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## **The effect of hypoxo training on some cardiac muscle measurements and some components of skill performance for deaf and dumb players in futsal**

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### **Abstract**

The aim of the research is to identify the effect of exercises using the hypoxo training method, as well as to identify some measurements of the heart muscle, speed and endurance of performance among deaf and dumb players in futsal, and the researcher relied on the experimental method for the nature of solving the research problem, as the research sample included from deaf and dumb players in football. The halls, numbering 12, who underwent hypoxic training, the researcher used the statistical bag to process the evidence, and the measurement tool for the research was a set of physical and skill tests, where the researcher concluded through this study is to improve the functional level of the research sample, and there is a significant effect in the high functional efficiency and myocardial measurements improving the level of endurance and speed of performance, which created a significant correlation in most cardiac measurements and the functional variables under study. This was achieved, emphasizing on making other functional measurements in the respiratory and circulatory systems and on other skills and physical characteristics.

**Keywords:** hypnosis exercises, cardiac muscle measurements, skill performance

### **1. Introductions**

The process of improving the level has become a preoccupation for all those working in the field of training in all their specializations, and reaching the sports championship and or maintaining the level requires hard and exceptional efforts from coaches and players.... and this requires solving all scientific issues that stand in the way of the team's progress and this can only be done Through the employment of different sciences and modern technologies and the use of the scientific method through scientific research to solve this because of the great competition between athletes to achieve championships and improve the level, it relied on a number of factors, including the employment of science to the science of sports training such as physiology, biochemistry, tests and measurement... It can also be trusted. With these results through the movement of scientific research and to solve those problems facing the determination or stopping of the athletic level, so training scientists devised many ways and methods that would develop the athlete to reach the top or the desired achievement, taking into account all the conditions and conditions that the athlete may be exposed to during Competition and finding solutions that make the athlete able to overcome these conditions and achieve achievement, and among those innovative methods and methods of training The athlete's opinion is the hypoxo, as Wajdi Al-Fateh and Muhammad Lotfy (2002) indicate that "hypoxic exercises are performing exercises while the tissues and cells of the body are exposed to a lack of oxygen through stifling breathing or controlling breathing (reducing the number of breathing times during performance), and for the inevitability of playing competitions in The places above sea level are where the player is exposed to a lack of oxygen, which calls for the importance of an adaptation for the organs and systems of the body to adapt to the oxygen debt. Hypoxia training tips Execution Hypoxic Guide Lines: Because Futsal games where the pressure of the games is too high to be and there is no room for comfort during the competition because the pitch miniature transmission speed of the ball between the two teams competing to be very fast so requires the speed of performance and carry high performance, hence eating this style training researcher who sees him researcher The impact, influence and relationship on the heart muscle and its measurements through the ultrasound device and the extent to which these changes are related to the speed and endurance of skill performance, which are among the basic pillars to provide a good level for the team.

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The speed of receiving, delivery, scoring and passing... must be matched by the continuity of the effectiveness of performance with the continued repetition of those skills Over the course of the matches, as it is known that the game of futsal football for the deaf and dumb needs speed of performance and to repeat those skills quickly and repeatedly for many times along the matches due to the specificity of the game due to the small space and speed of movement and pressure... and this requires a periodic device at a high level of efficiency To enable the continuity of skill performance in a high degree of accuracy and technical performance. Hence the importance of research and the need for it to know the extent of the impact of the hypo training method. It is based on cardiac measurements and their interrelationship with skillful performance in terms of endurance and speed of performance. It gives a picture of correcting the training process through tests and measurements carried out by the researcher.

**1.2 Research Problem**

Through the researcher’s experience, he witnessed a decrease in the level of skill performance as the time of the matches was advanced and the physical fitness was depleted. He also touched the decrease in the speed of skill performance, which is one of the characteristics of the game of futsal football and one of the reasons for superiority over the competitors, and it may be due to physiological reasons because all that drives us to move with the ball or Without it, it is caused by excitations, and it needs responses, including functional ones. One of the reasons for the continuation of muscle work is related to the efficiency of the heart through its measurements, the amount of blood returned and cardiac output, and it does not happen except through exercises in the hypoxi style that are chosen in a way that is consistent and consistent with the type and characteristics of the game and the nature of the competition and time Therefore, the problem can be formulated in the following question:

**The first question:** Do exercises in the hypoxi style have an effect on the measurements of the heart muscle and the skill level in football for the halls of the deaf and dumb?

**1.3 Research Objectives:** The research aims at the following:

- 1- Preparing exercises in the hypoxi training style for deaf and dumb players in futsal football
- 2- Identifying some heart muscle measurements, speed and performance endurance among deaf and dumb players in futsal football.
- 3- Identifying the differences between the tribal and remote tests of the study variables for deaf and dumb players in futsal football.

**1.4 Research hypotheses:** The researcher assumes the following:

- 1- There are significant statistically significant differences between the tribal and remote tests and the benefit of the post in the cardiac measurements for the deaf and dumb in football for the halls.
- 2- There are significant statistically significant differences between the tribal and remote tests and the benefit of the post-test of the skill abilities of the deaf and dumb in football for the halls.

- 3- Hypoxi training has an effect on the variables under study for deaf and dumb players in futsal

**1.5 Research Fields**

**1.5.1 The human field:** Maysan governorate players for the deaf and dumb in futsal football.

**1.5.2 Amajal Temporal:** 03/03/2019 until 25/9 / 2019

**1.1.5.3 Spatial domain:** Hall of the martyr Wissam Oreibi, Heart Center Hospital in Maysan.

**2. Research methodology and field procedures**

**2.1 Research Methodology:** The researcher used the experimental method for its suitability to solve the research problem, (1). The experimental method represents the researcher’s ability to control all the variables and basic factors with the exception of one variable that is controlled and changed for the purpose of knowing its impact on the educational or training process.

**2.2 Community and research sample**

Select a researcher research community Bmentb Missan for the deaf and dumb's (15) player for the football season (2018-2019), while the research sample is the model being attic research on the researcher, chooses the research sample so as to be representative of the community the original truly representative and must be "available in this sample A major condition is the possibility of generalizing its results to the original group from which it was chosen” (Mohammed, 2005).

As the researcher homogeneity of the sample in the variables (height, weight, age and training age)

**Table 1:** It shows the homogeneity of the sample in (weight - height - age - training age)

variables	S	P	Variation coefficient
height	169.50	1.883	1.110
the weight	67.80	1.881	2.774
Chronological age	24.63	0.669	4.293
training age	4.67	0.492	1.151

**2.3 Means of collecting information**

1. Arab and foreign sources
2. The internet
3. Tests and Measurements

**2.4 Devices and tools used in the research**

1. Echo Doppler Ultrasound Scanner Vivid E9))
2. Electronic arterial blood pressure device type beurer
3. hypoxi mask
4. Different color flags
5. (20) Footballs for the halls.
6. Plastic sticks, number (35).
7. Stopwatch
8. Metric tape measure.
9. Scale for measuring weight.
10. Type calculator (DELL).
11. Indoor futsal hall

**2.5 Tests used to search**

**2.5.1 Measurements of the heart muscle**

**The device used:** - Echo (ultrasound examination device) device specifications:

**The device name:** Mohri Instrument - Vivid E9

**Year of manufacture:** 2012

**The Company's name:** Nhopaha

**Device type and use:** Voltage tester

#### **Device working voltage: 220 Volt**

Test method: The tester stands on the treadmill device after connecting the poles connected to the device and then start operating the treadmill according to the time period and the suggested angle of inclination and programmed according to the treadmill device, then after the end of the physical effort and the player's descent directly subject to the Echo test, which the specialist doctor extracts the required variables and in At the same time, blood is drawn and the amount (5 cc) is taken by the specialized medical assistant, and then the blood pressure is measured by the medical assistant, and the heart rate is measured through the echo device, while the breathing rate is done by one of the assistant staff through a mechanical observation Breathing for the athlete.

#### **2.5.2 Skill tests**

First, the performance test [(] Maitham, 2010)

**Test name:** Skill performance speed

**The purpose of the test:** To measure the speed of skill performance of the youth group in futsal football

#### **Used equipments**

1. Football number 6
2. Specific area not to take the test
3. 10 square meter playground
4. Stopwatch
5. whistle

**Method of performance:** The tester stands at a distance of 10 / m. When the whistle is heard, the player starts handling the ball against the wall at the maximum speed for 10 / sec. Registration method: Calculating the number of handlings  
Second - Performance Endurance Test:-

**Test name:** Measuring the endurance of skill performance with a running test (5 x 30 m back and forth with the ball). (Amr Allah, 2001) [3].

**The purpose of the test:** To measure endurance performance in football for the youth category.

#### **Used equipments**

1. Stopwatch
2. Metric tape measure
3. Legal football
4. Flat and unobstructed space
5. Start line and end line

#### **Performance Method**

The player stands behind the starting line and under his control the ball and when the signal is given to start runs the ball at full speed back and forth five times until the end.

#### **Register**

The time is recorded in seconds to the nearest tenth of a second

#### **2.6 The exploratory experience**

For the purpose of identifying the obstacles and difficulties that may arise when carrying out the main experiment, the researcher conducted an exploratory experiment, since the exploratory experiment (a practical training for the researcher to find out the negatives and positives that he encounters while conducting the tests to avoid them) (1) In order to give a clear and accurate picture of the vocabulary of the tests that were used in this research, and after determining the research sample, the researcher conducted the exploratory experiment on 20/5/2019 on a sample of (3) players whose purpose was Knowing the difficulties and problems facing the researcher. Knowing the validity of the devices and tools used. Ensure the appropriateness of the tests used in the research. Find out how long the exams will take.

#### **Determine the efficiency of the assistant team**

**2.7 Tribal tests:** The researcher conducted tribal tests on the research sample, which are represented in the measurements of the heart muscle and the skill capabilities of endurance and speed of performance on (27-28-5-2019) at five in the afternoon.

#### **2.8 The main experience**

The main experiment started on Monday, 30/6/2019 and lasted (10) weeks, where the last training session ended on 1/9/2019, during which the experimental group applied HI-POXY exercises by (3) units per week during Saturdays, Mondays and Thursdays, which is training The sample during these days, where the hypoxia exercises were applied in a single training dose, where the intensity of the exercises was commensurate with the nature and purpose of the exercises.

#### **2.9 Post-tests**

After completing the main experiment and completing the application of the hypoxia exercises on the experimental group, the post tests were applied in a similar way to the tribal tests that were previously applied in order to know the level reached by the players with the research variables during 2-3-9-2019

#### **2.10 Statistical means**

The researcher used the statistical package to treat the results statistically. SPSS)

#### **3. Presentation and discussion of the results**

3.1 Presenting and discussing the results of myocardial measurements and the endurance and speed test for deaf football for the female officer:

**Table 2:** It shows the arithmetic means and standard deviations of the measurements of the heart muscle, endurance and speed of performance of futsal football for the deaf and dumb as a control.

Statistical parameters Variables	Indication	Pretest		Post-test		Calculated T-value*
		S-	±P	S-	±P	
Aortic trunk	D	2.17	0.05	2.52	0.24	6.1
Left atrium diameter	D	2.32	0.07	2.82	0.63	4
Cardiac output	not significant	4.72	0.12	4.85	0.74	0.886
Heart rate	D	68.4	1.76	66.65	1.67	5.11
Left ventricle diameter	D	4.85	0.14	4.97	0.11	3
Right ventricle diameter	not significant	2.80	0.44	2.84	0.04	2.55
Endurance performance	D	32.01	1.22	30.21	1.7	7.99
Performance speed	D	10.22	0.54	12	0.42	3.54

And the same table No. (2) That all cardiac measurements indicate values close to the normal values and indicate the level of development and improvement of the research sample in a significant way, and the results of the speed endurance and performance endurance tests are also indicative of the improvement in the level of the sample in a significant way.

The researcher believes that the reason for this is due to the approach followed by the training staff of the Maysan team for deaf and dumb football for the halls and the nature of the exercises used, in addition to the organized and continuous training, which lasts 6 days and with a time of up to 2 hours for the training unit, and this was learned through inquiry from the Maysan team coach. The researcher also attributes to the fact that the participants in the experimental and test matches and the competitions that the team is engaged in also had an impact on the changes occurring in the

measurements of the heart muscle, the endurance and speed of performance of deaf and dumb players in futsal.

As (Abu El-Ala Abdel-Fattah) states, "Structured training leads to functional changes in the body's organs, including the heart and blood circulation. Well-trained individuals can adapt to the functional changes that occur in the body's organs from parts of the muscular effort procedure." [(] Abu Ela, 1982) [2]

While (Salma Nassar and others) confirmed, "One of the changes that occur in the heart as a result of organized sports training is the decrease in the number of heartbeats during rest or during physical exertion, as well as the rapid return of the heart to its normal state after physical exertion. " [(] Salma, 1982) [7]

1- Presenting and discussing the results of myocardial measurements, endurance test and speed performance for deaf football:

**Table 3:** Shows the arithmetic means and standard deviations of the measurements of the heart muscle, endurance and speed of performance for deaf and dumb football, experimental halls

indication	pretest		post test		Calculated T-value*	
	S-	±P	S-	±P		
Aortic trunk	D	2.44	0.02	2.95	0.32	7.94
Left atrium diameter	D	2.66	0.54	3.51	0.11	11.74
Cardiac output	D	4.96	0.18	5.90	0.18	4
Heart rate	D	70.54	11.78	61.9	1.8	5.98
Left ventricle diameter	D	4.58	0.18	5.2	0.10	8
Right ventricle diameter	D	2.27	0.7	3.11	0.6	4
Endurance performance	D	30.36	2.67	26.66	0.63	3.33
Performance speed	D	10	0.89	13	0.27	17

Table No. (3) Shows that all cardiac measurements indicate high values of development and indicate a high level of development and improvement of the research sample, and the results of speed and performance endurance tests also indicate a high level of improvement in the sample.

The researcher believes that the reason for this is due to the curriculum prepared by the researcher in a hypoxymethod and the nature of the exercises used in addition to the organized and continuous training of 2 hours for the training unit that the team is engaged in also had an impact on the changes in the measurements of the heart muscle, endurance and speed of performance of deaf and dumb players reel

The foot for the halls because the hypoxic method (lack of oxygen) allows the defense mechanisms of the body to develop from their work by increasing the size and developing efficiency for the work of functional devices, especially the respiratory and circulation systems, which is reflected on the components of skillful performance, especially endurance and speed of performance, and this was evident during the results shown in the above.

3-3 Presenting and discussing the results of the correlation between cardiac muscle measurements, endurance test and speed performance in soccer for the halls:



**Table 4:** Shows the arithmetic means and standard deviations of cardiac muscle measurements, endurance and speed performance for deaf and dumb soccer, experimental and control halls.

Statistical parameters Variables	indication	Dimensional testing (experimental)		Dimensional test (control)		Calculated T-value*
		S-	±P	S-	±P	
aortic trunk	D	2.52	0.24	2.95	0.32	5.42
left atrium diameter	D	2.82	0.63	3.51	0.11	10.18
cardiac output	D	4.85	0.74	5.90	0.18	4.43
heart rate	D	66.65	1.67	61.9	1.8	4.78
left ventricle diameter	D	4.97	0.11	5.2	0.10	6.18
Right ventricle diameter	D	2.84	0.04	3.11	0.6	3.33
endurance performance	D	30.21	1.7	26.66	0.63	5.27
performance speed	D	12	0.42	13	0.27	3.92

Table No. (4) Shows that all cardiac measurements indicate high values of development and indicate the high level of development and improvement of the research sample, and the results of speed and performance endurance tests also indicate a high level of improvement in the sample.

The researcher believes that the reason for this is due to the curriculum prepared by the researcher in a way Alhaepoksa and the nature of the exercises used in addition to the systematic and continuous training to) 2) An hour for the training unit that the team is engaged in also had an impact on the changes in the measurements of the heart muscle, endurance and speed of performance of deaf and dumb players in futsal football because the hypoxxy method (lack of oxygen) allows the defense mechanisms of the body to develop from its work by increasing the size and developing Efficiency for the work of functional devices, especially the respiratory and circulatory systems, which is reflected on the components of skillful performance, especially endurance and speed of performance, and this was evident through the results shown in the above and the same table No. (4) That all cardiac measurements indicate values close to the normal values and indicate the level of development and improvement of the research sample in a significant way, and the results of the tests of speed endurance and performance endurance are also indicative of the improvement in the level of the sample in a significant way. The researcher believes that the reason for this is due to the approach followed by the training staff of the Maysan team for deaf and dumb football for the halls and the nature of the exercises used, in addition to the organized and continuous training, which lasts 6 days and with a time of up to 2 hours for the training unit, and this was learned through inquiry from the Maysan team coach. The researcher also attributes to the fact that the participants in the experimental and test matches and the competitions that the team is engaged in also had an impact on the changes occurring in the measurements of the heart muscle, the endurance and speed of performance of deaf and dumb players in futsal.

As (Abu El-Ala Abdel-Fattah) states, "Structured training leads to functional changes in the body's organs, including the heart and blood circulation. Well-trained individuals can adapt to the functional changes that occur in the body's organs from parts of the muscular effort procedure."([ Abu Ela, 1982) [2]

While (Salma Nassar and others) confirmed, "One of the changes that occur in the heart as a result of organized sports training is the decrease in the number of heartbeats during rest or during physical exertion, as well as the rapid return of the heart to its normal state after physical exertion."([ Salma, 1982) [7]

**Conclusions**

The most important findings of the researchers are the following:

1. Hypoxy exercises have a positive effect on improving

- the functional level of the research sample.
2. Hypoxy exercises have a positive effect on the development of myocardial measurements in the research sample.
3. Hypoxy exercises have a positive effect on a relative increase in the level of endurance and speed of performance.
4. The presence of a significant effect in the high functional efficiency and myocardial measurements on improving the level of endurance and speed of performance, which caused a significant correlation in most of the cardiac measurements and the functional variables under study.

**Recommendations**

The most important recommendations of the researchers are the following:

1. The importance of verifying the desired objectives of the training process through tests and measurements.
2. The necessity of emphasizing the functional and cardiac measurements that clearly reflect the safety and efficiency of the functional devices and the role of the training process in achieving this.
3. Emphasis on making other functional measurements, in the respiratory and circulatory systems, and on other skills and physical characteristics.
4. Emphasis on the use of hypoxy training to suit the conditions of futsal football.

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