

The impact of an anaerobic program on choline esters and some harmonic abilities of basketball juniors

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Introduction and search problem:

Harmonic abilities are one of the main pillars of performance as they form a common denominator and compound with other elements to contribute to the player's access to the highest level of sports according to his physical potential, and compatibility abilities are linked not only to motor performance but also to complex skills characterized by a degree of difficulty and complexity in tactical and technological aspects. (3 : 62) (4 : 136)

The nervous system is closely linked to harmonic abilities as it is controlled to transmit neural signals to and from all parts of the body by the secretion of the neurotransmitter estylcholine and with the help of the enzyme choline estraz and without the presence of estylcholine the presence of choline would not have been excretion. (13 : 287)

The most famous chemical carrier is estyl colin, which comes out of the vesicles to alert the muscle fibers and it soon disappears and its effect ends to become the final motor plate prepared to transport a new stimulant and the final kinetic panels are rich in the enzyme choline astras that neutralizes the estylcholine. (2 : 262)

Estelle Colin is a vector that plays an important role in the transmission of neurotransmitters and uses estylcholine as an stimulant

neurotransmitter. When estyl colin reaches the receptors, it directly or indirectly causes the opening of chemical gates. In most cases it produces loss of polarization and in some cases estylcholine causes increased polarization, and estylcholine quickly disappears and its effect ends after performing its duty at cell membrane receptors where it causes no polarization. Get rid of estyl to muscle contraction and after about 1:10 milliseconds with the help of astras enzyme that analyzes estylcholine to colin and physic acid. (5 : 64)

Therefore, coline is a secretion through which peripheral fatigue can be identified as researchers were able to find the causes that occur in the muscle itself, starting with the transmission of neurotoxicity from the peripheral motor neurone end until the muscle permeates, the imbalance in the appearance of calcium absorption within the sarcoplasmic bond and the depletion of energy sources. (18 : 43)

The compatibility capabilities of the first determinant of the player's sports form have also become the actual and training basis for addressing various types of deficiencies in training programs. Studies and research have proven to be of great importance to harmonic abilities through the magical impact on the level of the world's best players in various sports activities, and the level of sports skills in general depends on the skill-related abilities of the .(12:11)

The importance of harmonic abilities is evident and increases through the association of their development with the development of the physical level and skills, and basketball sports of complex skills that need a high level of motor compatibility so that the player can achieve the best level of achievement, compatibility abilities are the key to the success of the processes of teaching, improving and developing the level of skill performance, and good attention and training mastered on the compatibility capabilities properly and correctly helps to good thinking and ease of learning and development of motor skills, and to develop the level of abilities Harmonicity plays an important role when acquiring motor skills, and the degree of mastery of these skills reflects the complex basis of the level and develops the level of compatibility capabilities (14:10) (16:20)

Through the previous presentation and the experience of the researcher as a player and referee of basketball and see the scientific references that indicated the importance of compatibility abilities and the enzyme choline as a key factor in the success of the training process noted the poor level of free compatibility among basketball players, especially during games, and this led the researcher to use anaerobic training to recognize its effect on the enzyme choline esterase and some harmonic abilities among basketball youth.

The importance of research:

Try to show the importance of using anaerobic training on basketball juniors and the effect on choline esterase and some harmonic abilities to enhance the training process and access to the sports form.

Search goal:

Design an anaerobic training program to learn about its impact on choline esterase and some of the harmonic abilities of basketball juniors.

Search duties:

- 1- There are statistically significant differences between the tribal and remote measurements in the choline enzyme Astras under consideration.
- 2- There are statistically significant differences between tribal and remote measurements in some of the harmonic capabilities under consideration.

Some of the terms used in the research:

Harmonic capabilities:

It is a cooperation between both the central and structural nervous systems (muscular and super) with the aim of performing a certain meaningful movement, or these are abilities that allow the athlete the ability to organize, arrange, tabulate and organize the effort exerted when performing a purposeful motor duty. (8 : 70)

choline esters:

It is a secretion that dissolves choline-based esters, many of which represent neurotransmitters, which are two types of the first type real and are found at the end of the special organs as found in red blood cells, and the second type is not real and is found in the liver and plasma. (7 : 256)

Anaerobic training:

It is one of the modern training methods that rely on high intensity training with very short or non-existent breaks and works to develop the element of strength, ability, air endurance and agility in a very short time. (10 : 42)

Previous studies:

- Study of Shamira, Tomach, et Chamera, Tomasz, et al (2015)(6) entitled "Post-physical exertion changes in the activity of traditional diagnostic enzymatic markers in the blood of footballers" where the study aimed to assess changes in activity: creatine kinase (CK), creatine kinase MB (CKMB), lactate dehydrogenase (LDH) Hydroxybutyrate dehydrogenase (HBDH), cholinesterase (CHE) and alkaline phosphate (ALP) in response to near-long-distance outdoor running under air conditions in female and male footballers, on sixteen participants aged 21.9 for females 18.4 For males using the experimental curriculum, one of the most important results was that total enzyme activity can be a useful tool in evaluating fitness among athletes, and post-effort values were higher than the baseline in the activity of cholinesterase enzyme in female footballers only and these changes were not prolonged, because the enzyme activity at the beginning of recovery time was lower than the post-effort values , i.e. it is highly active as a result of continuous physical exertion.
- Zimmer, Karen Regon et Zimmer, Karine Rigon, et al (2012)(19) study entitled " The impact of physical exercise and sex on the activity of Acetyl cholinesterase and butyryl cholinesterase in human blood samples" was aimed at assessing the effects of sex and physical exercise on the activity of AchE and BuChE Ache acetylcholinesterase in healthy individuals, on 63 volunteer personnel 38 men and 25 women. A woman with an average age of

22.5 using the experimental curriculum, one of the most important results in this study was that physical exercise significantly affected the levels of activity of acetylcholinesterase and butyrel collinstraase and that women responded less compared to men.

Research approach:

The researcher used the experimental approach because of the appropriateness of the nature of the current research using the experimental design of a trial total by following the tribal and remote standards.

Research community:

The research community represents the 18-man railway club's basketball players under the age of 16.

Sample search:

The researcher chose the research sample from the research community in the intentional way and reached the base sample strength (12) players.

Reasons for choosing the sample:

- The team coach cooperated with the researcher in conducting the research.
- The desire of the players to carry out the search experience.
- Availability of tools (basketball court, assistants and capabilities that help the researcher in the application of research).

Distribution of sample members in moderation:

The researcher checked the extent to which the distribution of the members of the search sample in the variables under consideration was moderate and table 1 explains this.

Table (1)
Moderation of sample members searching for descriptive variables in question (n = 12)

	Variables	Unit of measurement	Average	Broker	Standard deviation	Twisting plants
Basic variables	Age	year	15.50	15.00	0.81	-1.56
	Length	meter	1.75	1.75	0.08	0.50
	Weight	kg	74.80	74.50	8.29	0.14
	Training age	year	3.85	3.00	0.73	-0.58
Harmonic capabilities	Ability to balance	number	12.40	12.00	2.14	1.24
	Ability to organize and direct mobility	number	5.65	6.00	1.07	-0.84
	The ability to distinguish motor	poison	11.45	11.00	2.88	0.68
	Ability to respond quickly	meter	1.35	1.20	0.15	0.27
	The ability to rhythm	number	7.68	7.00	1.06	0.34

Table 1 shows the following:

The twisting coefficients of basic variables, physiological variables and harmonic capabilities variables under consideration for the search sample as a whole ranged from (-1.56: 1.24) to all of those values limited to $(3\pm)$, indicating the moderation of the distribution of the research sample as a whole in those variables.

Data collection methods:

Hardware and tools:

The researcher analyzed the reference framework for Arab and foreign studies and some basketball sites, and the sites of modern techniques for sports training, in order to identify the most important devices and tools associated with the current study.

- Restameter.
- (Stop watch).
- Polar Sport pulse clock.
- Legal basketballs.
- Medical balls (different weights), estek resistance.
- Measuring tape, personals
- Colorful plastic cones, colored cards.
- Colored plastic hoops, stickers (colored markers/numbers).
-

Harmonic capabilities tests :

Test the ability to balance. (Test number of pulleys)

- Testing the ability to organize and guide motor. (Card count test)
- Testing the ability to distinguish motor. (Jump test from above the box)
- Test the ability to respond quickly. (Slide ball test)
- Test the ability to rhythm. (Test the number of jumps in 20 seconds)

Preparing the training program:

The training program was prepared after reading many Arab and foreign references, studies and research, and based on the results of the tribal measurement of the research sample, the researcher prepared the training program in the following steps:

1. The goal of the program:

Design and prepare a range of anaerobic exercises to identify their impact on some physiological variables and some harmonic abilities of basketball builders.

2. The foundations for the development of the training program:

- Taking into account the progression of the exercises is easy to difficult where they are linked to each other in terms of goal and outputs (result).

- Warm-up and calming time ranged from (10:20 BC) to be outside the training unit time.
- Suitable loads for the capabilities of the players and their sunni phase.
- Taking into account the continuity of the gradual rise in training.
- Link the planned performance before performing any skill sentence.
- The speed of the performance of the exercises is ed.
- Calculate the number of successful corrections in each training.
- Add a negative defender and then positive at the end of the exercise.
- Organize the content of the harmonic training program in terms of linking skills and integrating them with motor performance.
- The availability of the element of suspense, seriousness and excitement of players for the proposed exercises.
- Taking into account the similarity of the performance of the proposed exercises to the nature of specialized performance with a no antenna system.
- The rest period between intra-dose training exercises should be suitable for anaerobic work regimen.

- The arrangement of consensual exercises with a simple reaction "performed with skill and with plans", and the combination reaction performed after warm-up.
- Take into account the appropriate composition in terms of size and severity and avoid the phenomenon of g-pregnancy.

The statistical method used:

In light of the objective and the assumptions of the research, the researcher used the following statistical methods:

The median median deviation standard twisting factor test wilcoxon labarometric .

View and discuss results

First view the results:

Table (2)

Indication of differences between the average tribal and distance measurements in the variables under consideration (N = 10)

Variables	Unit of measurement	Statistical transactions									
		Tribal measurement		Telemetry		Average grades		Total ranks		قيمة Z	Probability of error
		Q/	On±	Q/	On±	(+)	(-)	(+)	(-)		
Colin Estraz (rest)	mg	870.4	40.21	980.6	45.37	3.50	0.00	7.00	0.00	-1.577	0.043
Colin Astraz (after effort)	mg	1370.2	55.3	1493.2	80.54	3.50	0.00	7.00	3.50	-1.617	0.039
Ability to balance	number	12.78	1.87	14.37	1.25	6.50	1.50	52.00	3.00	2.504	0.012
Ability to organize and direct mobility	number	5.70	1.05	6.47	1.07	3.35	6.25	7.50	28.00	2.475	0.035
The ability to distinguish motor	poison	11.40	1.65	13.67	1.39	4.00	0.00	28.00	0.00	-2.401	0.016
Ability to respond quickly	meter	1.40	0.17	1.94	0.15	3.67	6.00	22.00	6.00	-2.352	0.021
The ability to rhythm	number	7.70	1.08	8.64	1.09	4.00	0.00	28.00	0.00	-2.530	0.011

Table 2 shows :

There are statistically significant differences between the tribal and remote measurements in the search sample as the probability of error values are below the 0.05 indication level in all variables in question.

Secondly, discuss the results:

Table (2) shows statistically significant differences between tribal and distance measurements in colin estries' concentration rate of rest and after physical exertion; 493.2) Respectively, the average measurement of tribal and remote balance capacity was (12.78) (14.37), the average measurement of the ability to organize and direct tribal and distance kinetic guidance was (5.70) (6.47), average measurement The ability to distinguish tribal and remote kinetics was (11.40) (13.67), the average measure of tribal and remote response speed was (1.40) (1.94), the average measurement of tribal and remote rhythm capacity was (7.70) (8.64).

The researcher attributes the increase in the concentration of Choline Estres to the use of the training program, which relied on the use of integrated anaerobic training using harmonic exercises, which led to further improvement of the physiological response by increasing the response of choline esters both at rest time and after physical exertion, which helped to improve the results of harmonic abilities tests, where as the neurotransmitter improved the response of choline esters improves the compatibility abilities of the player.

The increased speed of the response of choline asteris due to physical training is an indication of improved neuromuscular compatibility, since the neurotransmitter is estylcholine does not last long because its presence prevents polarization so that choline esters can be restored so that polarization can be restored and the formation and fragmentation of the estylcholine occurs with the prescribed speed of polarization and that the enzyme choline estries responsible for cracking the neurotransmitter Estelle Colin responsible for the delivery of nerve signals that make the muscle contract and thus cause muscle fatigue And low neuromuscular compatibility. (15 : 190)

Anaerobic training helps to increase the proportion of choline esters, both at rest and after physical exertion, as this ratio increases with competition and high-intensity physical effort in order to break down the estyl colin to contraction muscles, as the neurons in comfort store about half of the estylcholine present at the end of the nerve in the endoplasmic network, and that estyl colin becomes briefly connected to receptors in the cell after neurotransmitteration where it leads to a distinct response and then breaks down each Estelle Colin is triggered by the choline asteris enzyme located outside the end of the nerve, so training helps increase

the amount that exists while increasing the speed of its response to muscle contraction. (1 : 23)

The different intensity of physical exertion affects the concentrations of choline estriars by increasing its concentration in comfort or time of physical exertion as a result of its presence in the places of voluntary neurogrouping, supraperineal gland and places of muscle union in the nerve so that it has an effect on the place of arousal and its local effect as it is triggered by adriatic nerve nodes, epinephrine secretions and norepinephrine, causing muscle contraction sooner and stronger. (17 : 998)

Estyl colin molecules are also rapidly broken by choline asteris and this process is very important if it does not occur, the neurotransmitter Estelle Colin will continue to function as a neuroconductor, causing muscle spasm or so-called tetanus, so increased response of physiological activity to choline estriars helps in the occurrence of neuromuscular compatibility during the performance of motor skills. (9 : 41)

Anaerobic training based on energy production systems leads to an increase in the body's need for oxygen for the muscle cell and in response, the demand for oxygen will increase, and the respiratory system will be affected and the respiratory depth will increase as a result of the adaptation of pulmonary volumes and capacities, especially the strength of the pectoral muscles and between ribs, in addition to improving the gas exchange between blood and pulmonary follicles as a result of the branching of a large number of capillaries inside the lungs and surrounded by pulmonary follicles, which is certainly the result of the branching of a large number of capillaries inside the lungs and surrounded by pulmonary follicles. of consistency and harmony between the respiratory circulatory system. (11 : 792)

Through the previous presentation, it is clear that improving the response of Choline Estriars, both at rest time and after the effort, was the result of anaerobic training and was reflected in some physiological variables associated with the anaerobic system and improved players' ability to perform harmonic abilities as a result of increased activity of the choline estriars enzyme, which improved the neuromuscular compatibility of the players.

Conclusions and recommendations

First: Conclusions:

- Choline estries improves its physiological activity due to anaerobic training at rest time and this is reflected in increased stock when measured before physical exertion.
- Anaerobic training increases the efficiency of choline asterise after high-intensity physical exertion by increasing its secretion.
- There is an excretional relationship between the severity of physical exertion and the secretion of choline asterisz, where the more severe physical performance the secretion of choline asteris increases.
- Increased activity of choline asterise enzyme improves balance ability as a harmonic abilities.
- Increased activity of choline estries is good for the ability to regulate and guide motor as a harmonic abilities.
- Increased activity of choline asterise enzyme improves the ability to distinguish motor as a harmonic abilities.
- Increased activity of choline asterise enzyme improves the ability to respond quickly as a harmonic capabilities.
- Increased activity of choline estries is good for rhythm ability as a harmonic abilities.

Second: Recommendations:

- Use the anaerobic training program to train basketball players to improve neuromuscular aspects by improving the activity of the choline estries enzyme.
- Conduct studies linking the activity of choline asterise enzyme with some other harmonic abilities not used in the research.
- Use other training methods to identify their effect on choline asteris and their relationship to neuromuscular compatibility.
- Linking the electrical activity of the muscles with the activity of the enzyme choline asteris.
- Conduct a study to identify the impact of increased choline esters activity on strength and speed other than the performance of harmonic skills.

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