

THE EFFECT OF USING VARIOUS SPORTS ON MAINTAINING THE LEVEL OF SPEED ENDURANCE AS A FUNCTION OF THE FATIGUE INDEX OF ANOXIC CAPACITY AND LACTIC ACID AMONG IRAQI PREMIER LEAGUE FOOTBALL PLAYERS DURING THE TRANSITIONAL PERIOD

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Abstract

The progress achieved in the sports field and in most countries of the world was not the result of coincidence, but rather was the result of using modern scientific methods in planning and training and relying on scientific foundations to solve the problems that stand in the athlete's way and prevent him from reaching the high level. Perhaps the challenges faced by those responsible for developing sports games and football in particular have prompted those with experience and specialization and those working in the field of football training to always think about finding the best methods and methods that contribute to developing and raising the players' physical, skill, functional and other capabilities, in a way that meets the requirements for rapid and accurate performance. To play, which leads to achieving great sporting achievements at various levels. Therefore, the transitional period is one of the important stages in the annual training cycle (the preparation period in its general and private sections - the competition period - the transitional period), which separates the end of a season from the beginning of a new sports season. Its goal is positive rest to maintain a certain level of different physical abilities through activities and games different from what the athlete practices in football, when stopping training through recreational activities. During this period, the coach can reduce the decline in the level of physical and functional performance, provided that he plans well and prepares various exercises for the transitional period with great care, and uses various methods that include both excitement and recreation, and during this period, if they are dealt with positively by both parties (The coaching staff - the player), its results will be fruitful and reflect positively on the position and condition of the football player, especially the physical and psychological, in preparation for the preparation period for the new season, meaning that he does not start (from a low physical level), and this will happen if he deals with this period negatively, from During wrong practices such as (eating excessive meals and unhelpful drinks - changing the natural sleeping pattern - abandoning the ideal weight). From here lies the importance of the research that the transitional period is the period that links the end of the season and the beginning of the preparation period, and its goal is to maintain a certain level of fitness. Physical and functional capabilities, and

since the researcher is looking to activate an important period of the football player's periods during the training season, therefore the researcher decided to prepare various exercises for the transitional period in order to maintain the level of physical and functional performance of Premier League football players.

Introduction

Research problem

The neglect of the transitional period by most Premier League football teams and the lack of interest in it leads to not maintaining the level of performance that the player reached at the end of the competition period and entering the transitional stage and preparing for the next season with a clear decline in physical and functional capabilities. It has become a real problem that (the player - From the coach's side, the preparation period is the annoying period during which the components of the training load accumulate on the player in a short period, and this negatively affects the player's motivation when he arrives at the competition period while he is in a state of boredom and physical and functional pressure. From the coach's side, it is a problem that most coaches suffer from. Premier League because the preparation period is not sufficient to implement all the physical, functional, skill and tactical aspects, and here the coach does not cover the training curriculum completely and is forced to enter the competition period while he is not ready, and for this reason the transitional period is the beginning of the foundation for the following period (preparation). . Through the researcher's practice of football as a player and a coach, he noticed that at the beginning of the training season (the preparation period), the players come after the transitional period and have a clear decline in the level of physical fitness compared to their level at the end of the competition period. This is most often due to interruption of training and leaving the players without A training curriculum at this stage, which leads to a sharp decline in physical level as a result of the passive rest given to the players during that period.

Research Aims

1. Identifying the level of fatigue index among Iraqi Premier League football players during the transitional period.
2. Identifying the level of lactic acid among Iraqi Premier League football players during the transitional period.
3. Identifying the level of speed endurance among Iraqi Premier League football players during the transitional period.
4. Identify the percentage of change in the level of speed endurance among Iraqi Premier League football players during the transitional period.

Hypothetical search

1. There are no statistically significant differences between the results of the pre- and post-tests in the research variables for the control and experimental groups.
2. There are no statistically significant differences between the control and experimental groups in the post-tests.

Research areas

- ✓ The Human Field: Al-Karkh and Al-Hudoud Sports Club football players for the season (2023-2024)
- ✓ Temporal scope: The period from 8/4/2023 until 9/17/2023.
- ✓ Spatial area: (swimming pool, playgrounds, and halls for physical education and sports sciences at the University of Baghdad), (stadiums and halls of Al-Karkh Sports Club), (Zawraa Park and Recreational Gardens), (stadiums and halls of Al-Shabab Sports Club), and (stadium Al-Shaab Beach Soccer and Ground Tennis, and (Al-Mashreq Club Swimming Pool)

Research terms

The transitional period: It is the bridge that connects the end of the competition period and the beginning of the new preparation period. It aims to get rid of the products of excess load during the previous period and prepare the body to absorb the following training doses. It is the bridge that connects two phases, and it is the period of active rest in which recovery is restored as a prelude to the transitional phase. Preparation ahead (Dietrich H., 2001, p. 590) Fatigue indicator: It is a decline in the efficiency and level of the athlete and the inability to perform the exercise or training effectively. Fatigue is a natural physiological process and reaction that protects the muscles from reaching the stage of fatigue, as fatigue represents the beginning of stress if it is not treated. (Al-Lami, 2010, p. 92)

Various sports: These are activities or events other than the main event that help the player maintain some level of physical and functional capabilities. On the other hand, they are the recreational part for the player in order to break the barrier of boredom from competitions and during the league.

Research Methodology

The experimental method is considered one of the most scientific methods that clearly shows the features of the scientific method (Al-Abadi, 2015, p. 82). It searches for the cause and how it occurs. Experimental research is characterized by being a precise, controlled scientific activity, and it is a procedure to control the influential factors surrounding the experiment (Al-Rubaie, Ahmed, and Al-Hadithi, 2018) and that the research problem forced the researcher to use the experimental method by designing two equal groups (experimental and control) with pre- and post-tests, to suit the nature of the problem of the research study and to achieve the research objectives and hypotheses.

Research community and sample

It is necessary and important to choose the sample that suits the nature of the research, and the research community was chosen intentionally, and they are the players of the Iraqi Premier League in football, numbering (20) clubs for the season (2022-2023). The research sample is the part that represents the community of origin, and it was Choosing one of the two clubs as a control group and the other club as an experimental group through a lottery, and randomly. The research sample included (25) players from (Al-Karkh Club and Al-Hudoud Sports Club) from the total number of Iraqi clubs participating in the Premier Football League, as (5) players were

excluded. Due to their lack of commitment to the training and their interruption from it, the number of players in the two groups was fixed equal, and they were divided into two groups of equal numbers, the control and the experimental, with (10) players for each group in a random manner, and (Al-Hodood Sports Club) was chosen through the lottery method, as in Table (1) Medians. Arithmetic, median, mode, standard deviation, skewness coefficient, Komenkov-Smirnzef test, and the level of error in anthropometric and anthropometric measurements, age, training age, height, mass, and homogeneity, which show the variables that affect the study.

Table (1)

Error level	Komenkoff-Smirnz test	Torsion coefficient	standard deviation	Loom	Mediator	Arithmetic mean	measuring unit	Variables
0.200	0.1460	0.383	3.993	24,000	24.500	25.500	year	the age
0.074	0.184	0.502	2.876	10,000	11,000	11.800	year	Training age
0.142	0.1680	0.225	0.062	1.700	1.720	1.739	poison	height
0.200	0.1390	0.028	5.104	69,000	68.500	67,500	Kg	Bloc

n=20

From the table above it is clear that the skewness coefficient was limited to (± 1), and it is also clear that the error level in the Kormenkrov-Smirnov test was more than (0.05) in all the research variables, which indicates the homogeneity of the study sample in terms of age, training age, height and mass.

Table (2) shows the arithmetic means, standard deviations, the calculated (t) value, the level of error, and the significance of the differences between the two study groups in the variables under investigation in the pre-test.

indication	Error level	Calculated t value	Control group		Experimental group		measruing unit	Variables
			A	s	A	s		
random	0.388	0.885	1.055	35.703	1.097	36.129	sec	Endurance speed
random	0.995	0.007	5.253	57.641	6.794	57.659	%	Fatigue index
random	0.818	-0.234	0.945	2.165	0.370	2.090	mmol	Lactic acid concentration before exertion
random	0.653	0.458	1.939	13.310	1.870	13.700	mmol	Lactic acid concentration after exercise

Degree of freedom ($10+10-2=18$)

*Significant at the error level (0.05) if the error level is smaller than (0.05)

From the table above it is clear that the randomness of the differences in the results of the t-test between the experimental and the control group in all the tests under study, which indicates the randomness of the differences between the control and experimental groups at the error level (0.05) and in front of the degree of freedom (18) in the results of the pre-test, which indicates The two research groups are equal in all variables under study.

Means of collecting information, tools and devices used:

Methods used to collect information:

The researcher used the following methods to collect information:

1. Arab and foreign sources and references.
2. Tests and measurement.
3. Personal interviews with experts and specialists.
4. Observation and experiment.
5. International electronic network information.

Tools and devices used

1. Toshiba laptop.
2. A device to measure mass in kilograms (scale) and length in square centimetres electronic stopwatch, flott type.
3. Sports halls for volleyball, handball, basketball, five-a-side football, tennis court, beach tennis court
4. Swimming pool.
5. Volleyball, handball, basketball, football, tennis ball, beach tennis ball.
6. Bicycles.
7. Tape to measure area (50) meters.
8. iPad, type (Apple), number (1)
9. Lactic pro device.
10. Whistle.
11. Cones.
12. Functional signs.
13. Signs.
14. MONARK stationary bicycle.

Field research procedures:

Defining research variables and choosing their tests:

In light of the scientific references and sources in sports training, football, and sports physiology, and the opinion of the supervisors, the seminar committee, and the scientific committee, the investigated variables were identified, which are appropriate for the research sample, and they were represented as follows:

1. Endurance of speed.
2. Fatigue index.
3. Lactic acid concentration.

Research tests:

Speed bearing

Test name: Running test based on anaerobic speed.

(European Society, 2018, p. 22)

Purpose of the test: to measure speed endurance.

Required resources: stopwatch (2), measuring tape, signs, an area of no less than (45 m) in length and (2 m) in width, timer (2), arbitrator and recorder, registration form.

Procedures: The test path is determined to determine the area by means of signs. The length of the test path is (35 m) and a width of not less than (1 m), with two resting areas being determined after the start line (A) and the finish line (B), which are (5 m) long. The tester stands behind the starting line (A) and when he is ready, he starts running at full speed to the finish line (B). After a rest period of (10) seconds, the tester starts again from line (B) at full speed to line (A), and the tester repeats this. Procedure until he completes six consecutive starts. As in Figure (2)

Recording: The time of each start is recorded, and the final test time is calculated by summing the time of the six starts to the nearest hundredth of a second, and each tester is given one attempt.

Fatigue index

Test name: 30-second Wingate Test

(adnan, lsmadi, ismail, & norasrudin, 2014, pp. 483-484)

Purpose of the test: To measure anaerobic capacity by performing the greatest possible work for 30 seconds.

Equipment required: Monarch bike and accessories, computer.

Procedures: After taking the tester's height and weight, his data is entered into the test program on the computer, and the resistance is determined according to the tester's weight, which is (75 grams) for every kilogram of the tester's weight, and the bicycle seat is adjusted so that there is a very slight bending angle at the knee joint of about (10). Degrees, then adjust and fasten the foot strap. A resistance of (1-2 kg) is applied relative to the weight of the tester to perform the warm-up for (3) minutes. Then the test procedures are explained with a warning about the start moment announcement. To be sure, before performing the test, the tester performs at maximum speed for (3-5) seconds and repeats this twice. Or three, and the rotation indicator (RPM) is turned on to monitor the speed of rotation of the wheel since the beginning of the measurement. Gently lift the weight from the weight basket and the tester begins moving the wheel at the maximum possible speed (not less than 80 revolutions per minute) for a period not exceeding (3) seconds. Then the weight is lowered and the distance measurement is activated from the keyboard to begin the measurement process. The performance continues for (30) seconds, at maximum speed, without stopping. The tester is encouraged to maintain the speed of rotation, and a cool-down must be performed after completing the test.

Recording: During this test, the maximum anaerobic capacity is calculated.

Measuring the concentration of lactic acid level:

Objective of the test:

Measuring the level of lactic acid concentration in the blood before and after exertion, after running on a bicycle.

Used equipment

Lactate Pro device, lancing device, lancets, check strip, lactic acid test strips, and two batteries to operate the device (3 volts)

Test description

The check strip is placed in the slot for the strip, as this strip operates the device. When the strip is placed, a reading appears between (2.1 - 2.6 mmol/L), as the reading between these two numbers indicates that the device is sensitive to temperature and humidity and is ready to begin measuring. Most of the time, the device gives a reading of (2.3 mmol/L). If the device reads more than the specified range of the test strip or less, this indicates that the device is not compatible with the temperature and humidity of the surrounding atmosphere, and therefore the device must be left for (20) minutes until the sensors on the front of the device sense the surrounding atmosphere. After preparing the device, the standard strip (Calibration strip) is inserted. Which is found in every box of lactic acid measuring tapes that bear numbers between (0-F to 12-F) printed on the inserted strip, as the number for the inserted strip must match the number printed on the back of the lactic acid measuring strip box. lactic acid, then the inserted strip is taken out and a third strip for measuring lactic acid (Test strip) is inserted, but the process of inserting the third strip must be preceded by the process of placing the drill in the drill device and then sterilizing one of the fingers with sterile alcohol and wiping it well (drying it) then pressing one of the fingers with the drill device. Fingertips and then press the side button of the drill device, as this process will cause the drill to come out and penetrate the skin, which will lead to a drop of blood coming out. The drop of blood is placed directly on the third strip located in the front opening of the device for the three strips, as its end will be visible. A drop of blood flows from the beginning of the strip to the beginning of the area marked with a marker. When the blood reaches this area, a timer will appear indicating that you must wait one minute for the result to appear on the device (59) down to (1) second. After that, the reading for the lactic acid concentration will appear. The test is taken. After exertion for (7) minutes.

Pretest

The pre-test was carried out on the research sample of (20) players on August 5 and 6, 2023. The first included a speed endurance test (35 m), and the second day a fatigue index test was carried out on a stationary bike (monark)

Main experience: The researcher prepared various exercises with the aim of maintaining the level of performance (speed endurance and fatigue index) for the Premier League football players for the experimental group of the (Al-Hodood) Sports Club. The number of these exercises was (18) and training horseshoes, with (3) training units in the first two weeks and the remaining three weeks. (4) training units per week for (5) weeks, provided that the player's pulse rate does not exceed 75%, and the playing style was used "as the training load is characterized by fluctuations and not at a single pace, and thus it is considered one of the foundations of improving the components of the training load" (Ali and Fakher (2010, p. 60) The researcher also relied on distributing the intensity according to the weeks using a wave method, and rest was determined based on scientific sources (Al-Madamagha M., 2008). The researcher gave these exercises in an organized manner, with intensity, specific repetitions, and rest periods commensurate with the intensity. The control group is subject to the team coach's curriculum only.

Posttests

As for the post-tests, they were carried out under the same conditions as the pre-tests, over the course of two days 16 and 16

.2023/17/9

Statistical methods

The researcher used the statistical package (SPSS) and some statistical laws to extract statistical results. The laws are:

(arithmetic mean, median, standard deviation, skewness coefficient, T test for non-independent samples, T test for independent samples, retention ratio law, Komenkov-Smirnov law)

Presentation and discussion of results: The results obtained by the researchers from the use of statistical methods (skewness coefficient, arithmetic mean, standard deviation, t-test for independent samples) were as shown in the tables below:

Table (3) shows the arithmetic means and standard deviations in the physical variables in the pre- and post-tests for the experimental and control research groups.

Posttest				Pretest				measruing unit	Variables
Experimental group		Control group		Experimental group		Control group			
p±	s	p±	s	p±	s	p±	s		
1.188	37.113	0.881	40.832	1.097	36.129	1.055	35.703	sec	Endurance speed

Table (4) shows the difference of the arithmetic means, its standard deviation, the calculated (t) value, the significance of the differences, and the percentage of change between the results of the pre- and post-tests in the physical variables of the experimental group.

Developm %ent rate	Meaning of differences	Error level	t value Calculat ed	F A±	F	meas ruing unit	Variables
-2.724	random	0.082	-1.958	1.589	-0.984	sec	Endurance speed

Degree of freedom (10-1=9)

*Significant at the error level (0.05) if the error level is smaller than (0.05)

Table (5) shows the difference of the arithmetic means, its standard deviation, the calculated (t) value, the significance of the differences, and the percentage of change between the results of the pre- and post-tests in the physical variables of the control group.

Developm %ent rate	Meaning of differences	Error level	t value Calculat ed	F A±	F	measruin g unit	Variables
-14.366	moral	0.000	-12.051	1.346	-5.129	sec	Endurance

							speed
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Degree of freedom (10-1=9)

*Significant at the error level (0.05) if the error level is smaller than (0.05)

Presenting, analyzing and discussing the results of the difference of arithmetic means test (t-test) between the results of the experimental and control groups in the physical variables in the post-test results.

Table (6) shows the arithmetic means, the standard deviations, the calculated (t) value, the level of error, and the significance of the differences between the two research groups in the physical variables under investigation in the post-test results.

indication	Error level	Calculated t value	Control group		Experimental group		measruing unit	Variables
			A	s	A	s		
moral	0.000	-7.953	0.881	40.832	1.188	37.113	sec	Endurance speed

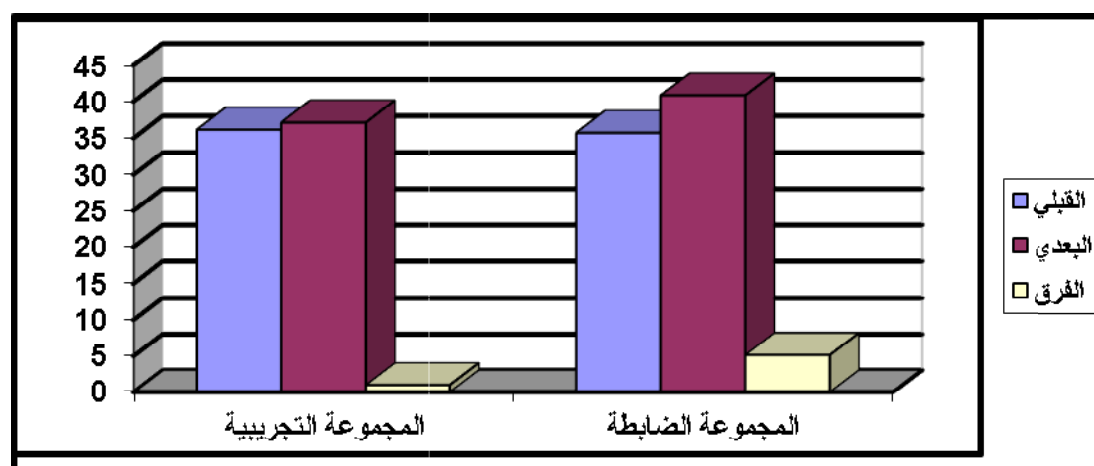


Figure (1) shows the arithmetic means and the difference of the arithmetic means between the results of the pre- and post-tests for the experimental and control groups in the speed endurance variable.

Discussion of the results of speed endurance tests: In light of the previous presentation of the results reached by the researcher, in light of the objectives and hypotheses of the research, and guided by the results of previous studies and what was reported in scientific references, these results were discussed as follows:

Endurance speed

We see from Table (4) that there is a difference in the calculated (T) value and (percentage of change) for each of the research tests (pre-post) in favor of the pre-test for the speed endurance test. In a test for the experimental group, the calculated (T) value reached (1.958). And (percentage of change) (2.724), while the value of (T) in the control group was (12.051) and (percentage of change) (14.366) in Table No. (5). It is clear from the results above that there are statistically significant differences between the pre- and post-measurements of the experimental

group. In favor of the pre-test measurement (speed endurance), which indicates that the proposed curriculum for various exercises contributed to maintaining a relative level of speed endurance, which included various training and activities that were characterized by an element of suspense and fun, such as small competitive games, swimming training, water games, football, and basketball. And volleyball, ground tennis, the gym, bicycles, tennis, football, (for example) in the skills of ground tennis, and competitive games in the swimming event. All the various exercises led to maintaining speed endurance, and the exercises developed by the researcher were effective in maintaining physical abilities in control. The research, which the researcher took into account when developing the scientific foundations, which had a significant impact on maintaining the level of speed endurance among the experimental group, and this means that a weakness appeared in the results for this special physical ability of the group (control or experimental), because it requires a long period of time as Speed endurance is considered one of the most difficult special physical abilities to develop because it is linked to many influencing factors. The process of growth and development of speed endurance is slower than other physical abilities such as strength and endurance, in addition to the fact that speed endurance depends to a large extent on the genetic traits and characteristics that characterize the athlete. He agrees. He also agrees with "Rayhan" that the decline that occurs in the components of physical fitness as a result of interruption from training is due to not maintaining the level of adaptation that the player has reached during the period of regular training. (Rayhan, 2003). Muhammad Reda also mentions that the athlete's ability in the variable (speed endurance) is also affected by the lack of training or its cessation, as these athletes lose about (7%) of their endurance in the first (7) to (12) days. daily after they stop training (Al-Madamkha M., 2017, p. 454)

Discussion of the results of the post-test for speed endurance results

It is clear from Table (6) that there are statistically significant differences in the results of the (post) measurement test for the two research groups (control and experimental) in speed endurance, and that these differences were in favour of the pre-measurement, as the value of (t) calculated for the two research groups ranged (7.953), respectively, which It indicates that the proposed curriculum of various exercises led to maintaining some of the physical level that the players had during the Premier League competitions compared to the control group, and this is consistent with what Ali Fahmi Al-Beik stated (2009) that the transitional period aims to restore recovery to the player's vital organs. From the effect of the intense physical and nervous effort of the training loads for the preparation and competition periods, improving the motor qualities and reducing the physical level of the player, provided that this is done with a relative preservation of the training condition to ensure the player's optimal preparation for the following season. (Al-Baik, 2009, p. 123) This is consistent with what "Muhammad" mentioned. Bariqa, Ihab Al-Badawi (2004) stated that the proposed curriculum in the transitional period of the sports season helps players stabilize and maintain relative strength and aerobic endurance by practicing some activities such as running, jumping rope, weight training, and variable resistance (Bariqa and Al-Badawi, 2004, p. 9) and confirms this. "Khaled Al-SayyidSurour, Muhammad Ibrahim Gad Al-Haq said that the use of training during the transitional period, including the various activities it

contains that are characterized by the element of suspense and fun, will lead to reducing the loss of physical fitness during the transitional period. (Sorour and Jad Al-Haq, 2008, p. 30)The researcher believes that the various exercises contributed to maintaining the relative level of speed endurance. These results are consistent with (Rayhan, 2003), (Al-Sayed, 2005), (Shaddad, 2006), (Mahran, 2007), (Sarour and Jad Al-Haqq, 2008)Presenting, analyzing and discussing the results of the fatigue index for the experimental and control groups. Displaying, analyzing and discussing the results of the difference of arithmetic means, standard deviations, t-test, and percentage of change between the results of the pre- and post-tests for the fatigue index and lactic acid concentration for the experimental and control groups.

Table (7) shows the arithmetic means and standard deviations for the fatigue index and lactic acid concentration in the pre- and post-tests for the experimental and control research groups.

Posttest				Pretest				measruing unit	Variables
Experimental group		Control group		Experimental group		Control group			
p ±	s	p ±	s	p ±	s	p ±	s		
7.630	58.546	3.799	63.115	6.794	57.659	5.253	57.641	%	Fatigue index
0.290	1.920	0.401	1.810	0.370	2.090	0.945	2.165	mmol	Lactic acid concentration before exertion
1.515	14.510	1.292	15.335	1.939	13.310	1.870	13.700	mmol	Lactic acid concentration after exercise

Table (8) shows the difference of the arithmetic means, its standard deviation, the calculated (t) value, the significance of the differences, and the percentage of change between the results of the pre- and post-tests in the fatigue index and lactic acid concentration for the experimental group.

change %	Meani ng of differe nces	Error level	t value Calculat ed	f p ±	F	measrui ng unit	Variables
-1.538	rando m	0.749	-0.330	8.492	-0.887	%	Fatigue index
8.134	rando m	0.194	1.403	0.383	0.170	mmol	Lactic acid concentration before exertion
5.912	rando m	0.324	1.043	2.455	0.810	mmol	Lactic acid concentration after exercise

Degree of freedom (10-1=9)

*Significant at the error level (0.05) if the error level is smaller than (0.05)

Table (9) shows the difference of the arithmetic means, its standard deviation, the calculated (t) value, the significance of the differences, and the percentage of change between the results of the pre- and post-tests in the fatigue index and lactic acid concentration for the control group.

change %	Meaning of differences	Error level	t value Calculated	f p ±	F	measuring unit	Variables
-9.497	moral	0.001	-5.058	3.423	-5.474	%	Fatigue index
16.397	random	0.183	1.441	0.779	0.355	mmol	Lactic acid concentration before exertion
15.214	moral	0.005	3.632	1.763	2.025	mmol	Lactic acid concentration after exercise

Degree of freedom (10-1=9)

*Significant at the error level (0.05) if the error level is smaller than (0.05)

Table (10) shows the arithmetic means, the standard deviations, the calculated (t) value, the level of error, and the significance of the differences between the two research groups in the fatigue index and the lactic acid concentration under investigation in the post-test results.

indication	Line level A	Calculated t value	Control group		Experimental group		measuring unit	Variables
			A	s	A	s		
moral	0.107	-1.695	3.799	63.115	7.630	58.546	%	Fatigue index
moral	0.491	0.703	0.401	1.810	0.290	1.920	mmol	Lactic acid concentration before exertion
random	0.653	0.458	1.293	15.335	1.515	14.510	mmol	Lactic acid concentration after exercise

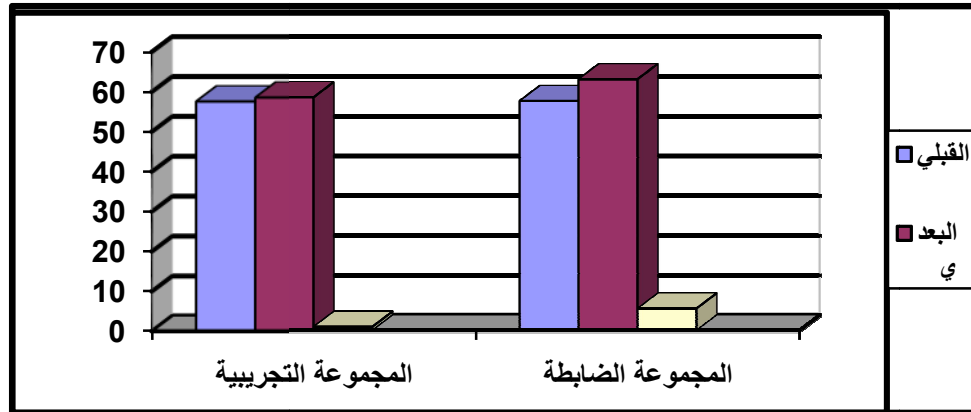


Figure (2) shows the arithmetic means and the difference of the arithmetic means between the results of the pre- and post-tests for the experimental and control groups on the fatigue index variable.

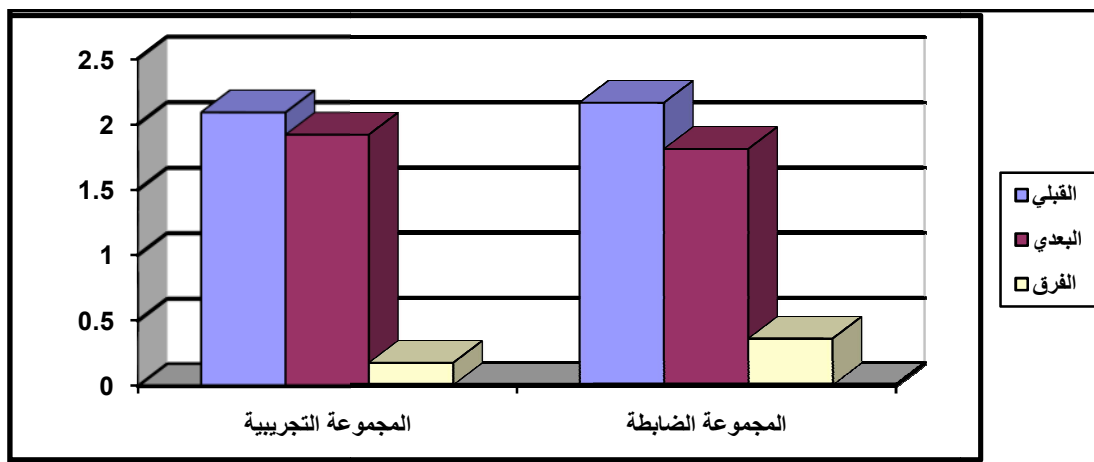


Figure (3) shows the arithmetic means and the difference of the arithmetic means between the results of the pre- and post-tests for the experimental and control groups regarding the variable lactic acid concentration before exertion.

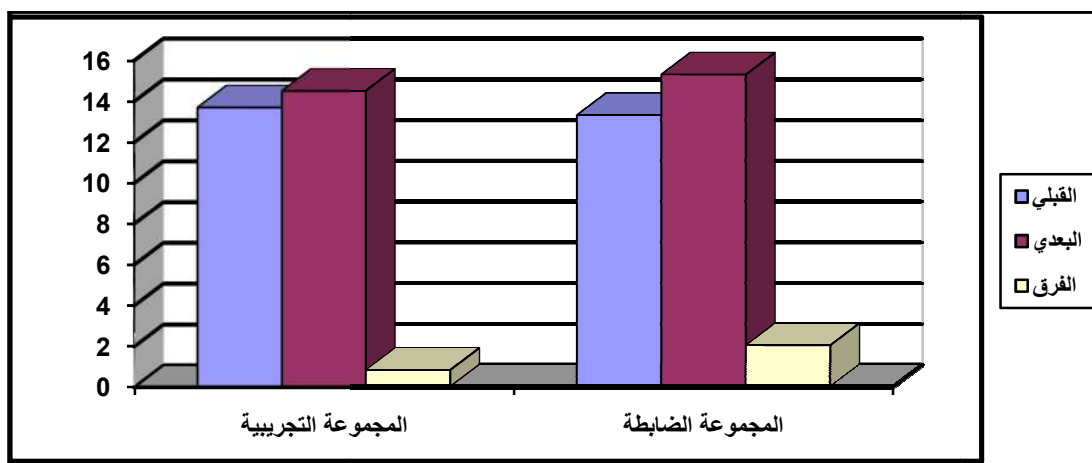


Figure (4) shows the arithmetic means and the difference of the arithmetic means between the results of the pre- and post-tests for the experimental and control groups regarding the variable lactic acid concentration after exertion.

Discussion of the results of the fatigue index

It is clear from Table No. (10) that there are statistically significant differences in the results of the (post) measurement test for the two research groups in the fatigue index under study in the (fatigue index) test, as the calculated (t) value for the two research groups ranged (1.695), respectively, which indicates The cessation of training during the transitional period led to a noticeable decrease in the level of the fatigue index. (This is what Owais Al-Jabali pointed out) The player who performs an activity during the transitional period will find an improvement in the physiological characteristics to begin the stage of good preparation, either moving on or changing from a hard load. Complete rest negatively affects the organization of vital processes, and complete rest could be a reason for the player being unable to start a new training session at a high level.

(Al-Jabali, 2001, p. 263). The researcher attributes the reason for this decline to the players performing during this transitional period (trainings that are contrary to sporting activity, and most of them are not specialized in the type of game or activity that the player is practicing, and this is what Zuhair Al-Khashab confirms, which is not It can be dispensed with in the previous stage, and in the training stage, general exercises are conducted in a large and permanent manner. The actual rest stage consists of the transitional period, and this must be performed exercises that are not of a special nature) (Al-Khashab and Asmar, 2000, p. 91). The researcher believes that the transitional period is very important. In the career of every athlete, it must be adhered to in a scientific and thoughtful manner, because any gap or deficiency in this transitional period will negatively affect the periods that follow this period, such as the preparation period and the competition period.

Lactic acid concentration before exertion

We see from the table that there is a difference in the value of (T) and (percentage of change) for each of the research tests (pre-post) in favor of the pre-test for the physical tests. In the test (lactic acid concentration before exertion) for the experimental group, it reached the value of (T).

(1.403) and (percentage of change) (8.134), while the value of (T) in the control group was (1.441) and (percentage of change) (16.397). It is clear from the results above that there are statistically significant differences between the pre- and post-measurements of the control and experimental study groups in favor of The pre-test measurement (lactic acid concentration before exertion), which indicates that the proposed curriculum for various exercises contributed to maintaining a relative level of speed endurance, which included various exercises and activities that were characterized by an element of suspense and fun, such as small competitive games, swimming exercises, water games, and football. Basketball, volleyball, tennis, gym, cycling, tennis, and football. All the various exercises led to a fatigue index, and the exercises developed by the researcher were effective in maintaining physical abilities, which was reflected in biochemical indicators, including the level of lactic acid concentration, especially speed endurance. The researcher took into account when developing the scientific foundations, which had a significant impact on the stability of the level of the fatigue index among the experimental group. This is consistent with what was stated in the study of (JabbarRahima): The increase in lactic acid depends on the type of effort that the athlete performs. When the physical effort is of moderate intensity and in the absence of oxygen use, lactic acid does not accumulate in the muscles and blood except a little. However, if the physical effort is of high intensity and is performed in Under conditions of lack of oxygen, lactic acid accumulates in the muscles and blood. (Al-Kaabi, 2007, p. 252). The researcher believes that the transitional period, after a passive rest, should be a time to resume training, in particular with individual training, in order to maintain the level of the player's physical capabilities to the average level, and it is necessary to deal with the loads that will occur during the period. Preparation Taking into account that the preparation period generates a large initial impact load on players due to sudden increases in both volume and intensity of training, changes in training load occur suddenly and can be dangerous for players, especially in cases of low physical condition as in In case of not exercising during the transitional period.

Lactic acid concentration after exercise

We see from Table (10) that there is a difference in the value of (T) and (percentage of change) for each of the research tests (pre-post) in favor of the pre-test for the physical tests. In the test (lactic acid concentration after exertion) for the experimental group, the value of (T) was reached.) (1.043) and (percentage of change) (5.912), while the value of (T) in the control group was (2.883) and (percentage of change) (12.622). It is clear from the results above that there are statistically significant differences between the pre- and post-measurements of the control and experimental study groups in favor of The pre-test measurement (lactic acid concentration after exertion), which indicates that the proposed curriculum for physical training was directly reflected in biochemical indicators, including lactic acid, and that it included various training and activities that were characterized by an element of suspense and fun, such as small competitive games, swimming training, water games, and soccer. Football, basketball, volleyball, tennis, gym, cycling, tennis, and soccer. All the various exercises led to a fatigue index, and the exercises developed by the researcher were effective in maintaining the physical abilities under

research. The researcher took into account when developing the scientific foundations, which had an impact. What is significant about the stability of the level of lactic acid in the experimental group, and this is consistent with what (JabbarRahima) mentioned, that it is possible for the lactic acid that remains in the muscles to be oxidized to pyruvic acid, but after exercise stops and oxygen is available in sufficient quantities during the recovery period. In the transitional period (Al-Kaabi, 2007, p. 229), Ali Fahmi Al-Baik et al. (2009) point out that the transitional period aims to restore the recovery of the player's vital systems from the impact of the intense physical and nervous effort of the training loads for the preparation and competition periods, improving the physical and motor qualities, and reducing the player's physical level over time. This should be done while maintaining a relative level of training to ensure the player's optimal preparation for the next season. (Al-Baik, 2009, p. 123) This is confirmed by "Khaled Al-SayyedSorour, Muhammad Ibrahim Jad Al-Haq that using (various training) with the various activities it contains that are characterized by an element of suspense and fun will lead to To reduce loss of physical fitness during the transitional period. (Sorour and Jad Al-Haq, 2008, p. 30) This indicates that the proposed curriculum of various exercises has led to the relative preservation of the level at which physical capabilities were, which contributes significantly to the effect of maintaining the level of concentration of biochemical indicators for the experimental research sample under investigation and not losing a large amount of the physical level.

Discussion of the results of the post-test fatigue index

It is clear from Table (10) that there are statistically significant differences in the results of the (post) measurement test for the two research groups in the functional variables under investigation in the test (fatigue index), where the value of (t) calculated for the two research groups ranged (1.695), respectively, which indicates that Cessation of training during the transitional period led to a noticeable decrease in the level of functional variables.

(This is what Owais Al-Jabali pointed out, 2001, p. 263) The athlete who performs an activity during the transitional period will find an improvement in the physiological characteristics to begin a good preparation phase. However, the transition or change from heavy load to complete rest negatively affects the organization of vital processes, and complete rest It can be a reason for the player being unable to start a new training session at a high level. (Al-Jabali, 2001, p. 263). The researcher attributes the reason for this decline to the players performing during this transitional period (trainings that are contrary to sporting activity, and most of them are not specialized in the type of game or activity that the player is practicing, and this is what Zuhair Al-Khashab confirms, which is not It can be dispensed with in the previous stage, and in the training stage, general exercises are conducted in a large and permanent manner. The actual rest stage consists of the transitional period, and this must be performed exercises that are not of a special nature (Al-Khashab and Asmar, 2000, p. 91). The researcher believes that the transitional period is very important. In the career of every athlete, it must be adhered to in a scientific and thoughtful manner, because any gap or deficiency in this transitional period will negatively affect the periods that follow this period, such as the preparation period and the competition period.

Discussion of the results of the post-test lactic acid concentration:

It is clear from Table (10) that there are non-statistically significant differences in the results of the (post) measurement test for the two research groups in the biochemical variables under investigation in the tests (lactic acid concentration before the effort and the lactic acid concentration after the effort), where the value of (t) calculated for the two research groups ranged (0.703 and (0.458), respectively, which indicates that interruption of training during the transitional period led to a noticeable decrease in the level of biochemical variables. As Dietrich Hara points out, the transitional period begins after the end of the competition period and ends with the start of the preparation period for the new training season. It aims This period aims to remove both physical and functional stress, get rid of the products of excess load during the competition period, and prepare the player's body to absorb the following training doses, and the period of active rest after the competition season, in which recovery is restored as a prelude to the next period, through participation in activities different from the specialized activity. Which helps maintain the player's physical and functional level. (Dietrich H., 2001, p. 83) The researcher believes that performing exercises and physical activities is different from the nature of those exercises used during training. Performing such exercises and physical activities will enhance positive rest, especially rest and relaxation of the body's muscles and psychological comfort, and maintaining the level of physical activities commensurate with the level of physical capabilities, and that maintaining Physical ability levels can reduce the peak loads that naturally occur during the preparation period and thus reduce the possibility of injury.

Conclusions

In light of the objectives and nature of this study and within the limits of the research sample and the methodology used, and based on the data collected by the researcher and the results of the statistical analysis, the researcher reached the following conclusions:

1. The various exercises contributed to relatively maintaining the level of (speed endurance) during the transitional period for the experimental group.
2. The various exercises contributed to relatively maintaining the level of the fatigue index during the transitional period for the experimental group.
3. Abstention from training for the control group during the transitional period contributed significantly to the change in the level of (speed endurance, fatigue index, and lactic acid) during the transitional period for the control group.
4. The use of exercises or other than exercise has a role in maintaining speed endurance, fatigue index, and lactic acid, in addition to its role in physical and functional recovery.

Recommendations

Within the limits of the procedures included in the study and the results it yielded, the researcher recommends the following:

1. Applying the proposed training curriculum using (various training) to the youth and junior category
2. In football to maintain abilities (speed endurance, fatigue index and lactic acid)

3. The necessity of developing a training curriculum during the transitional period to maintain the relative physical and functional level reached by the players.
4. It is necessary not to stop training during the transitional period, which has negative effects on football players.
5. Those in charge of the operation must receive adequate training. They trained to know the decline levels of their players in order to provide training curricula that are appropriate to the level of decline experienced by the players.
6. The intensity levels used during the transitional period training should be moderate intensity in order to contribute to the recovery of athletes and contribute to maintaining the players' physical and functional level in a relative manner.

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