

The effect of dynamic lactic exercises on the concentration of lactic acid and the development of the skill of receiving from movement and then passing for juniors football players

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Abstract

The purpose of this paper is to preparing dynamic lactic exercises and knowing the extent of their impact on the concentration of lactic acid in the blood after stress and the development of the complex offensive skill of receiving from movement and then passing for juniors football players, during which the researchers used the experimental approach (and by designing two equal groups with pre-and post-tests) for its suitability to the nature of the problem and access to achieving goals search. After the research community identified the emerging football players in the Specialized School for the Care of Sports Talent in Babylon for the sports season (2020-2021), whose ages ranged from (14-16) years, and they numbered (35) players, and after excluding the goalkeeper, a sample of them was selected consisting of (24) players using the simple random method, and dividing them for the purposes of the research experiment randomly by (12) players for each of the experimental (dynamic lactic) and control groups. After completing the process of testing and measuring the research variables for the pre and post-tests, and after applying the research experiment, the results were reached as follows: The exercises of the experimental group (dynamic lactic) were more effective in improving the concentration of lactic acid and the skill of receiving from movement and then passing for juniors football players compared to the exercises of (the control group). Then the researchers recommended: Football coaches should use appropriate exercises that effectively develop the players' special abilities and thus improve the level of skill performance and Paying attention to and focusing on measuring physiological variables such as pulse, level of lactic acid concentration and others during the performance of exercises for all age groups for the purpose of legalizing exercises and knowing the extent of their impact on players.

Keywords: dynamic lactic exercises, the skill of receiving from movement and then passing, juniors football players.

Introduction:

Diversity using modern training methods and means based on scientific foundations and their reliance on studies and research in sports sciences is the best way to improve and advance the level of physical performance, skills and functional indicators of the player, as well as the difference of these methods and the extent of their impact on the most important physiological variables makes players need physical and skill capabilities that are appropriate With their physical and functional capabilities to achieve the goal of training according to

specialized effectiveness, which in turn leads to appropriate adaptations to develop the level of physical and skill performance football is one of the most popular games, which occupies first place in most countries.

Football players are characterized by high levels of physical abilities and integrated skill performance in building attacks of various kinds as well as defending the goal and all these skills, especially the complex offensive skills, which require players special physical abilities and endurance performance that serve the position of competitive play while fulfilling the requirements and time of matches and increasing the ability of the players The footballer had to manoeuvre, change the place of play and create small spaces while building attacks, which was reflected in the development of playing methods, plans and laws, which contributed to giving an aesthetic performance to the players and increasing the excitement of the fans. The researchers believe that the football game depends on its skills in the anaerobic and aerobic energy systems in different proportions, and the opinions of many coaches and specialists in the sports field varied according to the amount of these percentages, according to the performance of the sports activity for football players and according to the playing centers. As well as increasing the duration of work within the anaerobic energy system, which forces players to bear amounts of lactic acid in the blood and muscles when the player performs complex offensive skills such as the skill of receiving from movement and then passing affects one way or another the work of other vital organizations throughout the match period. Towards training energy, systems in addition to measuring physiological variables during exercises to identify the effect of these exercises in order to raise the body's efficiency in sports performance, as well as choosing other training methods that are far from the goal to be achieved. From this, we show the importance of research using dynamic lactic exercises and their impact on the concentration of lactic acid in the blood after effort and the skill of receiving from movement and then passing for juniors football players, while maintaining the player's performance of those skills for the longest possible period during the match time and his resistance to fatigue.

Research objective:

- Preparing dynamic lactic exercises for juniors football players and knowing the effect of the exercises by the concentration of lactic acid and the skill of receiving from the movement and then passing for juniors football players.
- Identifying the differences between the dynamic lactic exercises and the exercises prepared by the trainer by the percentage of lactic acid concentration and the skill of receiving from movement and then passing for juniors football players between the experimental and control groups.

Research methodology and field procedures:

Research Methodology:

The researchers chose the experimental method for its suitability to solve the research problem.

Community and sample research:

The selection of the sample is one of the important steps and stages of the research, which is considered “the part that represents the community of origin or the model on which the researcher conducts the entirety of his work.” (Mahjoub. 2001) Therefore, the research community identified juniors football players aged (14-16) years in the Specialized School for the Care of Sports Talent in Babylon for the sports season (2020-2021), and their number is (35) players. The goalkeeper was excluded, after which a sample of (24) players was selected using a simple random method, and they were randomly distributed into two groups (experimental and control) with (12) players for each group.

Table (1) shows the experimental design adopted in the research.

Groups	Pre-test	Experimental processing	Post-test
Experimental	- concentration of lactic acid in the blood after stress. - skill of receiving from movement and then passing	Dynamic Lactic Training	- concentration of lactic acid in the blood after stress. - skill of receiving from movement and then passing
Control	- concentration of lactic acid in the blood after stress. - skill of receiving from movement and then passing	Coach training	- concentration of lactic acid in the blood after stress. - skill of receiving from movement and then passing

Tools, means and devices used in the research:-**Research Tools:-**

- Questionnaire.
- Note.
- the interview.
- Test and measurement.

The means and devices used in the research:-

- 20 Adidas soccer balls.
- Fox referee whistle (2).
- Electronic stopwatch made in China, number (2).

- Stationery (papers and pens).
- Metric tape measure (40 m).
- Plastic ladder for training, length (10 m), number (4)
- Wooden Swedish seat, length (2 m), number (4).
- Small targets (3), measuring (1x1) m.
- Two (2) handball court goals, measuring (3 x 2) m.
- Plastic poles with a height of (20 cm, 30 cm, 40 cm). Number (30).
- Barriers with a height of (50) cm, number (10).
- Plastic cones (25).
- Burke.
- Colored circles with a diameter of (50) cm, number (20).
- medical Cotten.
- Alcohol medical solution to sterilize the skin.
- A Chinese-made (HP) computer.
- Lactate Scout+ device for measuring lactic acid in the blood. It includes the device, lactic stylus and needles, number (1) of German origin.
- Kitt to measure the concentration of lactic acid in the blood of German origin.
- An electronic device for measuring height and weight, made in China, number (1).
- One (1) Chinese-made Canon photocopier.

Description of the tests and measurements used:

Measuring the level of lactic acid concentration in the blood after stress:

The level of lactic acid concentration in the blood was measured using the Lactate Scout device at rest time after giving the endurance test effort in football and at the Hilla Sports Stadium in the Hilla Forum. After the laboratory completed the performance test for endurance performance in football and after five minutes of Implementation of the test The laboratory is subject to measurement where the laboratory is seated and the thumb of the hand is disinfected with sterile materials so that the place where blood is drawn from it is clean and free from sweat or any other materials sticking to the skin because this affects the test result, after which the thumb is dried well and blood samples are taken and analyzed with a device (+ Lactate Scout), which consists of an input hole for the sensor and a screen that shows the device's settings and how to display the device's readiness for testing and display the test result. A laboratory for

taking blood samples, after which it is damaged and replaced with a new needle to ensure that the other laboratory is not exposed to any infection or bacterial infection, the tip of the finger is placed with a drop of blood near the tip of the sensor the rat (ket) that was inserted into the device so that the blood can be absorbed, and after (10) seconds, an audible signal sounds, and the test result appears in the mmol/L measurement unit of the level of lactic acid concentration in the blood. To be stored automatically with the files of the date and time of the test. And tabbed them within special forms prepared by the researcher to record the private data for each laboratory.

Test the skill of receiving from movement and then passing (Abu Abdo. 2010):

- The purpose of the test: measuring the skill of receiving from movement and then passing.
- Tools used: soccer balls, stopwatch, Swedish stool, tape measure, cones, mini goals.
- Performance description: The player stands behind the starting line at a distance of (3 m), and when he hears the whistle, he runs quickly to receive the ball passed to him from the couch inside the drawn circle with a radius of (1 m), then passes it diagonally to the Swedish seat and sets out to control it after its rebound from the Swedish seat in the area. Then he passes it with the preferred foot and any part of it on the goal that is 10m away from the place of passing.
- The player performs two complete attempts on the three goals.
- Recording method: The time for each attempt to one goal is calculated from the moment the ball is received until the ball crosses the goal line.
- The accuracy of passing on each goal (goal) is recorded in degrees.
- The final score is calculated for the best attempt from both in terms of accuracy and time.
- Note: One attempt is to perform the test on the three goals and take the average.
- Recording: Accuracy scores are recorded as follows:
 - When the ball enters the goal, the laboratory will score (3) degrees.
 - When the ball hits the crossbar or the post (2) two degrees.
 - When the ball hits the funnel, it will score (1).
 - When the ball goes out of this space, 0 score is scored.

Exploratory experiment (the scientific analysis of the tests)

The reconnaissance experiment was conducted on Friday 18/6/2021. And on a sample of (10) players, they are part of the research sample, and they were chosen randomly. This reconnaissance experiment was conducted, for the purposes and objectives, as follows:

The main objective of the exploratory experiment was to identify the difficulties facing the researchers, as well as other objectives, including:

- Ensure the efficiency of devices and tools.
- Find out how long each test takes.
- Adequacy of the assistant work team.
- Determining the maximum time and number of repetitions for each of the exercises prepared by the researchers.
- Knowing the validity of the tests for the research sample (honesty, reliability, objectivity).
- Knowing the difficulties that the researchers face in order to avoid them in the future.
- Knowing the readiness of the research sample to perform the tests.
- The results of the experiment resulted in:
 - All tests and equipment used in the experiment are working.
 - Many of the difficulties that occurred during the work of the main experiment were overcome, including:
 - The number of members of the auxiliary team is sufficient for all procedures.
 - All the candidate tests are honest and have high formative foundations.

Pretest:

After the researchers confirmed the safety and validity of the tests concerned with measuring the concentration of lactic acid in the blood after exertion and testing the skill of receiving from movement and then passing for juniors football players, the researchers implemented and applied the tests as a pre-test at exactly 4 pm on Sunday on 27/6 /2021, and at the Al-Hilla Sports Stadium in the Al-Hilla Forum. The tests were applied to the sample of (24) juniors players, ranging in age from (14-16) years.

After all this, the two researchers obtained the results of the pretest in both the concentration of lactic acid in the blood after stress and the skill of receiving from movement and then passing for juniors football players.

Main research experience:

The researchers used the dynamic lactic method for the members of the experimental group, while the control group works on applying its exercises according to the trainer's approach within the training unit. The effort, knowing that the duration of the exercises was included in the main section of the training unit from 3/7/2021 until 25/8/2021, took into account the components of the training load.

The details of the dynamic lactic exercises program are as follows: -

- Preparing special exercises for the dynamic lactic method and implementing it on the experimental group.

- The intensity of the training load with (dynamic lactic) started from (75% - 95%) and by using undulation (2:1) during the daily and weekly training units.
- The alternation in the dynamic pace of the skill in lactic acid between the lactic acid system and the aerobic system through active rest (Roll-On) was severe (60% - 70%).
- The duration of the implementation of the training program for dynamic lactic exercises is (8) weeks, with three training units per week, and the total number of training units for all the training programs was (24) training units.
- Training days were (Saturday, Monday, Wednesday)
- The time of the training unit is (15-23) minutes for the main section only.

Post-test:

The researchers conducted the post-tests at the Al-Hilla Sports Club stadium in the Al-Hilla Forum on Sunday (5/9/2021) at exactly 4:00 pm for the members of the research sample after completing the proposed exercises, taking into account the conditions and instructions for implementing these tests under the circumstances and capabilities. Same available and used in (pre) tests.

Statistical methods: The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Presentation, analysis and discussion of results:

Presentation the results of the pre- and post-tests of the experimental group.

Table (2) shows the arithmetic means, standard deviations, the calculated (t) value and the level of statistical significance for the pre and post-tests of the variables studied for the experimental group.

Variables	Measuring unit	Pre-test		Post-test		T value	Level sig	Type sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Concentration of lactic acid in the blood after stress	milli mall / Liter	12.84	0.78	15.49	1.73	4.66	0.001	sig
Skill receiving of from	Time sec	6.05	0.10	4.99	0.17	5.42	0	sig

movement and then passing	Accuracy	Degree	1.80	0.41	2.44	0.25	5.06	0	sig
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Presentation of the results of the pre- and post-tests of the control group:

Table (3) shows the arithmetic means, standard deviations, the calculated (t) value and the level of statistical significance for the pre and post-tests of the variables studied for the control group.

Variables	Measuring unit	Pre-test		Post-test		T value	Level sig	Type sig	
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation				
Concentration of lactic acid in the blood after stress	milli mall / Liter	12.95	1.01	13.96	1.12	2.23	0.04	sig	
Skill of receiving from movement and then passing	Time	sec	6.07	0.17	5.53	0.37	4.63	0.00	sig
	Accuracy	Degree	1.77	0.47	2.19	0.29	2.70	0.02	sig

Presentation of the results of the post-tests for the two groups (experimental and control)

Table (4) shows the arithmetic means, standard deviations, the calculated (t) value and the level of statistical significance for the post-tests of the studied variables for the two research groups (experimental and control).

Variables	Measuring unit	Experimental		Control		T value	Level sig	Type sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Concentration of lactic acid in the blood after stress	milli mall / Liter	15.49	1.73	13.96	1.12	2.55	0.01	sig

Skill of receiving from movement and then passing	Time	sec	4.99	0.71	5.53	0.37	2.34	0.02	sig
	Accuracy	Degree	2.44	0.25	2.19	0.29	3.18	0.04	sig

Discuss the results:

Discussing the results of tests of the level of lactic acid concentration in the blood after exertion and testing the skill of receiving from movement and then passing for the experimental and control group:

Tables (2), (3) and (4) show the calculated (t) values and the level of statistical significance for the results of testing the level of lactic acid concentration in the blood after exertion for the juniors football players of the experimental group that used the dynamic lactic exercises and the control group that used the prepared exercises by the coach. The experimental group also showed a development in the post-tests, while the control group had a development in the research variables, but as for the differences between the experimental and control groups, it was in favor of the experimental group in both variables (the level of lactic acid concentration in the blood after effort and the skill of receiving from movement and then passing), which I used dynamic lactic training.

The researchers attribute the development that occurred to the members of the experimental group as a result of the effect of using the dynamic lactic exercises prepared by the researchers, in which the work is alternately, i.e. reliance on the dynamics of work during the performance of the exercises in terms of high and low training intensity and in line with the ability of juniors football players from the physical and skill side To reach the degree that enables them to achieve the requirements of playing that are characterized by high speed, accuracy, continuous change, moving from one place to another and increasing performance, in addition to creating small spaces that enable them to perform several basic skills and combine them with each other to come up with a complex skill performance to overcome the opponent team in terms of possession The ball and the continuation of the performance and overcoming the fatigue resulting from the accumulation of lactic acid in the blood through the controlled intensity set by the researchers, which is characterized by giving exercises of high intensity and punished by exercises of lower intensity (Active rest) Thus, the player will create an excess of lactic acid during the semi-maximum performance and then eliminate the lactic accumulated during the less intense performance. And (Raysan Khouribet and Abu Al-Ela Abdel-Fattah) indicate, "When the rate of lactic accumulation in the muscle increases and acidity occurs, the individual athlete feels pain, while the athlete trained to endure this pain can continue to perform by improving the capacity of vital organizations and increasing pain tolerance, and this is reflected in maintaining (PH) against acidity." (Khouribet and Abdel-Fattah. 2016).

The tables above also show the values of the arithmetic mean, standard deviation, the calculated (t) value, and the level of statistical significance for the composite offensive skill test, which is (the skill of receiving from movement and then passing), where some moral differences appear between the pre and post-tests in favor of the experimental and control groups, but it shows us the superiority of the group. The experimental group in the variable of receiving skill from the movement and then passing over the control group in terms of time and accuracy of performance.

The researchers attribute that this development is the result of the exercises prepared by the researchers, which included exercises that simulate the real reality of the match and its complex performance of the basic skills, because the skill of receiving from movement and then passing is one of the complex skills that need accuracy and speed at the same time and this It will only come through the application of exercises that include basic skills such as receiving, passing and scoring, and then merging them together, This is what was indicated “the modern trend in the education and training of skill performances in football emphasizes the need to integrate these skill performances to form complex skill performances that are trained as early as possible for juniors players.” By (Kishk and Al-Busati. 2000)

In addition, the researchers attribute the development of the complex offensive skill as a result of the use of dynamic lactic exercises, which mainly affected the main part of the training unit that the experimental research sample members were exposed to during (24) training units, in which work was at almost maximum intensity and then alternated with intensity to least during Performing a compound skill that gives players the ability to tolerate constant changes and use tactics against competitors and the different conditions imposed by the competition from the accumulation of lactic acid and thus will help players to confront the tactics of competitors and what the match imposes. Where (Abu Abdo) indicates that there are some complex skills that depend mainly on the technical style, and there are some complex skills or skill performances that depend on the players’ ability to respond to external stimuli related to competitors and other factors in actual competition situations and this is what we observe in a football game Football, where we notice some players excel in skill performance during training, but they fail to show the same superior level during the match. (Abu Abdo. 2010)

This is due to several reasons, the most important of which is the inability of the players to continue with the skill and physical performance, and thus will affect the accuracy and speed of performance for the longest possible period, especially in the last third of the match time because they do not resist fatigue resulting from the accumulation of lactic acid.

Conclusions and Recommendations:

Conclusions:

Through the findings of the researchers, they concluded the following:

- The dynamic lactic exercises affected the level of lactic acid concentration in the blood, and this effect was positively reflected in the skill of receiving from the movement and then passing in the positive direction as well.

- The results showed a marked superiority between the experimental and control groups and in favor of the experimental group in the research variables (the level of lactic acid concentration in the blood, the skill of receiving from movement and then passing) and in favor of the post-test.

Recommendations:

Under the conclusions reached by the researchers, they recommend the following:

- Using the dynamic lactic method and emphasizing the need for the player to reach the stage of accumulation of lactic acid to benefit from it in releasing the necessary energy.
- Conducting laboratory tests and using modern equipment that gives a real indication of the physical and functional condition of the players for the purpose of rationing the training loads.
- Attention to the development of complex skills at an early age for juniors footballers, with the need to choose complex skill tests when selecting players.

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