International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 04, 2020
ISSN: 1475-7192

The Effect of Arginine on Some Physiological and Kinematic Variables of the Movement and Starting Stage and the Level of Achievement of the Effectiveness of the 200-meter

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Abstract--- *Nutrition is one of the most important factors affecting the training process, so increased attention to athlete's food has increased to compensate for the energy sources that were exhausted during training or competition, so the need to use nutritional supplements as a method to increase the amount of energy in addition to other exercises has increased. The research aims to prepare a curriculum for eating the arginine supplement. Also to know the effect of arginine on the development of some physiological variables and the level of achievement of the research sample, and the research community will be in the deliberate manner that was the hostility of the Maysan governorate team to the effectiveness of the 200-meter enemy for the youth category for the sports year 2019 and the number (10) (2) Runners The number of the research sample was (8) runners and the sample was divided into two equal experimental groups (4) runners and control (4) runners in a random manner. Two players were excluded due to conducting the exploratory experiment on them (80%) from the original community and the most important findings of the research are that The nutritional supplement used by the researchers has led to the development of the physiological variables of the experimental group, and also that arginine has a clear impact in improving the achievement of the effectiveness of the 200-meter enemy. As for the recommendations, it is necessary to clarify the importance of using amino acids for trainers and workers in the field of training and the use of other types of nutritional supplements, except Yen enemy 200 m, in particular, games and field in general.*

Keywords--- *Kinematic Variables, Level of Achievement, Effect of Arginine.*

I. INTRODUCTION

Nutrition is one of the most important factors affecting the training process. Therefore, increased attention was paid to the athlete's food to compensate for the energy sources that were exhausted during training or competition, so the need to use nutritional supplements as a method to increase the amount of energy in addition to other exercises increased.

The training process is no longer just writing a training curriculum monopolized by one person, and the athletic achievement that reached the limit of miracle is no longer limited to the science of training alone, but that these

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DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

developments are only the fruit of specialists in other sciences (biomechanics, nutrition, sports psychology and physiology) and there is no doubt that one of the most important factors affecting In the training process, it is nutrition. Therefore, increased attention has been paid to the player's food, in addition to using other methods that complement the training process for the purpose of raising the level of performance. Among these methods is the use of nutritional supplements in addition to other exercises. An important supplement is the hormone of Stosteron, which helps to increase the protein in muscle cells and thus it is possible to increase the employability of the individual sports especially if it was a sporting event require a high physical exertion that make highly dependent on muscular strength in the achievement of sporting achievement. Therefore, the science of physiology of sports training is interested in studying the physiological changes that arise in the course of sports training with the aim of exploring the direct effects and changes on the one hand and the long-term impact on the other hand through what physical or motor exercises generally affect the functions of the body's systems and various organs such as the nervous system, the organ The muscular spinning device, it is known that the arena and field games include many different activities between throwing, running and bouncing and each activity has its functional requirements as well as educational and training requirements where the effectiveness of an enemy is 200 meters. Also, biomechanical science is one of the sciences that contributed to the scientific progress of the motor performance of man in general and athletic in particular, and that the main content of this science in the field of physical education is to study the causes of movement, i.e. interested in internal and external forces causing the movement and provide the most appropriate kinetic solutions using kinetic analysis that It constitutes the primary assumptions and introductions of scientific relevance to the rationalization of sports training for various sporting events, especially those of arena and field games. The effectiveness of the 200-meter enemy is one of the difficulty activities in terms of performance and training depends on many of the variable Biomechanical and physical studies aiming to achieve achievement. The importance of the research lies in the role of L-arginine, as it is one of the essential acids, which has a clear impact on the male hormone level. It also helps in producing energy through the decomposition of sugars. Here comes its role in the training process in terms of building the requirements of a 200-meter enemy and its effect on some physiological and kinematic variables.

Research Problem

Through field observation of the researchers and their modest experience in the field of arena and field games, the researchers have trained for this event and due to the lack of proper nutrition for most athletes, especially the 200-meter enemy, and the severity of the training used by the trainers, which leads to a violation of some physiological and chemical variables, the researchers decided to use Arginine to try to identify The effectiveness of this nutritional supplement in some physiological and kinematic variables for the starting and starting stage, which would raise the level of accomplishing the effectiveness of an enemy 200 meters trying to put what is new in the coach's hands To promote the completion of this event.

Research Aims

1. Preparing a method to take Arginine supplement.

DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

2. Knowing the effect of L-arginine on developing some physiological and kinematic variables for the starting and starting stage and the level of achievement of the research sample.

Research Hypotheses

There are significant differences between the pre and posttests of the research sample and in favor of the post tests.

Research Fields

The human sphere: The two runners of the Missan Governorate team for the 200-meter sprint event for the youth category for the sports year 2019

Timeframe: from 14/9/2019 to 28/11/2019

Spatial field: Maysan Olympic Stadium and Al-Noor Medical Complex Maysan.

II. RESEARCH METHODOLOGY AND FIELD PROCEDURES

Research Methodology

Researchers used the experimental approach to suit the nature of the research problem.

Society and research sample

The process of selecting the sample has a close correlation with the nature of the society from which the sample was taken because it is “the part that represents the original community or the model that the researcher conducts his entire work on” (WajihMahjoub, 2001, p. 163). For the effectiveness of the 200-meter enemy for the youth category for the sports year 2019, the number of which is (10) runners. The number of the research sample was (8) runners and the sample was divided into two equal experimental groups (4) runners and control (4) runners in a random manner. Two players were excluded due to conducting the reconnaissance experiment they have (80%) of the indigenous community

Means of Collecting Information:

- Tests and measurements.
- Arab and foreign scientific references and the Internet
- Devices and tools used in the research: -
- Japanese-made video camera (Sony) with a frequency of 300 pictures / second, count (1).
- Tripod (1)
- The scale of the drawing is 1 meter long.
- Tape measure length.
- Legal Athletics Field
- Hours of timing (8)
- Biometric Capacity Meter.
- The oximeter for measuring the heart rate

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- The starting armrest of number (8)
- Whistle and flag of arbitration (2)
- Blood analysis device.
- Sterile alcohol.
- Medical Cotten.
- Syringes to draw blood.
- Blood tubes.
- Cooling case.
- A pipette to pull the serum from the blood.

Exploratory Experience

The exploratory experiment "is the study of a preliminary experiment on a small sample before the researcher conducted his experiment in order to choose the research methods and tools" (Qasim Hassan Al Mandalawi (and others) 1998). The researchers conducted the exploratory experiment on Saturday 14/9/2019 at four o'clock in the stadium Maysan Olympic for the purpose of stopping all the pros and cons that could be encountered by researchers during the conduct of the main experiment as well as to define the assistant work team on their tasks and to ensure the validity of the devices and tools and extract scientific conditions tests used in the research and this experiment was conducted on the eye Number (2) players from the enemy 200 meters and they are outside of the research sample.

Tribal Tests:

The researchers set two days to conduct tribal tests on all members of the research sample, as on 9/16/2019, the performance of the 200 meters foe activity was tested at 4 p.m. As for 9/17/2019 at ten in the morning blood was drawn for physiological and biochemical tests for the starting stage and hormone test Arginine to know the ratio of this hormone in the blood.

The Food Program

The researchers used the nutritional program for the experimental group for a period of (10) weeks according to these supplements through scientific references and personal interviews with experienced and specialized. Either way to use it is according to the company instructions shown on the package, and this package of arginine contains (120) amino tablets and where it takes from Arginine from (3-5) grams before breakfast and before training, and the effect of eating them starts after (30) minutes of consuming them in addition to drinking large quantities of water. This food hormone will be given daily except for the day of rest, which is on Friday. Either the control group does not use anything for a purpose Comparison between for two groups.

Training Curriculum

The researchers did not interfere in the training curriculum that was prepared by the coach, and the vocabulary of the training curriculum was uniform for all individuals in the research sample, as they are players who have less than (22.50) seconds of this effectiveness in the province for the sporty year 2019-2020, given that the curriculum was

DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

implemented In the special preparation stage, knowing that the number of weekly training units for runners was (6) units, meaning that the training was daily except for the day of rest is Friday.

Post-test:

The researchers conducted the tests and dimensional measurements on 23-24 / 4/2019 and with the same temporal and spatial conditions on the individual sample.

Video Photography

The video imaging process was performed by a Japanese-made video camera (Sony) with a frequency of 300 images / second. The camera was placed on a tripod if it was (13.76 m) at a height (1.38) measured from the ground to the center of the camera lens. The researchers have used a drawing scale of length (1m) placed in the place of the movement's performance in order to extract the actual distances from the imaging, and the figure shows the location of the camera and the video imaging process, and after performing the imaging process, the researchers used the kinetic analysis program (Knova) to extract the research variables and analyze it.

Statistical Means

The researchers used the SPSS to extract the following values

- Arithmetic mean
- standard deviation
- T for symmetrical samples

III. PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

Table 1: Shows the Arithmetic Mean, the Standard Deviations, and the Calculated and Tabulated (T) Value of the Pre and Posttest Tests of the Control Group.

	Variables	Post-test		Pre-test		Calculated	Tabular	Result
		S	A	S	A			
Physiological variables	Pulse z / d	4.7	1.33	58.25	0.77	60,60	2,35	Normal
	Maximum oxygen milliliter	8.42	391.10	49947.6	233.25	47888.3		Normal
	Physical aptitude z / d	2.34	1.58	78.11	1.31	75.42		Abnormal
Kinematic variables	Step length m	2,86	0,73	1,55	0,67	1,47		Normal
	Step frequency Second	2,41	0,44	4,19	0,46	4,22		Normal
	Step time Second	2,89	0,57	0,227	0,76	0,24		Normal
	Achievement Second	2,76	0.89	22,14	0,93	22,44		Normal

It is clear from Table (1) the arithmetic mean and the standard deviations of the variables under discussion of the control group and in the pre and posttest, where the results indicate the existence of a significant difference for a variable for all variables and achievement except for the variable of physical efficiency

DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

Table 2: Shows the Arithmetic Mean, the Standard Deviations, and the Calculated and Tabulated (T) Value of the Pre and Posttest Tests of the Experimental Group.

	Variables	Post-test		Pre-test		Calculated	Tabular	Result
		S	A	S	A			
Physiological variables	Pulse z / d	2.654	2.22	54.10	1.68	58.25	2,35	Normal
	Maximum oxygen milliliter	5.34	168.35	54453.2	135.55	44976.4		Normal
	Physical aptitude z / d	8.77	2.11	86.00	1.26	80.40		Normal
Kinematic variables	Step length m	3,55	0,54	1,58	0,86	1,46		Normal
	Step frequency Second	3,11	0,48	4,16	0,55	4,23		Normal
	Step time Second	3,30	0,09	0,219	0,11	0,236		Normal
	Achievement Second	3,93	0,869	21,91	0,917	22,36		Normal

It is clear from Table (2) the arithmetic mean and the standard deviations of the variables under consideration for the experimental group and in the pre and posttest, where the results indicate that there is a significant difference between the pre-measurement and the post-measurement and in favor of the post-measurement for all variables less than (0.05), which confirms the significance of the results and in favor of post-measurement.

Table 3: Shows the Arithmetic Mean, the Standard Deviations, the Calculated and Tabulated (T) Value of the Dimensional Tests between the Experimental Group and the Control in the Variables Under Study.

	Variables	Post-test		Pre-test		Calculated	Tabular	Result
		S	A	S	A			
Physiological variables	Pulse z / d	2.44	1.33	58.25	2.22	54.10	1,94	Normal
	Maximum oxygen milliliter	4,97	391.10	49947.6	168.35	54453.2		Normal
	Physical aptitude z / d	7,89	1.58	78.11	2.11	86.00		Normal
Kinematic variables	Step length m	2,46	0,73	1,55	0,54	1,58		Normal
	Step frequency Second	3,11	0,44	4,19	0,48	4,16		Normal
	Step time Second	2,98	0,57	0,227	0,09	0,219		Normal
	Achievement Second	3,48	0.89	22,14	0,869	21,91		Normal

It is clear from Table (3) the arithmetic mean and the standard deviations of the variables under consideration for the experimental and control groups in the dimensional measurement, where the results indicate a significant difference between the two measurements and in favor of the experimental group for all variables less than (0.05) which confirms the significance of the results and in favor of the experimental group

IV. Discuss The Results

We note through table (3,2,1) and analysis of data on functional and kinematic tests and achievement shows us that there are significant differences in a number of variables and achievement between the pre and post variables and for the benefit of Albadi, and researchers see that the development occurred came through eating the experimental group amino acids and this indicates We have agreed that the applied scientific vocabulary adopted by the researchers, which he used in implementing this approach, which is the loading of proteins within the diet program, has helped in the development of physiological variables, since the use of amino acids during training works to increase the extraordinary in the production of Prevention through the breakdown of sugars in the muscle cells and the building process increases and thus the size of the muscles increases and the rates of strength increase

DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

(International Federation of Athletics, 1995, p. 25), and this is mainly based on the value of hormones contained in the approach prepared by researchers, which was applied to the experimental research sample Which was capable of creating the muscle adaptations to perform the required physiological variables, and the researchers agree that the development in the research sample helped in developing the level of functional competence of the respiratory system through the application of the training approach ”(QusaiKadhimJabbar, 2013, p. 111). It is considered that the athletic body has an internal system that maintains the internal balance, which is reflected in facilitating the work of the body’s functions in transferring the energy needed for muscle work. ”The activity practiced has created an internal balance of blood tissue that affected many vital functions, including the amount of oxygen consumed (Vo2max) "0 (Falah Mahdi Abboud, 2009, p. 13)" The type of physical activity and energy system functioning are important factors in determining the amount of oxygen consumed and the oxygen capacity of the muscles working and involved in performance (ResanKhreibetMajeed, 1991, 532)

The results showed significant values in achieving the effectiveness of an enemy (200 meters) among the members of the experimental group through the arithmetic media and the values of (t) calculated during their comparison with the tabular, and this indicates the presence of significant differences for the benefit of the experimental group, and the researchers believe that this development that led To improve the achievement of the experimental group came through eating proteins "as proteins are one of the basic nutritional requirements for exercise. From the viewpoint of the researchers, arginine had a positive effect in improving the Kinematic variables as the length of the step depends directly on the strength produced from the muscle groups and that the step frequency depends on the nervous system in order to stay on the muscle stimulation and also depends on the length of the step and its frequency. Running is the synchronization of the combination of the increase in step length and the step rate, where the step rate becomes the most important factor when running at a high speed "(Sareeh Abdul Karim, 2007, p. 26)

The researchers attribute this to the effect of amino acid doses, which are dietary supplements and are the basic units of proteins. Where it is reconstructed and thus protein is formed and contribute to compensating the worn out tissues that were destroyed through training and thus contribute to increasing the physiological section of muscle tissue and therefore the body reconstructs the amino acids so that the tissue protein is formed in order to replace the worn or aging tissue in addition to that of those amino acids Enzymes and hormones are of protein origin "(BahauddinSalama, 1990, 123). As for the control group, they had a simple development through the trainer's approach, and that was clear through the arithmetic circles and their lack of inclusion in the approach. Protein intake by researchers. As for the results of the dimensional tests of the two groups (control - experimental), we have formed significant differences for the achievement of an enemy 200 meters through Arithmetic circles and in favor of the experimental group, and the researchers attribute these differences to the method used that included the eating of proteins and have achieved the goal of them as the members of the experimental group were able to perform the effectiveness of the 200-meter enemy with a high degree and intensity without a fundamental decline in the level of achievement and this is what was indicated by (Muhammad Al Attorney, 122,200) "The nutritional importance of proteins is that they work to regulate muscle contractility through the formation of myosin and actin, which have an important role in this contracting process.

DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The nutritional supplement used by the researchers led to the development of physiological variables in the experimental group.
2. Arginine has a clear effect on improving the achievement of 200-meter enemy effectiveness.
3. The research sample achieved a significant relationship between the kinematic variables of the starting and starting stage of the experimental group.
4. The results of the physiological variables test were in favor of the dimensional tests and the experimental group.

Recommendations

1. The necessity of clarifying the importance of using amino acids for trainers and workers in the field of training.
2. The use of other types of nutritional supplements on two runners, 200m in particular, in the field and in the field in general.
3. Conducting similar research but on other activities.

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DOI: 10.37200/IJPR/V24I4/PR201452
Received: 15 Jan 2020 | Revised: 15 Feb 2020 | Accepted: 26 Feb 2020