

## THE EFFECT OF TRAINING NETWORK TRAINING IN TWO WAYS, HIGH INTERVAL TRAINING AND REPETITION TO DEVELOP SPEED ENDURANCE ADAPT HEART RATE AND ACHIEVE 5000 METERS YOUTH

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### Abstract

The research aims to prepare training network training in two ways of high interval and repetitive training to develop the endurance of speed and adapt the heart rate and achieve 5000 meters youth, where the research problem is determined that the achievement of the players of this activity does not rise to the acceptable levels, as a result of the weakness in the endurance of speed and adaptation of the heart rate and achievement, Accordingly, it became not possible to develop except through organized training, and the researchers used the experimental method with the pre- and post-test for the experimental and control groups for its suitability to the nature of the research. The research sample was conducted in a comprehensive inventory method, and the sample was divided into two groups, the experimental group and the control group, with (5 players) for each group. Conclusions: The training network training in the two methods of high interval and repetitive training has a positive effect to develop endurance of speed and adapt heart rate and achieve 5000 meters youth.

**Keywords:** Net training exercises. Speed endurance and stroke rate adaptation.

5000 meters achievement.

### Introduction

Athletics is one of those games in which the activities vary from throwing, running and jumping, and each of them has special functional requirements, as well as the educational and training aspect, which have a direct impact on the functional aspect according to the specificity of its performance, distance, time and energy systems, and running activities are divided into (short and medium) And each of them has what distinguishes it from the other in terms of different training methods on the one hand, and the physical and functional qualities that must be developed on the other hand. Among the long running activities, a distance of (5000) meters. In the physical aspect, endurance of speed is one of the most important physical abilities used in training it to suit the intensity of its performance with the performance of running (5000) meters. The heart rate is one of the most important indicators used to monitor the intensity of performance, and to regulate the periods of rest between exercises according to the training objective and the amount and direction of its load in a manner that suits the nature of age group, and hence the importance of the research is reflected in the effect of training network training in the two ways of high interval and repetitive training to develop endurance Speed, heart

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rate adaptation, and the achievement of 5000 meters for young people. Thus, the research acquires its importance by providing successful solutions in an economical manner in terms of time and effort, and knowing their positive impact in bringing about the required development and improving the level of players in a better way.

### Research Problem

Despite the development and progress in the field of sports training in the world, most sports in the country still suffer from some obstacles that hinder their progress, especially the field and field activities, especially the 5000 meters youth activity, where the research problem is determined that the achievement of the players of this event does not rise To acceptable levels, as a result of a lack of endurance of speed, adaptation of heart rate and achievement, it has become not possible to develop except through organized training, that is, the practice of effectiveness according to a coordinated training approach, so the researchers decided to develop a training program according to the training network in two ways High and repetitive interval training and obtaining high results contribute to the development of the digital level of this game.

### Research objective:

- Preparing the training network training in two ways of high interval training and repetition to develop the endurance of speed and adapt the heart rate and the achievement of 5000 meters youth
- Familiarizing yourself with the training network exercises in both high interval and repetitive training methods to develop speed endurance, adapt heart rate and achieve 5000 meters for youth

### Research hypotheses:

- The training network exercises in both high interval and repetitive training methods have a positive effect on developing speed endurance, adapting heart rate and achieving 5000 meters youth

### Research fields:

- Human field: Youth 5000m runners in the 2021 sports season
- Time field: (11/9/2021) to (17/11/2021)
- Spatial field: The stadium of the College of Physical Education and Sports Sciences - University of Baghdad

### Research Methodology

The researchers used the experimental method in an experimental design with a pre- and post-test for the two equal groups (experimental and control) for its suitability to the nature of the research.

### Community and sample research:

The research community was determined for the players of the Specialized School for Talent Care in the 2021 sports season, and their number is (10 players) (Tables 1 & 2).

### Methods and tools were used in the research:

- Athletics stadium, 60 number signs, electronic Japanese-made stopwatches, (6) tape measure, (Sony) video camera with a frequency (24 images) (1), Dell laptop computer, electronic medical scale, number. 1).

### Tests used:

- Speed Endurance Test (Joseph L 2000) (1)
- Heart rate test (Qasim Hassan Hussein1999) (2).
- Achievement: 5000 meters (Peterge. L. Thompson: 2009) (3).

**Pre-tests:** The researchers conducted the tribal tests on 9/11/2021 in the playground of the Specialized School for Talent Care in the Ministry of Youth and Sports / Baghdad Governorate.

### The exercises used in the research:

- The sample began carrying out exercises on 13/9/2021 until 14/11/2021.

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

Variables	Measuring unit	Mean	Median	Std. Deviations	Skew ness
Length	Cm	163.132	160.000	1.675	0.224
Mass	Kg	64.285	62.000	1.321	0.187
Age	Year	17.147	17.000	1.699	0.369

The value of the Skew ness coefficient is between  $\pm 3$ , indicating a moderate distribution.

**Table 2:** It shows the results of the post-tests in the tests of speed endurance, heart rate adaptation, and achievement of 5000 in the control and experimental groups.

Variables	Experimental group		Control group		T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
load speed of 2000m	6.007	3.174	6.010	5.284	0.783	0.891	Non sig
Heart rate after exertion	174.087	4.458	179.021	8.455	0.982	0.676	Non sig
Achievement 5000 meters	15.230	6.339	15.874	6.457	0.459	0.434	Non sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 10

**Table 3:** It shows the results of the pre and post tests of the experimental group in the variables of endurance of speed, adaptation of heart rate and achievement of 5000 meters under investigation.

Variables	Pre-test		Post-tests		difference of Standard deviation	T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation				
load speed of 2000m	6.007	0.657	6.005	0.856	0.339	6.731	0.003	Sig
Heart rate after exertion	174.087	1.733	172.087	0.699	0.223	9.887	0.008	Sig
Achievement 5000 meters	15.230	2.939	15.200	0.543	0.449	4.646	0.004	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 4

**Table 4:** It shows the results of the pre and post tests for the control group in the variables endurance speed, adapting heart rate and achieving 5000 meters under investigation.

Variables	Pre-test		Post-tests		difference of Standard deviation	T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation				
load speed of 2000m	6.010	2.553	6.008	0.698	0.496	4.734	0.006	Sig
Heart rate after exertion	179.021	0.776	176.011	0.756	0.645	6.612	0.003	Sig
Achievement 5000 meters	15.874	0.733	15.601	0.612	0.781	6.491	0.002	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 4

**Table 5:** It shows the results of the post-tests in the tests of endurance of speed, adaptation of heart rate, and achievement of 5000 meters under investigation in the control and experimental groups.

Variables	Pre-test		Post-tests		difference of Standard deviation	T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation				
load speed of 2000m	6.001	0.743	6.005	0.886	4.577	0.002	Sig	Sig
Heart rate after exertion	170.081	0.861	174.012	0.553	6.897	0.002	Sig	Sig
Achievement 5000 meters	15.001	0.458	15.401	0.891	8.634	0.005	Sig	Sig

Significant when the significance value  $\leq 0.05$  under degree of freedom of 4

- Duration of the training program: (8) weeks.
- Total number of training units: (24) training units.
- Number of weekly training units: (3) units.
- Weekly training days: (Sunday - Tuesday - Thursday).
- The training method used: high intensity interval training, and iterative
- Training intensity used: (80 - 100%).

**Post-tests:**

Post-tests were conducted on 11/17/2021 at the playground of the Specialized School for Talent Care in the Ministry of Youth and Sports / Baghdad Governorate

**Statistical methods:** The researchers used the statistical package (SPSS) (Tables 3-5).

**Discussing the Results**

The results showed that there were significant differences in the post-test in favor of the two groups, and the researchers attributed that the training network exercises in two ways of high interval training and repetition to develop the endurance of speed and adapt the heart rate and the achievement of 5000 meters, the importance of rationing the training load used to suit the level of the athletes first and the goal of training second (Hamdi Abdel-Moneim and Mohamed Abdel-Mughni. 1999) (4), the intensity that was used was high, and ranged from (80-100%) with the training load that took (8) weeks, and was sufficient to cause these effects, and the high intensity is commensurate with the nature of the performance of running 5000 meters and speed endurance training, and this kind of intensity leads to fatigue and is a healthy indicator in sports training, as it leads to adaptation (2010. Gajes. BC) (5), the use of heart rate in training is one of the most important indicators that can be used in legalizing The period of rest between exercises, and this is what was activated in this study, which relied on the pulse rate in rationing the rest period, as it

is one of the very important indicators for the coach and athlete because it is easy in the field to measure heart rate, which gives an indication of the athlete's training status and For the effort exerted (Abu Ela Abdel-Fattah and Mohamed Sobhi Hassanein. (2009) (6) , in addition to the training curriculum that used the method of high-intensity interval training and rationing the rest period on the pulse rate, which led to the development of the endurance of the special speed. In addition to the use of the high intensity interval training method, it contributed to improving the achievement level (5000 meters) (Robert A.2000.) (7) , because intensity is one of the basic components on which the training process is based, especially for activities that are characterized by high intensity performance (Mufti Ibrahim Hammad. 2002) (8) .

#### **Conclusions and Recommendations**

- The results showed a remarkable superiority between the tribal and remote measurements of the training network training in the two methods of high interval and repetitive training to develop speed endurance and heart rate adaptation for the experimental group and in favor of the post measurement.
- The results showed a remarkable superiority between the tribal and remote measurements of the training network training in the two ways of high interval and repetitive training to develop the achievement of 5000 meters youth for the experimental group and in favor of the post measurement.
- Recommendations:
  - Paying attention to training network exercises in both high interval and repetitive training methods to develop speed endurance, adapt heart rate and achieve 5000 meters for youth
  - Conducting similar studies and research on different age groups.

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