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The Effect Of Recovering Means According To The Pulse Index To Develop The Special Speed Of 400-Meter Runners

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Abstract:

The aim of the research is to identify the effect of recovering methods according to the pulse index of the members of the research sample and to identify the development of the special speed level for the members of the research sample. The researchers used the experimental method in a tight control method (experimental + control) for its suitability and the nature of solving the research problem, where the research sample consisted of (8) A runner from the '400m Youth Run event. And they were chosen by the intentional method, as they were divided randomly, and they were distributed into two groups by random lottery. 4 runners represented the experimental group that used the recovering methods according to the pulse index during and after the exercise, while 4 runners represented the control group who followed the approach prepared by the trainer, where the procedure was conducted Physiological tests, including the pulse index, the physical tests included a 400-meter running test and a 300-meter run test from the high start, where the researchers reached the following results. It is of great importance in improving the endurance of special speed, that the procedures for recovering and calming runners after training units contributed to the development of special speed.

Keywords: Recovering, Pulse Index, 400-meter runners and Special Speed.

Introduction:

Athletics is one of the sporting events that has received great attention in the field of research and studies, which has helped to bring about many developments in training ways and methods, and to improve the numbers recorded in those competitions at the various international and global levels.

The 400 meters event, took a fertile field for researchers in the field of sports training physiology to conduct research and studies that can contribute to the development and improvement of performance in this competition. The speed characteristic of the race is one of the important characteristics in running (400 meters) and other requirements for effectiveness, as it requires increasing the amounts of training from the coach and the correct knowledge of training ways and methods that allow the achievement and overcoming of those loads, and this depends on the correct choice of recovery means when designing the important training curricula that It will contribute to the development of sports achievements.

Research problem:

Through the field researchers' experience as a player, coach and athlete. Note that one of the reasons for the low achievement in the effectiveness of running (‘400 meters) in Iraq in recent years and its decline from the Arab and continental levels, is the lack of attention to the recovery situation during and after the training units, especially when training special speed, so the researchers decided to use healing means during and

after the training units for special speed Through a training method that helps to develop a special speed characteristic that may lead to raising the level of sports achievement according to the two pulse indicators.

Research Aims:

1. Recognizing the effect of recovering methods according to the pulse index of the research sample members.
2. Getting to know the development of the level of special speed of the members of the research sample.

Hypothesis:

There are statistically significant differences between the pre and posttests in the recovering means to develop the special speed according to the pulse index of the research sample members.

Chapter three:

Research Methodology:

The researchers used the experimental method in a controlled manner (experimental + control) for its suitability and the nature of solving the research problem, as this method is one of the most accurate, best and most efficient types of methods in reaching accurate results.

The research sample:

The research sample consisted of (8) runners from the '400m youth runner' event. And they were chosen by the intentional method, as they were divided randomly, and distributed into two groups by random lottery. 4 runners represented the experimental group that used the healing means according to the pulse index during and after the exercise, while 4 runners represented the control group followed the approach prepared by the trainer.

Equipment, tools and means used in the research:

- Pulse measuring device.
- Automatic electric vibrating massager
- Test and measurement.
- Ice bags (soft disks).
- Electronic stopwatches type Casio.

Tests:

1- pulse oximetry [1]:

Pulse rate was measured by palpating the radial artery lateral to the forearm directly in the upper region of the wrist and palpating the wide end of the bone. The measurement was carried out by the middle and ring fingers while holding the wrist joint, with pressure in the direction of the radius where the pulse can be easily calculated, then the measurement within (15) seconds and then multiplying the result by (4) to find the amount of pulse per minute.

2- 400m running:

Test name: run 400 meters.
Purpose of the test: to measure the achievement of the 400-meter run.
Tools used: running track, stopwatches, assistants, registration form.
Performance: All players are tested together to ensure the element of competition. The test begins when the players hear an instruction (take your place) as they take the starting position from sitting, then instruct (be prepared) and then start the signal and start running around the track a full turn to cover a distance of 400 meters.
Registration: The time of each contestant is recorded in the registration form in (seconds and its parts).

3- Running test (300m) from the high start:

Test name: run 300 meters.
Purpose of the test: to measure the speed.
Tools used: running track, stopwatches, assistants, registration form.
Performance: All players are tested together to ensure the element of competition. The test begins when the players hear an instruction (take your place) as they take the starting position from sitting, then instruct (be prepared) and then start the signal and start running around the track a full turn to cover a distance of 300 meters.
Registration: each runner is given only one attempt and records the time it took for the runner to cross the test distance (300m).

Recovering methods used in the research:

The researchers used the recovering means prepared for the research sample, relying on scientific sources and references, as well as he opinions of some experts and specialists in the field of sports medicine and sports training. A plan was developed for the use of the hospital means, which is the cooling

method after completing the training unit and the method was used in a rotation method (4) Minutes of ice massage and (4) minutes of relaxation exercises and for two repetitions of each method. Then the mechanical electric vibration massage method is used after the completion of the second training unit for a period of (10) minutes for the mechanical electric vibrating massage group and in accordance with the objectives and duties of the training curriculum set by the training angel for the runners In line with the training load, the type of effort exerted, the energy sources and the type of fatigue resulting from that.

The duration of their use ranged throughout the duration of the implementation of the training curriculum, which averages three training units per week, "running at nine o'clock in the morning and three training units per week taking place at five o'clock in the evening" [(2)].

With Giving passive rest on Friday was used for the purpose of restoring recovery between training units for sprinters and sprinters The two methods that were used in the research are:

1- Cooling method: This method included the following**:**

A- Ice massage (ice bags, cold water basin) was used on the muscles of the lower extremities and the muscles participating in the activities under discussion for a period of (three) minutes and for three repetitions. This method aims to:

- Ease metabolism in stressed muscle tissue**.**
- Reducing pain in the muscles involved by slowing nerve conduction**.**

B- Alternate movement and relaxation exercises for a period of (three) minutes and also for three repetitions, and aims to:

- Restore blood flow to the muscle tissues involved in the activity**.**
- Accelerate the process of discharging metabolic waste from working muscles**.**

2- The mechanical electric (vibratory) massage method was used doses of the electric automatic (vibrational) massage for a period of (20) minutes after the completion of the training unit, This method aims to**:**

A- Removed stress and get rid of lactic acid**.**

B- Increasing the efficiency of blood circulation**.**

C- Improving the state of the nervous system**.**

Posttests dimensional and measurements:

Post-tests and measurements were conducted on the research sample after the completion of the training program and in the same manner in which the pretests and measurements were conducted.

Statistical means:

The statistical system (SPSS) was used.

Chapter Four

Table 1 Control Group

#No	Test	Mean	Std	t
1	300 m Running	0.00577	0.00289	1.732
2	400 m Running	0.00500	0.00577	1.730
3	Pulse in 300m Running	1.000	0.816	2.449
4	Pulse in 400m Running	1.250	0.957	2.611

Table 2 Experimental Group

#No	Test	Mean	Std	t
1	300 m Running	0.01250	0.00500	5.000
2	400 m Running	0.01500	0.00631	5.196
3	Pulse in 300m Running	4.000	0.814	9.798
4	Pulse in 400m Running	4.750	1.500	6.333

The above tables showed that there are statistically significant differences for achievement indicators between the pre and post tests and in favor of the post tests**.**

The researchers consider that these results are normal because these periods are interspersed with the performance of effort, as the activities (300, 400) meter

running "dependent on anaerobic capabilities, which in turn constitute important physiological aspects of the runner, especially in performance that takes the character of strength and speed, as the runner acquires many skills that requires its performance in a short time" [(3)]. This is because "the rated load of training leads to fatigue, and then the body gets rid of these effects during the recovery period, and thus the desired adaptation occurs" [(4)]. Significant differences appeared in the pulse speed between the periods that are attributed to the influence of the cerebral cortex before and during the first stages of activity. Usually, the pulse speed during short races is large**.** The use of the kinetic cooling method (ice massage + relaxation exercises) "has opposing physiological effects that lead to the activation of the various organs of the body, especially the blood circulation" [(5)]. The appearance of significant differences in the pulse index between the pre-test and after using the method (kinetic cooling) may be due to the maximum intensity of training, where significant differences appeared for the stages before and after the effort and after the method of kinetic cooling. And that the use of recovery means to get rid of the chronic effects of the heart resulting from the continuity of loading and the prevention of its treatment affects the muscle tone, because the training doses alternate between increasing and reducing the load, and "this in turn leads to an imbalance of muscle tone during the different periods (before effort - after effort - after using the method recovering" [(6)],

As when performing exercises or training, the muscles become convulsive, and this spasm is often inappropriate, which results in an imbalance of the organs, so the risk of injury arises. Therefore, performing relaxation exercises removes stiffness and avoids the muscle from injury and provides stretching exercises (relaxation) restoring the biological healing process and appropriate nutrition for the muscles, "during the recovery period, more energy is produced than the energy consumed during the effort, thus raising the individual's level each time from the starting point" [(7)]. It is known that extreme or close to high intensity games cause an increase in biochemical processes that lead to the activation of all body systems, reaching a level closer to the limits of their potential at the end of work. Work, especially nerve cells that are sensitive to these variables, and the central nervous system reduces the intensity of work because it is unable to maintain resistance as a result of changing the internal environment of the organs, which results in an increase in sharp changes as a result of the continuation of effort. The researchers believe that the use of kinetic cooling led to the balance of muscle tone so that it was restored to its normal level after using the method. Ice massage was used, which led to reducing the high tone and balancing muscle heat, and then relaxation exercises helped to restore the activity of working muscles, and that the use of opposing means as in (Kinetic cooling) in the case of chronic disorders of the peripheral circulatory system has a positive effect due to the increase in blood flow in the blood vessels and muscles, and the above indicates that the use of our runners' method (kinetic cooling) helped restore muscle tone to its normal state. The researchers attribute these results to the effectiveness of the vocabulary of the training program prepared according to the correct scientific foundations in direct influence on these indicators through the use of healing methods (cooling method and mechanical electric (vibrational) massage method) included in the prepared training curriculum, which the researchers believe has contributed significantly to The direct effect on this indicator in the members of the experimental group, as Al-Skar and others mentioned that "because the speed depends on anaerobic energy systems, the training curriculum must be designed in a way that allows placing a sufficient load on the muscles to allow the development of the chemical energy compound (ATP) in an anaerobic manner." (8).

Chapter Five

Results:

1- The methods of working according to the two pulse indicators led to the development of the level of
endurance of the special speed.

2- The use of the method of recovery periods according to the two pulse indicators is of great importance in improving the endurance of the special speed.
3. The procedure of healing and calming the runners after the training units contributed to the development of the special speed.

References:

1- Ahmed Muhammad Khater, Ali Fahmy Al-Baik: Measurement in the Mathematical Field, 1st Edition: (Cairo, Dar Al-Kitab Al-Hadith, 1996) pp. 131-132.
2- Wajih Mahgoub and Ahmed Al-Badri; Scientific Research: (Ministry of Higher Education, University of Baghdad, 2002) p. 35.
3- Des Wood: Critical Judo, First pupils head by. A. and C. Bleak, 35 Bed Ford Row, London. 1992, P61.
4- Abu Al-Ela Ahmed Abdel-Fattah: The pregnancy of training and the health of the athlete, the advantages and risks: (Cairo, Dar Al-Fikr Al-Arabi, 1996) p. 60.
5- Hashem Adnan Al-Kilani; Physiological foundations of sports training: (Kuwait, Al-Falah Library, 2000) p. 148.
6- Arab Federation of Sports Medicine; Journal of Sports Medicine Sciences, No. 2, 1995, p. 47.
7- Ibrahim Al-Skar: Encyclopedia of track physiology, p. 305.
8- Ibrahim Al-Skar: SPS, p. 381.