

## Some Ratios of Blood Components and their Correlation to the Special Endurance of the Block Skill in Volleyball

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### Abstract

The research included four sections as the research dealt with some physiological problems that affect the level of players to the skill of block when repeated several times during the game.

### The Aim of Research is to

- Identify the levels of endurance to the block and blood components of the players of the Faculty of Physical Education and Sports Sciences in the volleyball / University of Kufa.
- To identify the relationship between the components of blood in search and endurance of the block in the volleyball.

As for the imposition of the research, there is a significant correlation between the blood components and endurance of the block in the volleyball.

The researcher chose the descriptive approach to suit the nature and problem of the research. The researcher selected the research sample from the research society represented by the players of the Faculty of Physical Education and Sports Sciences / Kufa University in the volleyball for the academic year 2017-2018 and the number of (12) player was selected (8) players, they represent (66.66%) of the research community. And thus represent it genuinely.

### The Most Important Conclusions

- The proportion of hemoglobin in volleyball players has to do with the endurance of the block.
- The blood viscosity of volleyball players has to do with the special endurance of the block.
- There is no significant correlation between the endurance of the block and the number of white blood cells and red platelets.

As for hypothesis of the research, there is a significant correlation between the blood components and endurance of the block in the volleyball.

### The Most Important Recommendations

- Emphasis on the level of health of players, especially blood components because of the impact on the levels of players in various skills.
- Conduct periodic tests and tests for the players to check their blood components.
- The use of medical treatment when there is a weakness in the proportions of blood components by specialists.

**Keywords:** *Blood components, Special endurance and block skill.*

### Introduction

The evolution of sports achievement in various games with the scientific development taking place in different parts of the world if the advanced medical devices in various functions of the human body to

provide results that helped the trainers to reach the level of the physical and functional links to the team members who supervise the training and also contributed to the treatment of health problems Which faced

the players and these games game volleyball, which contributed devices used to measure the functions of the body role in the level of development experienced in recent years and the special handling of their skills is important for the player to continue in the province Li level for as long as possible during the stroke or match. By watching the researcher for the players during the matches for the team of the Faculty of Physical Education and Sports Sciences / University of Kufa, the volleyball as a coach for the team, especially when repeating the skill of the block to resist several times to address the spike of the opponent during the game noted that some players do not have the possibility to continue to perform the block of the same level.

The researcher believes that the reason is that the functional adaptations of the blood components may not have the required level to the researcher's desire to research the effects of the physiological aspects of blood on the recurrence of the wall of the block in the volleyball. Among these skills is the block skill in the volleyball, which causes a drop in the level of a clear defect in the response to the attack of the competitor and through medical devices that measure blood functions we will identify the factors that affect the continuation of this skill for the longest period of time without falling to the level and here lies the importance of research.

### Research Methodology

The curriculum is the path followed by the researcher in his study of the problem in order to discover the truth in the various sciences and through a set of general rules [4].

The researcher used the descriptive approach to suit the nature and problem of research. "The benefits of using the descriptive approach do not stop at identifying the problem and describing it scientifically, but rather, trying to search for its real causes"[5].

### Community and Sample Search

The researcher's choice of the sample is one of the important steps and stages of the research. It is no doubt that he thinks about the research sample since he begins to identify the research problem and its objectives because the nature of the research and its hypotheses and plan control the steps of its implementation and the selection of its

tools such as sample, questionnaires and tests[6]. The researcher selected the sample of the research society represented by the players of the Faculty of Physical Education and Sports Sciences / Kufa University of Volleyball for the academic year 2017-2018 and the number of (12) player ,was selected (8) players was chosen by the random way by lot, which represents the proportion of (66.66% ) Of the research community. And thus represent it genuinely.

### The Tools and Devices of Used in Research

The tools are the means by which the researcher can solve his problem, regardless of whether these tools are data, samples, or devices. The researcher uses the following devices: [7]

- Electronic Stopwatch (Casio) Chinese-made.
- Chinese Scientific Calculator.
- Computer Type HP Number (1)
- Blood analysis device (CBC).
- Medical cotton, sterile.
- A special tube for keeping the blood (Tube) contains anticoagulant (10).
- Number of syringes (10).
- Microscope light for measuring white blood cells and glass slides for measurement.
- Legal volleyball court.
- Adhesive tapes.
- Volleyball Balls Legal Number (8).
- Arab and foreign sources and references.
- Observation and experimentation.
- Personal interview.
- Testing and measurement.

### The Tests of used in Research

The test of special endurance of block in the volleyball [8]

#### Objective of the Test

Measure the player's ability to perform the same rate of block skill from one site on the network.

#### Tools

Legal volleyball court, volleyball, stops watch, legal overhead network.

## Performance Specifications

The seat is placed behind the net in the middle and (50 cm) away. The trainer stands on the bench and holds the ball with both hands, with the highest level of the net by (20 cm). The student stands inside the (3m) area in the second half of the field, facing the net. When you hear the starting signal, the student advances to the jump to perform the skill of the block, touching the ball held by the coach with two hands from the top of the ball and then land on the ground, repeat performance as many as possible for 10 seconds.

## Conditions

- Each time the laboratory is installed to perform the block need to touch the ball with both hands from the top of the ball.
- The laboratory must repeat the performance until the end of the test time is heard.
- The trainer must keep the ball high over the net throughout the laboratory performance.
- Any performance that contravenes the previous conditions for not counting the attempt within the number carried out by the laboratory during the test time.

## Register

- Records the number of correct attempts made by the laboratory during the 10-week period specified for the test.

## Full Blood Count Device

This device is used to give a complete picture of the blood components. EDTA is used as the best anticoagulant for the Department of Hematology, which prevents the accumulation of blood cells and other components, which helps to give the correct results and ensure the safety of the device (CBC) from clogging the ducts of the device. In the case of the passage of clumps of blood components of the Coulter process of cbc process on the counting of white blood cells and erythrocytes and platelets, and blood components are measured by the presence of two chambers in the first machine is measured in white blood cells and hemoglobin is measured by the analysis of red blood cells by Mad Which leads to the breakdown of red blood cells and the exit of the hemoglobin, which is measured by the optical measuring device.

The second room is measured in red blood cells and the measurement method depends on the presence of an electric field saturated with the solution of acetone to offset the charges of the presence of a column passes by a steady stream of electricity when the passage of one of the components of blood, Partial of the current passing through the electric rod and measuring the strength of the resistance generated by the passage of these components. And according to the volume of blood components passing by the intensity of electrical resistance and are differentiated between these components as follows:

- Red blood cells from 40-60 microns.
- White blood cells above 60 microns.

Blood viscosity and hemoglobin are calculated by equations stored in the apparatus mathematically where the results are recorded on a special printer connected to the device.

## Pilot Study

This is the process of detecting the obstacles that may face the researcher during the main experiment and knowledge of the requirements of the experience in terms of time cost.

The researcher conducted the exploratory experiment at the Faculty of Physical Education and Sports Sciences of the University of Kufa on a sample of (3) players from a sample outside the experiment on Sunday 21/1/2018 at 10 am for the performance of the block. The aim of the pilot study was to identify:

- Difficulties and problems faced by the researcher in his work.
- The time taken to perform the tests.
- Ensure the efficiency of the work team assistant.
- The difficulty or ease of tests for the examinees.
- Test the validity of tools and devices used.

## Main Experience

The procedure of the research was to conduct physical tests on some blood components in the system of complete blood count and test the block. The process of testing the blood components was conducted in the laboratory of Al-Sadr Teaching Hospital on Wednesday

24/1/2018 as the process of blood extraction and analysis of the Components were conducted under the supervision of a medical staff specialized in this field. The test of block was tested on Thursday 25/1/2018.

## Results and Discussions

### View the Results of the Blood Components and Endurance of the Block in the Volleyball to the Sample of Research

**Table1: Shows the mean and standard deviations of the research sample.**

Variables	Unit measurements	Mean	STD.EV.
Number of white blood cells	Per thousand $\mu$ l of blood	5.44	0.5
Number of red blood cells	Per milliliter $\mu$ l of blood	4.864	0.284
Hemoglobin ratio	Grams per 100 ml of blood	13.64	0.602
Blood viscosity	Percentage	38.6400	5.673
Number of platelets	Million per milliliter	195	8.341
Endurance of block skill	Number	14	0.942

Table (1) shows the mean and standard deviations of the search variables. The results showed that the mean number of white blood cells is (5.44), the standard deviation 0.5 and the mean number of red blood cells is (4.864) and the standard deviation is 0.284. The mean of the chest circumference is (76,666) and the standard deviation (7.172). The mean number of

platelets is (195), the standard deviation is 8.341 and the mathematical mean of the block is (14) and the standard deviation is (0.942).

### View the Results of the Simple Correlation Pearson Endurance of the Block and Blood Components are under Discussion and Discussed

**Table 2: Shows the results of the simple correlation coefficient (Pearson) and the value of the test indication (Sig) between the special endurance and the blood components studied for the research sample**

Variables	Endurance of block skill (r)	Significant	Type of significance
Number of white blood cells	0.141	0.698	Non sig.
Number of red blood cells	0.257	0.473	Non sig.
Hemoglobin ratio	0.66	0.03	Sig.
Blood viscosity	0.727	0.017	Sig.
Number of platelets	0.597	0.069	Non sig.

Results showed that Pearson correlation coefficients between the special endurance of the wall of blood and the blood components were investigated. The correlation coefficient between the special endurance of the wall of the lesion and the number of white blood cells was 0.141. The value of the measured test score (sig) was (0.698, (0.05) indicating that the correlation is insignificant. The correlation coefficient between the special endurance of the wall and the number of red blood cells was 0.277.

The sig value of the test was (0.473) which is greater than the significance level (0.05) indicating that the correlation is insignificant. The correlation coefficient between the special endurance wall and the hemoglobin in the blood was (0.66) and the sig (0.03) was smaller than the significance level (0.05), indicating that the correlation

between them was significant. The correlation coefficient between the special endurance of the wall of blood and the blood viscosity was (0.727) and the value of the test (sig) was (0.017) which is smaller than the level of significance (0.05), indicating that the correlation between them is significant. The correlation coefficient between the special endurance of in the volleyball and the number of platelets was (0.579).

The sig value of the test was (0.069), which is greater than the significance level (0.05) indicating that the correlation between them is not significant. It is clear from the table that the special endurance of the wall of the block may be related to some blood components and achieved a significant correlation, the proportion of hemoglobin blood and blood viscosity, and this is because the player is affected by the lack of

hemoglobin ratio in blood to the importance of the proportion of hemoglobin in the player is more lively and active because The transfer of sufficient quantities of oxygen and therefore the processes of vital in the human body are conducted in the best form and since the wall of the wall depends on the anaerobic energy system if the lack of hemoglobin causes "feeling tired and severe stress, shortness of breath [9].

This affects the repetition of the skill and therefore affects the endurance. As for the wife blood, the increase caused the slow flow of blood in the vessels, which affects the slow delivery of oxygen to the cells of the body is also negative as the increase in the viscosity of the blood, "headache Dizziness and fainting. Feeling tired and lethargy, and inability to fulfill the simple daily assumptions "[10]. The certainty of these symptoms adversely affect the recurrence of the performance of the wall, which will weaken the endurance. As for the variables that did not have a significant correlation is

white blood cells, which is defensive action either red blood cells may affect the endurance, but the anaerobic endurance effect is limited and did not show the difference in the morbidity of platelets, where the link (0.597) But it is not significant and justifies this situation that the increase in platelets cause an increase in blood viscosity by a certain percentage, so the number of their proportion.

## Conclusions

- The proportion of hemoglobin in volleyball players is related to the special endurance of the wall of the block.
- The blood viscosity of volleyball players has to do with the special endurance of the block in the volleyball.
- There is no significant correlation between the endurance of in the volleyball and the number of white blood cells and red platelets.

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