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

The effect of variation in concentration level (ATP) and its relationship to endurance status as a determinant of selection in some games and sports activities

A.D Majid Shandi Wali [1], A.M.D Maytham Kazem Daragh [2], Ameer Jassim Muhammad [3]

[1,3] College of Physical Education and, Sports Sciences University of Maysan, Iraq
[2] Faculty of Science, University of Maysan, Iraq

Email: mailto:dr.majid1963@gmail.com, mailto:maithamdragh@uomisan.edu.iq, ameergasim11@gmail.com

Abstract

The problem of this study came in the lack of scientific research that dealt with the topics of the studied phenomenon, namely the energy index, which we find among the very important variables in the field of energy production for humans in general and athletes in particular, and the study aimed to identify the energy levels represented by (ATP) among the members of the research sample And to identify the relationship of the association of the level of concentration (ATP) and the trait of tolerance and according to the type of activity practiced as a determinant of the mathematical selection of the members of the research sample. The researchers concluded, the study showed a variation in the levels and concentrations of ATP among the subjects of the research sample and according to the type of activity, and the variance showed a correlation and according to the type of activity.

1- Definition of the research:

1-1 Introduction and Importance of Research:

Since the beginning of creation, man has been searching for everything new to provide the requirements for the sustainability of life, and thus he adopted the approach of distinguishing between things in order to achieve the desired goal, and he took and continuously repeated research experiments whenever necessary for that in line with the environment in which he lives, from here it was necessary He has to provide the requirements of that research beyond his failed experiences and consolidate all successful experiences until this method has become one of the characteristics inherent to him as an intelligent creature.

It is recognized, and through the foregoing, physical education has taken a significant volume from that development and repeat experiences, and what we see today in terms of sports achievements that sometimes exceeded the capabilities of traditional human beings, which also came in harmony with that diligent research that did not leave a stray or an incoming one but went into it. Among the things that have been adopted by those in charge of the sports field in choosing athletes are those determinants related to the nature of performance and the physical characteristics associated with it, until that choice produced in most cases good results that can

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

be relied upon in choosing athletes according to the different sports and has witnessed the selection process in years The last reliance on the junior category is due to the painstaking effort and years involved in the making of the Olympic champion, which sometimes produced results that are inconsistent with the desired goals, because that choice is linked to determinants that may sometimes be subjective, and it is useful to mention here that our study The current in highlighting the most important functional indicator that an athlete can possess in line with effectiveness.

From here comes the importance of research by shedding light on the most important functional determinants through which athletes can be selected, as well as shedding light on the ATP energy index, which we find among the very important variables in the field of energy production for humans in general and athletes in particular, as most studies have not been able. The specialized and non-specialized study of this compound for technical and other scientific reasons, and through the foregoing highlights the importance of our research, which we find from research that dealt with a phenomenon that was not traditional in the context of physical education studies.

1-2 Research Problem:

The studied phenomena are based on all the literature on scientific research as being in all cases stimuli for human thought to delve into the fields of knowledge, whether these phenomena are unmet needs or obstacles to fulfilling desires or interrogative sentences that need an answer, as in all cases they will plague human thought to wade Within the framework of these phenomena, there are solutions that can be used in different fields of knowledge, and among the things that are classified as the main nerve in practicing different sports in the selection process, and of course that selection is governed by a set of determinants, sometimes they are physical and others that may be skillful and sometimes Researchers are going to legalize the selection process on functional grounds.

Through researching researchers on many scientific sources in the field of mathematics, to notice that this field of study did not take enough in the field of scientific research in the field of physical education, so the problem of this study came in the lack of scientific research that dealt with levels of ATP linked to the capacity of endurance as a determinant of selection The mathematician, as the researchers elaborated on this phenomenon and their problem crystallized, that one of the important determinants that were not selected according to them are the determinants that give objective results of what the individual possesses of energy and this saves time and effort. From here the phenomenon of research was a need that was not satisfied by going through In a field in the energy index as a determinant in the selection process, which the researchers considered the link between the variation in the ATP concentration level and the tolerance characteristic as a determinant of selection in their belief in understanding the correct relationship to the effect of the variation in the ATP concentration level and its relationship to the endurance quality of football and weightlifting players.

1-3 Research Scorer:

1- Knowing the level of the energy index represented by (ATP) among the subjects of the research sample.
2- Identify the correlation between the level of ATP concentration and the tolerance profile of the subjects of the research sample.

1-4 Research hypotheses:

1- The presence of varying levels in the energy index (ATP) among the subjects of the research sample.
2- There is a correlation between the level of (ATP) concentration and the tolerance characteristic of the subjects of the research sample.

3- Research methodology and field procedures:

1-3 Research Methodology:

Choosing the appropriate approach to research the problem is one of the important steps on which the success of the research depends. Therefore, the researchers used the descriptive approach to suit the research problem.

2-3 Research Sample:

The research sample was deliberately chosen from the players of the Maysan governorate national team in football and weightlifting, the junior category for the 2019-2020 season, whose number was (11) footballers, who represented 61% of the original community and (11) quadrants in the sport of lifting Weights, as they represented 73% of the original community, and the researcher subjected the sample to a clinical examination by a specialist doctor and made sure that it was free of injuries, in addition to that the procedures used in the research were based on conducting examinations and tests according to two groups, one of which represented football The second was for the effectiveness of weightlifting and to avoid factors that may affect the search results in terms of individual differences among the players, as the researcher took into account the homogeneity component of the research sample in terms of (chronological age, height, mass, training age) and it was found that there is clear homogeneity in those variables. No individual research sample.

Table (1) shows the arithmetic mean, standard deviation, the mean, the value of the torsion coefficient and the coefficient of variation for the study sample.

Coefficient of variation	Coefficient of torsion	Mediator	±A	-S	measuring unit	Statistical means / Variables	No
0.179	0.734	15.235	0.888	15.136	Year	Chronological age	1
1.292	0.352	7.764	0.795	3.818	Year	Age of training	2
0.490	0.140	1.643	0.330	1.640	cm	Length	3
0.749	0.17	57.166	1.712	57.09	Kg	Bloc	4

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

3- Methods of data collection:

3-3-1 Evidence-gathering methods and tools used in the research:

- Arab and foreign scientific sources and references.
- International Information Network (Internet).
- Tests and measurements.
- A stress test results registration form ATP results registration form.
- Assistant staff.

3-3-2 Devices used in the research:

The researcher used the devices (treadmill device, height and weight measuring device, electronic calculator, DELL calculator)

Analysis devices include:

1- Chilled Epindroff Centrifuge (Germnay).
2- Sartorius (Germnay) sensor balance.
3- Shownic (Korea) magnetic thermal heater.
4- Vortex Medilab (Korea) vibrator.
5- Nano Drop to measure protein intake
6- ELISA test to measure ATP level

Medical tools include

1- ATP Colorimetric Assay Kit.
2- Tubes to store blood samples (Normal) (EDTA).
3- A cool box to transport blood samples to laboratories.
4- Prepared laboratory materials for laboratory measurements purposes.
5- Superestar sterile solution (India).
6- Medical syringes (2 ml) for counting blood samples Superestar (India).
7- Plants of different sizes, 10-100-1000 L.
8- Different sized micro pipettes Dragon (China).
9- (RPC buffer).

3-4 examinations and tests used in the research:

For the purpose of conducting the functional measurements, (2 ml) blood sample was drawn from the members of the study sample by plastic syringes (2 ml) used for one time only and by a specialist, and then (1 ml) was placed in (Eppendorf) tubes numbered with a specific number

for each individual sample The study with the addition of buffer (RPC) and the blood samples are placed in a medical box and the blood is transported to the place designated for the purpose of the analysis process, and the process of detecting the amount of the enzyme manufactured for the energy complex (ATP) of the study samples is carried out according to the MATP Synthase Microplate Assay Kit User Manual Where the amount of enzyme synthesized for the energy complex ATP is detected through the following steps and according to the used kit:

1- (400 Lμ (of blood) is placed in (1.5 ml) Centrifuge tube). (600 Lμ) is added (RBC Buffer) for washing red blood cells is gently shaken for (10) seconds, after which it is centrifuged (10,000 rpm for (5)). A degree of (4) m minute, the process is repeated for (3-4) times, to remove red blood cells.
2- Add (99 Lμ) from Assay buffer I, and then (10 Lμ) from (Assay buffer II). After putting it in ice at a temperature of (4 C), centrifugation is done (600 rpm) for a period of (5) minutes at (4 C).
3- The supernatant layer is taken in a new 1.5 ml (Centrifuge tube) and placed in a refrigerated centrifuge (1100 rpm) for a period of (10) minutes and at a temperature of (4 C).
4- The top layer is removed and (198 Lμ) from (Assay buffer III) and then (2 Lμ) from (Assay buffer II) to the precipitate).
5- It is placed in the ultrasound device (Sonicate) (20% power sonication 3s, 10s - intervation repeated 30 times), and then centrifugal work (11000 rpm) for a period of (10) minutes at (4m).
6- The supernatant layer is taken in (1.5 ml) a new Eppendorf tube and kept in ice for use. The amount and efficacy of the ATP synthesis enzyme (Complex V) is measured using an (Assay procedure with an ELISA device) on a wavelength (660 nm) according to the attached protocol Kit for the supplied company.

3-4-1 Physical Tests

The researcher approved the aerobic capacity test (the Strand-Saltin test) (1) which is standardized and available in scientific sources and references for the purpose of testing the endurance characteristic.

3-5 Field Research Procedures:

The researchers applied the physical test and physiological examinations on the study sample of (22) players on Thursday (1/3/2019) to perform the physiological examinations and test the aerobic capacity.

3-6 Statistical treatments: The researchers used the statistical bag (SPSS (vr21)) for the purpose of statistical treatments.

4- Presentation, analysis and discussion of the results:

4.1 Presentation of results

4-1-1 Presentation and analysis of the results of the relationship (ATP) with the endurance test of soccer players:

Table (2) between the arithmetic mean, standard deviation, and the calculated and tabular correlation coefficient value for the (ATP) compound with the endurance test for football players

Moral	Indication level Sig	Tabular (R) value	Computed (R) value	standard deviation	Arithmetic mean	Statistical means / Variables
Moral	0.003	0.257	0.805	0.890	4.136	ATP
				0.923	15.86	Endurance

Degree of freedom (n-2) and level of significance (0.05)

It is noted from Table (16) that the arithmetic mean of the energy complex of ATP for football players reached (4.136) with a standard deviation (0.890), while the arithmetic mean of the endurance characteristic reached (15.86) and a standard deviation (0.923) for football players. The value of the simple correlation factor Pearson in between (0.805) is greater than the tabular (R) value of (0.257) below the significance level (0.003) and it is smaller than (0.05), which means that there is a high significant correlation relationship between the ATP compound and the tolerance trait. For soccer players.

4-1-2 Presentation and analysis of the results of the relationship of ATP with the endurance test for weightlifters:

Table (3) shows the arithmetic mean, standard deviation, and the calculated and tabular correlation coefficient value for ATP) along with the durability characteristic of weightlifting players.

Moral	Indication level Sig	Tabular (R) value	Computed (R) value	standard deviation	Arithmetic mean	Statistical means / Variables
Moral	0.007	0.257	0.760**	1.224	3.867	ATP
				1.51	14.51	Endurance

Degree of freedom (n-2) and level of significance (0.05)

It is noticed from Table (18) that the arithmetic mean of the (ATP) compound for weightlifters reached (3,867) with a standard deviation (1,224), while the arithmetic mean of the strength characteristic was (13.87) and with a standard deviation (1.054) for weightlifters, and the value of the correlation factor reached The simple Pearson in between (0.760), which is greater than the tabular (R) value of (0.257), below the significance level (0.007) and it is smaller than (0.05), which means that there is a high significant correlation between (ATP) and the endurance characteristic of heavy players.

4-1-3 Discussing Energy Complex (ATP) results and Tolerance Recipe Test:

The researcher believes, and before going into the interpretation of these results, he sees that this variable is one of the most important variables that our current study dealt with for several reasons, the first of which is because this compound represents a great importance in the overall vital actions of the human body as fuel for the energy on which all vital actions are based.

The second importance lies in the fact that the levels of this compound give a real impression of the role of genetic engineering in the function represented by genes and the information they carry to build muscles and other vital organs. The researcher also believes that the importance in studying this variable lies in being a true and true criterion for the whole metabolism process in the human body. And the vital actions that result from it are all mathematical achievements, in addition to that (adenosine triphosphate) is a clear and real indicator of the functioning and efficiency of mitochondria, which most physiological studies have not been able to address for reasons, and through the above we see that it is very useful to adopt the element of the study (ATP) is an indicator for the selection of athletes, taking into account the interpretation of the results according to what was mentioned above.

"Hence, the importance of energy and its systems in football is evident as it contains all of the air energy associated with the element of protractedness, so one of the most important goals of physical training in football is to develop and accelerate the possibility of working on the process of providing (atp). This means that the training process is one of its most important goals is to know the biochemical foundations of the energy system prevailing in that activity, for the purpose of continuing to perform the characteristic effort, and from here it is necessary to know the physiological and biochemical effects of the physical effort (1).

By looking at Table (2) for the statistical treatments of the correlation relationships between the variable (ATP) and the recipe for tolerance among soccer players, it becomes clear that the correlation relationship was strong and it represents an inevitable result of the members of the group of soccer players having high levels of ATP that also produced results. It is worthy of attention in the endurance test and reflects a specific reality in the selection of this variable, and of course the researcher believes that choosing this sample to practice the effectiveness of football was a good choice even though it came according to a vision that we see as subjective

and that adopted physical and skill criteria in the selection and what accompanies that Those who have reservations about the results of the physical aspect that may shade those involved in the sporting genius if we want to develop future strategies for making the Olympic champion, and this is consistent with what the mechanism indicated, “The selection of players is done through their education and training, where that classification begins to choose the best and the best for practice, and the optimal selection helps in Predicting the future level of the player. There are foundations and determinants of the selection process that include all of the genetic characteristics of the individual, growth indicators, and the functional characteristics of the youngster (2).

On the other hand, and the results of the endurance test results, the members of that group can achieve good results. They must also produce a statistical product consistent with the nature of the above through the principle of integration in physical and functional work. Among the important functions that affect the physical aspect are the quality of working muscle fibers and Directing the metabolism to the aerobic systems and the resulting efficiency in the relevant physical examination, "and this is consistent with what Abu Al-Ela Ahmed and Ahmed Nasreddin indicated" that one of the most important obstacles that stop muscular work in conditions of aerobic endurance is the lack of oxygen coming to the working muscles and its insufficiency To produce the energy required to continue performing "(1).

And by looking at Table (3), which represented the results of the association with the members of the weightlifting group in the (ATP) index, the tolerance prescription was inconsistent with all the data that, and the reason for this is due to the subjective selection mechanisms that depended on the factors apparent in the selection processes, which are often not It represents a real willingness to display certain characteristics and practice sporting activities without others. ”Highlights the importance of the genetic genes responsible for physical characteristics, especially those responsible for highlighting the muscle strength of weightlifters represented by the genes responsible for highlighting.

The strength attribute "(2), and this is confirmed by the correlations, which reflects the randomness of the selection process. The researcher believes that the levels of (ATP) of the group of weightlifters were also consistent with the characteristic of endurance.

Through the foregoing, these results also show a state of subjectivity in choosing weightlifting players, as their state of readiness requires that the genetic processes be directed towards anaerobic metabolic processes consistent with the duration of the stimulus and the adaptations that occur in that if we know that the duration of the stimulus in the effectiveness of weightlifting Short and fall within the range of phosphogenic energy, and this means that a group of weightlifting players are physiologically suitable for sports characterized by endurance and the ability to exert continuous effort, as the effectiveness of weightlifting is a sport in which the characteristic of strength is mainly manifested and it depends on the rapid phosphogenic energy system, that is, it does not require a great deal From (atp) for the purpose of performance, and this is consistent with what he referred to the mechanism of ““ Weightlifting is one of the most important sports in which the characteristic of strength is

clearly manifested and is as old as the emergence of man in nature, and the sport of weightlifting represents the ability of the athlete to achieve individual achievement As is the case in other individual activities (3).

And in another interpretation that should be taken into consideration, which is the quality of the muscle fibers working in, which are commensurate with the activity or activity practiced, it is known that the muscle fibers of the first type, which are compatible with endurance sports, and muscle fibers of the second type, which are commensurate with sports strength and speed, and this is what The Risan Khuraibet mechanism "The functional difference is accompanied by distinct biochemical properties. The muscles responsible for performing the functions require a rapid transition from calm states to active activity and are characterized by having a great ability to reconstruct the anaerobic method of energy-rich phosphorous compounds as well as the highest activity and the highest activity of the ATP enzyme, as for the muscles." Those that perform continuous processes that need endurance, unlike type II muscles, are characterized by their great ability to take in oxygen and the activity of enzymes responsible for metabolism processes accompanied by oxidation, and the muscles that perform physical exertions accompanied by strength are characterized by containing the largest amount of myosin and high efficacy (3).

Hence, the concerned parties had to follow the optimal methods of choosing and adopting the processes of proportionality between the factors of energy production and the physical efforts in the exercise of sports activities and knowing what the individual possesses of the determinants, whether physical, physiological or genetic.

5- Conclusions and recommendations

1-5 Conclusions:

1- The study showed a high significant correlation between the ATP and the tolerance recipe for soccer players.
2- The study revealed a high significant correlation between the ATP and the endurance prescription for weightlifting players.
3- The study showed a clear superiority of soccer players in terms of endurance, as it is an essential physical characteristic of football.

2-5 Recommendations:

1- Putting the researchers' findings within reach of different clubs and national teams, for use in the training process.

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

2- Conducting similar studies and research on different age groups with the addition of physiological and genetic variables in order to legalize the selection process and bring players to the best levels.
3- The necessity to rely on physical, physical, physiological and genetic measurements when selecting young people

References

1- Imad Kazem Yasser Al-Shamkhawi: Physiological and Chemical Tests, 1st Edition, Al-Wadah Publishing House, Amman, 2019.
2- Risan Khuraibet: A Selected Group in Training and the Physiology of Sport, 1st Edition, the Book Center for Publishing and Printing, Cairo, 2014.
3- Adel Abdel-Basir: Mathematical Training and Integration between Theory and Practice, 1st Edition, Al-Kitab Center for Publishing, Cairo, 2015.
4- Abu El-Ela Ahmed Abdel-Fattah and Ahmed Nasr El-Din: Physiology of Physiology. Cairo: Arab Thought House, 2003.
5- Abd Ali Nassif and Sabah Abdi: Skills and Training in Weight Lifting, Higher Education Press, Baghdad, 1988.
6- Raysan Khuraibet Majeed: General Theories in Sports Training, Al-Shorouk Publishing and Distribution House, Jordan, 1998.
7- Ahmetov II, Rogozkin VA: Genes, Athlete Status and Training, An Overview, Genetics and Sports, Collins M. (ed), Medicine and Science in Sports and Exercise, Basel, Karger, 200.

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020