepared to move in all directions and in different positions of movement.<sup>2</sup>

**RESEARCH PROBLEM**

Football refereeing is an essential element of the game, and the difficulties encountered in practicing this profession, especially the physical aspect, through the field observation of the researcher as a football referee for open fields and after reviewing the sources in the field of practical specialization, does the preventive aspect of referees affect the role of tests used in special tests for football referees, and focus on the theoretical aspect of the law only? While prevention is no less important than it and any lack of modern and advanced preventive methods will cause injury to referees, so the researcher is required to know this relationship between the CODA test for speed and agility and the degree of pain in the knee joint, and thus it will certainly lead us to the real level of referees.

**RESEARCH OBJECTIVES**

1. Measuring the degree of pain in the knee joint among the research sample members according to the CODA test.
2. Identifying the relationship between the CODA test for speed and agility and the degree of pain among first-class football referees.

**RESEARCH HYPOTHESES**

- There is a correlation between the feeling of pain in the knee joint and the CODA test for speed and agility.

**RESEARCH FIELD**

- Human field: Assistant referees for football in Najaf Ashraf, first division, Received approval from the Iraqi Football Association for the 2023-2024 football season.
- Time field: From 11-11-2023 to 12\2\2024
- Spatial field: Najaf Ashraf Club Stadium.

**RESEARCH METHODOLOGY AND FIELD PROCEDURES**

**Research methodology**

The methodology is one of the important and basic matters in implementing scientific research, as the methodology represents "the method followed by the researcher to determine the steps of his research through which he can reach a solution to his problem. The researcher used the descriptive method to suit the nature of the research, its field procedures, and the solution to his problem.

**Research community and sample**

“The goals that the researcher sets for his study and the procedures he uses determine the type of community or sample he chooses. If the community falls within the limits, capabilities, and abilities of the researcher,<sup>3</sup> he can address the entire community with research and study. The researcher has defined the research community as first-class football referees (assistant referees), for the season (2023-2024). Their number is (15) referees, while the research sample was selected (10) referees randomly.

**Table 1.** Shows the homogeneity of the research sample

Variables	Units	Mean	STD	Median	Skewness
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Height	Cm	168.08	5.454	168	0.39
Weight	Kg	68.67	3.325	69	-0.54
Age	Year	26	2.6	26	0.8
Referee Age	Year	8.5	2.22	9	-0.32

From Table (1), it is clear that the value of the skewness coefficient is between ( $\pm 1$ ), which indicates the homogeneity of the research sample.

**Means of collecting information and devices used**

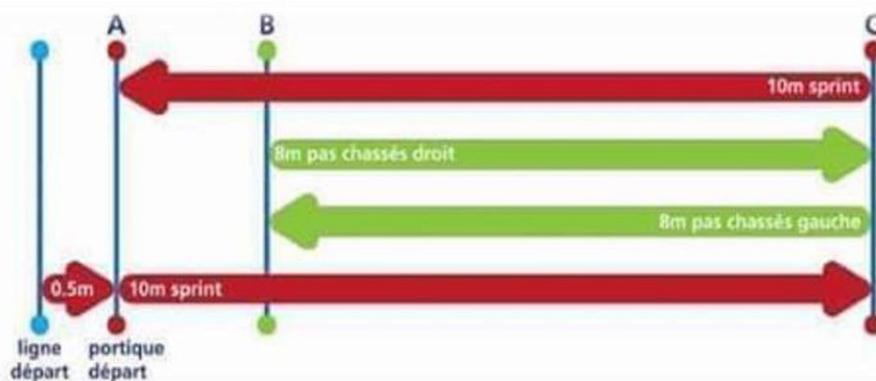
1. Observation.
2. Testing and measurement.
3. DELL computer.
4. Internet.
5. CANON camera.
6. (2) APPLE mobile phones.
7. (2) ballpoint pens.
8. Distance measuring wheel.
9. (5) indicators.
10. Papers for recording information.
11. Whistle.
12. Stopwatch.
13. Camera stand.

**Field research procedures**

**1. One-time CODA test (for assistant referees)**

The researcher chose this test because it is extremely important through accreditation for first-class referees for all seasons. As this test was approved by the Referees Committee of the International Federation of Association Football (FIFA) to measure the referee's readiness Through speed and physical agility in movement during a specific time (10 seconds) and as a referee, I notice that most of my colleagues show symptoms of pain on their faces when performing this test.<sup>4</sup>

- **How to conduct the test:** A distance of (10 m) is measured and a marker is placed at the beginning and end of this distance, then a distance of (8 m) is measured from the finish line towards the starting line marker and a marker is placed on the (8 m) line. The referee stands at the starting line in a ready-to-go position. Once the start whistle is heard by the shooter. The referee starts at maximum speed to reach the finish line marker (10 m). Upon arrival, the referee takes side steps at maximum possible speed facing a certain side to reach the (8 m) line marker. Upon reaching the line.



**Figure 1.** Shows the CODA test method

The referee also returns to the finish line with side steps facing the previous side. Upon reaching the finish line, the referee starts to run as fast as possible to the starting line to finish the test,<sup>5</sup> provided that this test is completed within a time of (10 seconds) for each referee. After completing this test and to know the degree of pain, the degrees that he can

feel are shown to the referee, and through them the referee chooses the degree that represents the pain, as the degree of pain is classified in the CODA test on a scale from 0 to 4, where the degree is determined based on the level of pain and its impact on the individual's daily life. The following is a brief description of the degree classification:

- Grade 0: No pain.
- Grade 1: Mild pain that the individual feels but does not affect movement or daily performance.
- Grade 2: Moderate pain that causes some disability during movement and simple daily activities.
- Grade 3: Severe pain that causes great difficulty in movement and the ability to perform daily activities.
- Grade 4: Very severe pain that completely prevents the individual from performing movement and daily activities.

### Exploratory experiment

The aim of conducting the exploratory experiment is to inform the researcher of the ability and validity of what helps him in the main experiment from tools, assistant work team, skill tests, and psychological flow scale, which is an important process recommended by specialists in scientific research. This experiment was conducted on the morning of Sunday 21/2/2024 on the exploratory experiment sample of first-class referees,<sup>6</sup> numbering (2) referees of the Najaf Sports Club stadium, where the test instructions were explained. The purpose of the experiment is to identify the problems and obstacles that the researcher may face while conducting the main experiment tests.

### Main experiment

After completing the pilot experiment and ensuring the validity and correctness of the tests, the researcher proceeded to apply the test to the research sample of (10) referees. On Monday, 26/2/2024, the tests were applied at the Najaf Sports Club stadium. The researcher, with the help of the assistant work team, explained the test instructions accurately, as requested, due to its great importance for scientific research and the educational process. After completing the tests, the forms were collected and their results were emptied into special forms to facilitate statistical work.

## RESULTS AND DISCUSSIONS

### 1. Presentation and discussion of the results

#### 1-1 Presentation of means and standard deviations of the pain score variables and the CODA test

**Table 2** .shows the mean and standard deviation of the pain score variables and the CODA test

Variables	Units	Mean	STD
CODA test	Sec.	11.357	0.92
Pain score	Degree	.36	0.79

#### 1-2 Displaying the value of the correlation coefficient between the pain score variables and the CODA test

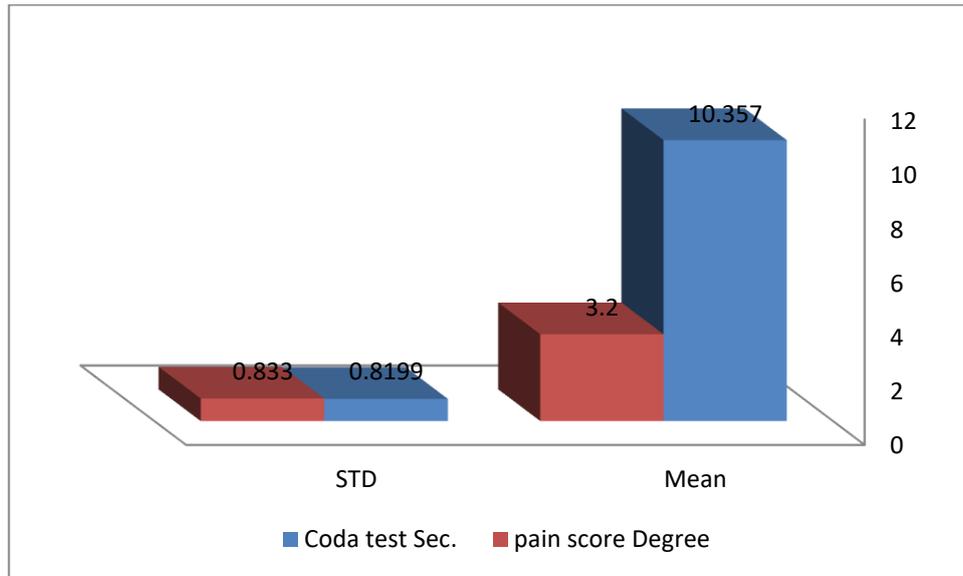
**Table 3.** Shows the correlation coefficient between the pain score and the CODA test

Variables	Person Correlation(pain score)	Person Correlation(CODA test)
CODA test	0.70	1
Pain score	1	0.70

From the results presented in Table (3), it is clear that there is a complete correlation between the degree of pain and the indicators of the CODA test, which include the variables of speed and agility. This indicates the validity of the test in measuring the vitality of the knee joint during movement and changing direction in refereeing during the leadership of matches. The researcher attributes this moral relationship to the fact that the research sample members do not possess high physical abilities, including (agility, speed) and the lack of a standardized training curriculum to prevent pain that accompanies them during their arbitration duties.<sup>7</sup>

In addition, the CODA test depends on speed and agility, as these two variables depend on the motor nervous system, as it works to stimulate and excite the motor units and increase the stimulation of the motor receptors of the test, a sense of pain. <sup>8</sup>“The sensation of pain occurs as a result of the activity of fast fibers called (Aα), which decrease quickly through nerve signals, while the sensation of pain is known as the type (C fibers), as nerve signals decrease slowly and are equivalent to (15-20 times) less than the fast type. The nature of the sensation of pain is very complex and can be

described in several models, including (muscle tear). At the moment of injury,<sup>9</sup> we find that the fast fibers of the type (A $\alpha$ ) responsible for pain send their signals from the site of injury to the brain, which makes us feel pain.<sup>10</sup>



**Figure 2.** Shows the mean and standard deviation of the pain score variables and the CODA test

The severe one that tells us to stop using the muscle. The researcher also attributes that the correlation between these two variables was high, as the individuals in the research sample were not interested in physical preparation and focused only on the legal aspect, which led to pain in the knee joint despite their continuation of the CODA test.<sup>11</sup>“The amount of muscle pain is related to the extent, manner, and intensity of the training load and its type,<sup>12</sup> and any types of movements that the athlete is not accustomed to, but most of the reasons are due to exercises that use long muscle contractions (Eccentric muscle contractions),<sup>13</sup> examples of which include running to land from the stands or running to land from high places or lowering weights or the movement of descending in exercises and bending the knees (Squats) or lying down and bending the arms (Push-ups), and a type of swelling may occur in the affected muscles.<sup>14</sup>

## CONCLUSIONS

1. There is a significant correlation between the degree of pain and the CODA test for speed and agility.
2. The presence of simple pain among the individuals in the research sample.

## Recommendations

1. The necessity of paying attention to the preventive aspect among first-class referees.
2. Developing standardized training programs for first-class referees.
3. Conducting similar studies and research for referees of other games, whether individual or collective.

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