
The Effect of Training Mask Exercises in the Development of Oxygen Ability and Some Physical Andfunctional Variables for the 200m Freestyle Runner

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Abstract: The 200m runner needs special physical and functional specifications due to the nature of the requirements of this event, which is characterized by a high effort and for a short period of time during which the body depends on the supply of energy working muscles not oxygen, and this requires the coach to work extensively and significantly using all resources for the purpose of employing them in the training process to get the runner to the highest level, the use of the training mask makes the athlete work under oxygen conditions, which forces the functional devices to adapt to this situation to compensate the energy discharged During the muscular work that is characterized by high effort and during the continuation of training the body organs will adapt to this condition and therefore will achieve the desired training goals that he aspires to reach.

1. INTRODUCTION

The equipment and training methods are an important factor that led to the rapid development of the level of the athlete, both physically and functionally, which reflected on the skill aspects as well as the upgrading of sports events in general, as these equipment and auxiliary training means are one of the reasons that work to provide training conditions that can not be provided to all athletes alike on the one hand, and also help to catch up with effort and time on the other.

Training mask is one of the modern training methods that can be worn tightly to prevent the entry of external air into the lungs except through a dedicated opening located in the front and side of the mask, which is one of the most important training methods that makes the athlete lead training efforts by lacking external oxygen by controlling the entrance of the air inside the lungs and increases the ability to inhale air as it allows the entry of 60-70% of external oxygen into the lungs. This mask thus provides a training atmosphere similar to that of training with hypoxia and high altitudes with a lack of oxygen.



Oxygen deficiency training is a training method based on the lack of oxygen in the body, in which the body is exposed to hypoxia (lack of oxygen content in the blood),

and this is caused by the body's exposure to an abnormal environment such as moving to play in places above sea level or climbing heights where partial pressure of oxygen in the air decreases and then a decrease in the amount of oxygen inhaled by the player during physical activity, leading to the occurrence of a decrease in partial oxygen pressure in the arterial blood and thus a lack of oxygen in the cells and tissues of the body, i.e. the body's exposure to increased oxygen debt, resulting in a decrease in the individual's ability to perform, continue to be active and the level of achievement decreased (Iyad Hamid and Hossam Mohammed: 104: 2011).

The importance of research lies in the use of training methods and equipment to provide a different environment that allows the athlete to train under training conditions different from the usual, which leads to various efforts of the athlete, which works to increase the training burdens on functional devices in a scientifically codified way to reach functional adaptations that help the athlete to improve the level and achieve achievement, and the problem of research is determined by answering the following question: For training mask training has an impact on the characteristics of tolerance of speed and oxygen ability and some functional variables for the runners 200 m free, the fact that the most accredited training by trainers depends on physical exercises and speed exercises without relying on modern training methods which can help to raise the level of the athlete to higher levels, and the research aims to identify the impact of exercises using the training mask on some functional variables represented by the ability of oxygen and vital capacity. The speed of the runner is 200m freestyle.

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2. RESEARCH METHODOLOGY AND FIELD PROCEDURES

2.1 Research approach:

The experimental approach designed by the same group with pre and post testing has been adopted to suit it and the nature of the problem and the objectives of the research.

2.2 Search sample:

The research sample was for the 17-18-year-olds from the 2020-2022 Diyala Athletics Training Centre of the Diyala Education Directorate.

2.1.1 Sample homogeneity in research variables:

Homogeneity was performed on the members of the research sample in the research variables and the results showed that all members of the sample were limited to the values of the twisting factor between (± 3) and these values indicate the homogeneity of the sample and there are no individual differences between them that would affect the results of the research, as shown in table.1

Table (1)

Sample homogeneity in search variables

Variables	Q	and	±	for
Oxygen ability	0.730	0.729	0.106	0.002
Biocapacity	5.430	5.325	0.228	0.876
Bear the speed	18.412	18.351	.349	0.046

2.3 Means of collecting information, devices and tools used in research:

2.3.1 Means of gathering information:

- Arab and foreign sources and references
- auditions
- Electronic Stopwatch Casio Type 2
- Mask training

2.4 Identify search variables:

2.4.1 Experimental variable:

The Training mask (energy sports mask) of American origin, which is dedicated to working under conditions of oxygen deficiency, is worn by the athlete on his face in front of the mouth and nose and is governed by a rubber band behind the head, and the mask contains three outlets for entering the air and two for air exit and this competitor is designed to pass the air for only one side, as shown in the form (1).



Figure1

Training mask used in search

2.4.2 Experimental research variables:

Experimental search variables have been identified as follows:

- Lactic oxygen ability.
- Vital capacity .
- Bear the speed.



2.4.3 Search tests:

First: Lactic Oxygen capability Test (A. Fouad: 67:2009) Second: Testing biocapacity using the spirometer.

Third: 150m enemy test to measure speed tolerance for my 200m runner (Omar Aliet al.: 94: 2020).

Field search procedures:

2.5.1 Pre tests:

Pre tests were conducted on the search sample on Tuesday and Wednesday, 1 and 2/2/2022 and at 2 p.m., if the first day of the oxygen capacity test was conducted and on the second day the biocapacity test was conducted and then a speed test was conducted for the members of the search sample and on the hands of the Diyala Sports Club stadium. The conditions for conducting pre tests have been stabilized to apply posttests.

2.5.2 Training method with training mask :

The exercise curriculum was applied on Sunday, February 6, 2022.

- The training curriculum lasted eight weeks with 24 training units and three training units per week , as it was the first training unit on Sunday, 6 February 2022 and the end of the last training unit on Wednesday, March 30, 2022.
- The researcher took advantage of the physical section of the main part of the training unit with only two exercises per training unit, and the rest of the unit is controlled by the team coach.
- The exercise curriculum was implemented during the special preparation period.
- The researcher used the methods of high-intensity and repetitive fitri training to carry out exercises in the training unit.
- The training intensity of the exercises ranged from (85-95%).
- The total time of exercises in the training unit ranges from (25-30) minutes.
- Ensure that the severity in the first three training units is moderate until the body accepts the work of oxygen deficiency.
- Ensure that the rest periods are sufficient to return to normal before performing the exercise.
- The intensity of the exercise was determined by pulse using the Carvonin equation

Required pulse rate = maximum pulse rate × required intensity/100

2.5.3 Distance tests:

After completing the application of the vocabulary of the training mask curriculum on the members of the sample of the B.H. on Friday, 30 March 2022 and taking a day off, the post tests were conducted on the members of the research sample on Friday, April 1, 2022, and the researcher took into account as much as possible the provision of conditions similar to those conducted pre tests.



2.6 Statistical means:

The researcher used the statistical bag (SPSS) to extract the search results using the following statistical means: computational medium, standard deviation, independent sample test.

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3. PRESENTATION, ANALYSIS AND DISCUSSION OF THE RESULTS:

3.1 Presentation and analysis of the results of research variables in pre and post measurements:

Table (2)

The values of mathematical circles and the standard deviations of pre and post measurements and the differences and deviations of circles and values calculated for research variables

Variables	Pre test		Post test		S.F.	P	to Calculated	Level of significance
	Q	±	Q	±				
Oxygen abilityLactic	0.730	0.106	0.781	0.132	0.051	0.016	7.042	0.002
Biocapacity	5.430	0.228	5.892	0.257	0.462	0.123	8.334	0.001
Bear the speed	18.412	0.349	17.889	0.182	0.523	0.177	6.590	0.003

Table (2) shows the values of computational circles, standard deviations of pre and post measurements, differences and deviations of computational circles, and calculated values of research variables, and the results showed that the level of indication of research variables was below (0.05), indicating moral differences between pre and post measurements in these variables among the members of the research sample.

The researcher attributes the development in the lactic oxygen capacity of the research sample members to the effectiveness of the dates yen using the training mask, which provided a training environment with oxygen deficiency that the members of the research sample did not get used to in their previous training as this ability means the ability of the body to make efforts in the absence of oxygen, which is actually consistent with the performance of the runners 200 m as the energy system working in this event is the system The 200m runner must have a good oxygen capacity to help him meet the high performance requirements during the competition, which means the muscle's ability to produce energy, not oxygen, and is sufficient to perform for a period of time ranging from 30-120 seconds and with a severe intensity, so this ability reflects the efficiency of muscles to work with oxygen deficiency and increase their ability to generate energy not oxygen while bearing the increased accumulation of lactic acid, and states (Bahauddin



Salama) that " The oxygen ability is the ability to maintain or replicate maximum muscle contractions depending on the production of lactic acid-acid oxygen energy and includes all activities that perform the maximum possible muscle contractions with fatigue tolerance up to a minute Or two minutes" (Bahauddin Salama:277: 2008), training with a training mask makes the muscles work harder to generate energy by lacking oxygen entering the body through the lungs and relying on the energy resources stored in the body.

The researcher attributes the moral differences in the biocapacity test of the members of the research sample to the exercises using the training mask, which helps the chest muscles to make a greater effort to pull the air (luster) in a large size to compensate for the lack of oxygen in the body as well as pay the largest volume of exhalation to get rid of the waste of exerted effort and carbon dioxide outside the body, "the body resorts to compensating for the lack of oxygen by increasing the speed of breathing or increasing red blood cells" (Aish: 252: 2002), as increased breathing speed is the reflexive reaction of the respiratory system to compensate for the oxygen consumed during the effort and the amount of incomplete oxygen reaching the muscles as a result of the placement of the training mask on the nose and mouth that introduces less oxygen and as a reaction to this condition the body begins to increase red blood cells as a reaction Compensatory for lack of oxygen, because oxygen association is associated with hemoglobin found inside red blood cells. Regular training also leads to an increase in the number of red blood cells responsible for the transport of oxygen in blood, which leads to an increase in the rate of hemoglobin in the blood, as he noted (H.H.I.P. 1994) "regular training leads to an increase in the amount of hemoglobin used as a reserve for oxygen transport" (H.H.: 27:1994).

The researcher attributes the moral differences in the speed tolerance test to the effectiveness of training for the effectiveness of the training intensity used, which has effectively affected the development of speed tolerance, so the tolerance of high speed reflects the physiological ability of the athlete to provide the necessary energy with the appropriate evidence for the physical effort for a medium length provided that most of the energy produced through the lactic acid system (Essam Ahmed: 155: 2015) This is actually associated with the development of lactic oxygen capacity in the research sample members, which has helped to develop the characteristic of speed tolerance in the search sample.

4. CONCLUSION

The use of modern training methods works to save the effort and time spent in training and works to achieve the training goals faster if used scientifically codified in accordance with the training requirements for effectiveness or sports activity practice, as the use of the training mask in the 200m hostile exercises contributed to increasing the efficiency of the work of the functional devices in the members of the research sample represented by vital capacity and increase the volume of lust, exhalation and lactic oxygen capacity, which reflected positively on the development of the characteristics of tolerance of speed in the form of tolerance Search sample members.



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