

The Effect of Hypoxia Training Using Special Masks on the Development of Some Physiological Variables and the Skillful Performance of Boxers with Weights (69-75)

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Abstract

The scientific progress achieved in the field of sports has witnessed a remarkable development in various levels and most sports, achieving a qualitative leap in achieving great achievements in all sports. The developed countries have competed in finding the best methods and styles to develop the training process for the purpose of reaching advanced sites. Training in the hypoxia style is one of the important exercises using masks, especially since the use of the mask means the use of oxygen less than normal, so the body works twice during the breathing process in order to achieve the ultimate goal of improving the functional apparatus and athletic performance through adaptations that happen to the athlete's body. The researchers used the two-group experimental approach. Experimental and control, as the two researchers identified a research community from Waist governorate clubs for the category of applicants. After performing the pre-tests (pulse test, hold breathing test, lactic acid measurement, and skill performance test) and applying the experimental method, post-tests were performed, the researchers concluded: 1-The development of functional abilities and skillful performance indicates that there is a positive effect of these masks used in the training of advanced boxers. 2-The exercises for using the mask contributed to the development of the functional abilities and the skillful performance of the experimental group.

Keywords: hypoxia training, special masks, skillful performance, boxers

Introduction

Boxing is one of the important sports covered by the scientific development movement as it took curricula with rapid spread at the level of the game in line with the high level of performance and special competition that many countries are interested in boxing as the competition for Olympic tournaments and medals has become the most intense, as training in the style of hypoxia is one of the exercises. The task is on the Cloudiness of the technique is not new in the sports fields, to the fact that the additives and methods used in the method are worthy of attention, including the use of special masks that the use of the mask means the use of less oxygen than usual, so the body works twice during the breathing process. This method simulates oxygen levels at higher altitudes and causes this lack of oxygen. It would be a means of training more than we do from another face, because the time for wearing the mask is not specified a day or during the exercise, but it is possible to gradually according to the ability of the person wearing the mask, so the player can be

trained for the highest continuous physical effort while reducing the volume of oxygen in the blood in order to achieve the ultimate goal of improving the devices Functional and athletic performance through adaptations>> that happen to the athlete's body. Hence the importance of research in preparing hypoxia style exercises and knowing their effect on some functional variables and the level of skill performance of advanced boxers.

Research problem

The boxing game is one of the games that need high and many major requirements and abilities, whether physical ,motor or technical, in order to achieve the desired goal, and through the researcher's follow-up of the boxing in club tournaments, being a player, he noticed there is a decline in the level of play and the inability to continue to punches It is continuous and highly effective and that increasing the ability to perform the correct punches can resolve the fight regardless of strength, which prompted the researcher to use this training in a hypoxia method with the use of various exercises for the purpose of improving skill performance and focusing on playing until the last rounds and developing some physical and functional capabilities in this study.

Research aims

- 1-Preparing hypoxia exercises to develop some functional variables and the skillful performance of advanced boxers with weights (69-75).
- 2-Identify the effect of hypoxia training in developing some functional variables and the skill performance of advanced boxers with weights (69-75).

Hypotheses Research

- 1-There are statistically significant differences between the results of the pre and post tests and the experimental and control groups for some functional abilities and the skillful performance of advanced boxers.
- 2-There are statistically significant differences between the post-test results of the experimental and control groups for some functional abilities and the skillful performance of advanced boxers

Research methodology

A The researchers used the experimental approach (by designing the two equivalent groups with the pre and posttests), that is, the researcher used the experimental approach to suit the nature of the problem

The research sample

As the researcher identified his research community from Wasit governorate clubs for the category of applicants, who are boxers of each of the clubs (Al-Kut, Al-Hayy, Al-Zaeem, Wasit, Damuk, Al-Shuhada, Al-Nahrain, Al-Azza) in the boxing game for a weight of (69-75) kg, and the researcher conducted a field survey for perusal. On the reality of the game in clubs, to find out the number of boxers who continue to play, and it was found that their number is (20) Then they chose (16) boxers from them

using the simple random stratified method, at a rate of (80%) from the original research community, divided into two groups, the control group and the experimental group, by (8) boxers for each group, and (4) of them were selected for the purpose of the exploratory experiment. It is related to the research and the results showed significant in measurement



Fig.1 show the skillful performance test

Pre-tests

The researchers conducted the pre-tests in the Damuk Sports Boxing Club in Wasit, accompanied by the assistant staff. From the possibility of the sample on applying the tests (pluse test - hold breathing test - lactic test) and conducting the appropriate warm-up for the application of the tests, the data was downloaded in special forms prepared in advance for this purpose, while the skill performance test was applied on the same place in the Damuk Sports Club hall, where the preparation for the test was provided by providing the tools for the fight and referees. For fights

Hypoxia exercises

After the pre-test was performed, pre-prepared hypoxic exercises were applied to develop physiological abilities and skill performance. These exercises were applied to the boxers of the experimental sample, depending also on the scientific sources and references in the science of sports training and physiology as well as the opinions of experts and boxing specialists over a period of (10) weeks and by (3) Training session per week, and for the formation of the training load, they used wave method (2: 1) was to form The training load ,

The researchers used high intensity interval training and repetitive training with intensity ranging from (80 - 100%) of the boxer's maximum ability. In addition, tests

were conducted to determine the maximum intensity of each of the special exercises, and on the basis of those stresses, training session were approved.

The volume of the training load was determined on the basis of the number of reps and sets

post- tests

After applying the special exercises prepared by the researchers for boxers and applying them by wearing the mask for hypoxia exercises, the researcher conducted the post tests with the same conditions related to the pre-tests in terms of (time, place and method Implementation).

Statistical means

Presenting, analyzing and discussing results

Table 2

It shows the mean value, the standard deviation, the calculated (T) value, the level of significance, and the type of significance for the study variables for the experimental group

Vairables	Pre -test		Post – test		T	Standard error
	an	Standard deviation	An	Standard deviation		
Heart rate	69.83	1.94	66.50	1.64	2.98	0.03
Breathing hold	2.15	0.483	3.21	0.14	4.38	0.00
Lactic acid	15.05	0.68	8.56	2.05	4.62	0.00
Performance	42.44	3.245	48.23	3.35	6.34	0.00

Table 3

It shows the mean value, the standard deviation, the calculated (T) value, the level of significance and the type of significance for the study variables for the control group

Vairables	Pre -test		Post – test		T	Standard error
	an	Standard deviation	an	Standard deviation		
Heart rate	70.33	1.75	67.25	0.74	5.07	0.00
Breathing hold	2.4	0.47	2.6	0.33	2.71	0.04
Lactic acid	15.30	1.46	11.75	0.81	1.39	0.02
Performance	43.265	2.41	44.10	2.84	2.95	0.04

Discussing the results

It is noticed through the table that significant differences appear between the pre and post test and the experimental research group. The researchers lack the reason for this to use the method of training with hypoxia and by using special masks designed for this purpose, as the organized training works to reduce the heart rate after the effort to a level commensurate with the type of effectiveness and the energy system used "One of the most important physiological changes that occur as a result of sports> training

is the decrease in the number of heartbeats after exertion .⁽²⁾ ability of players to hold the breath depends on the efficiency of the heart and is synonymous with the heart rate. Studies show that using a mask enhances when you breathe against mask resistance, the lining in the lungs essentially expands to allow the surface area of the alveoli to expand, thus allowing more blood to flow to the alveoli for more (oxygen transport). When you increase the "surface area", you increase the number of red blood cells that will be able to carry more oxygen to the extremities, delaying the process of fatigue>.⁽¹⁾

. the exercises used that have caused functional changes in the human body systems, including the heart and blood circulation, which are reflected on the body to get rid of waste, including lactic acid, as the revitalization of the cycle Blood flow and accelerate the return of blood from the muscles to the bloodstream, including the excreta and metabolic wastes, which led to improving the ability of the sample members to drain lactic acid and reuse it in the preparation of energy in addition to speeding up its storage and providing an alkaline environment that regulates the pH and raises the alkalinity of the body and works on its balance. That an increase in the lactic acid pool means an increase in the acidity as a result of the accumulation of hydrogen ions, and then it leads to a decrease (PH), which represents the degree of acidity ⁽¹⁾ , Well trained individuals can adapt to the functional changes that occur in the body's systems as a result of muscular effort and continue with this effort All this is done by using a special mask use led to an increase in muscle contraction efficiency and improved muscle function through an increase in blood circulation⁽³⁾. Mechanisms could include improvements to lower ventilation costs, an increase in ATP production, reduced ATP muscle cost, and reduced by-product accumulation. Hypoxic training is likely to be anaerobic in nature. An additive mechanism could be an improvement in performance through hypoxic training due to increased anaerobic capacity

(Gore, Clark & Saunders, 2007) reported Hypoxic training is a mechanism for improving performance>

⁽²⁾ Therefore, it helps the boxer to perform in the real boxing fights with few mistakes >> ⁽³⁾

⁽²⁾ ريسان خريبط مجيد : التحليل البيوكيميائي والفلسفي في التدريب الرياضي , البصرة , مطبعة الحكمة , 1991. 1991, ص41.
⁽³⁾ Effect of using the elevation training mask on aerobic capacity, lung function and hematological variable

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⁽²⁾Gore, C. J., Clark, S. A., & Saunders, P. U. (2007). Non-hematological mechanisms of improved sea-level performance after hypoxic exposure. *Medicine and Science In Sports*, 39(9), 1600-1609

⁽³⁾ أبو العلا احمد عبد الفتاح : بيولوجيا الرياضة . القاهرة . دار الفكر العربي . 1982 . ص146

Conclusions

Through presenting, analyzing and discussing the results of the pre and post tests, the researchers reached the following conclusions:

The development of functional abilities and skill performance indicates that there is a positive effect of the masks used in the training of advanced boxers. The experimental group excelled in the studied research variables at the expense of the control group due to their being affected by the exercises for using the mask. The development of functional abilities reflected positively on the development of the skillful performance for boxers.

Recommendations

The researchers recommend using exercises in the event itself to develop the skills performance and functional abilities for boxers.

Reliance on hypoxia exercises using masks to give positive results in developing the functional abilities and skillful performance for boxers.

Diversification in the use of exercises and in different situations, which contribute to improving the functional abilities of boxers and the skill performance.

المصادر والمراجع

1-<https://www.trainingmask.co.uk/products/training-mask-2-0-blackout>

2-Lamp.D.: Physiology of exercise responses and adaptation, 2nd ed., Macmillan publishing company, New York. 1984. P210

(2)

3- مؤيد عبد علي: أسس الفلسفة الرياضية، دار الكتب والوثائق، بغداد، 2014،

4- ريسان خريبط مجيد: التحليل البيوكيميائي والفلسفي في التدريب الرياضي، البصرة، مطبعة الحكمة، 1991. 1991. ص41.

5- Effect of using the elevation training mask on aerobic capacity, lung function and hematological variable

Journal of Sports Science & Medicine 15(2):379-386

6-Gore, C. J., Clark, S. A., & Saunders, P. U. (2007). Non-hematological mechanisms of

improved sea-level performance after hypoxic exposure. *Medicine and Science In Sports*, 39(9), 1600-1609

أبو العلا احمد عبد الفتاح: بيولوجيا الرياضة. القاهرة. دار الفكر العربي. 1982. ص146-7