



ISSN Print: 2664-7559
ISSN Online: 2664-7567
IJSHPE 2024; 6(1): 247-251
www.physicaleducationjournal.in
Received: 08-02-2024
Accepted: 14-03-2024

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International Journal of Sports, Health and Physical Education

Effect of explosive strength exercises on the dead sperm index of Al-Salman Football Club

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DOI: <https://doi.org/10.33545/26647559.2024.v6.i1d.130>

Abstract

The first chapter included the introduction and the importance of the research, its problem and objectives, its assumptions, and its fields, and the importance of the research and the importance of the research lies in the preparation of exercises to develop explosive strength and its impact on dead sperm index of the Al-Salman Football Club. The problem of the research embodied in that some physiological and functional variables may be affected in physical effort and these variables semen including dead sperm. As for the hypotheses of the research, there were statistically significant differences between the pre- and post-tests in the indicators of semen (Dead sperm) for the control and experimental groups and in favor of the experimental group of players of Al-Salman Football Club. The research community was determined by the players of Al-Salman Football Club for the year (2023/2024), which numbered (24), as this community was divided into two equivalent groups (a control group, and an experimental group), by (12) players for each group, and later the exercises were carried out according to the proposed training method for a period of (10) weeks, by three training sessions per week. The researcher used the experimental program, and after the application of the program, the results of the tests were collected, processed statistically, presented and discussed in a scientific manner in order to achieve the goal of the research. From that, the researchers concluded the need to use the proposed exercises for people with asthenia sperm because of its positive effect on semen indicators (Dead sperm). The researchers recommended the need to use the suggested exercises for people with asthenia sperm because of its positive effect on the indicators of semen (Dead sperm).

Keywords: Explosive strength, exercises, sperm, football

1. Introduction

The positive changes in the functional and physiological variables as a result of physical activity based on scientific foundations are one of the important things in the health of the individual and the sports team, especially that sports training sheds an external load, which leads to internal changes, which in turn improves the physiological and biochemical state of the body, as the game of football, like other games, has witnessed a continuous development in the level of performance of its players and the results of its matches, Which adds training requirements that must be taken into account in the design of training curricula. The importance of the research lies in the preparation of exercises for explosive strength and its impact on the semen indicators of the Al-Salman Football Club.

1.1 Research Problem

After reviewing some references, studies and research in the physiological, training, medical and biological aspect, it was noted that some physiological and functional variables may be affected in physical effort, and these variables include semen may be affected by resistance training, such as explosive strength training. As the football player needs this type of strength of training, I did not find a study at the local level showing the effect of high training on semen indicators, so I conducted this study to identify the impact of explosive strength training on semen indicators, and I chose football players for what you need this effectiveness of explosive strength, which prompted the researcher to prepare exercises for explosive strength and the extent of its impact on semen indicators for players of Al-Salman Football Club.

1.2 Research Hypotheses

1. There are statistically significant differences between the pre- and post-tests in the indicators of semen (dead sperm) for the control and experimental groups and in favor of the experimental group of players of Al-Salman Football Club.
2. There are significant differences between the control group and experimental in the explosive strength and some indicators of semen (Dead sperm) in the post-tests and in favor of the experimental group.

1.3 Research Objectives

1. Identify the effect of explosive strength exercises on the semen index (dead sperm) of Al-Salman Football Club players.
2. Identify the difference between the control and experimental groups in the semen index (dead sperm).

2. Methodology and Field Procedures

2.1 Methodology

The nature of the phenomenon that the researcher deals with is the one that determines the type and nature of the method used as "the method is the way leading to the detection of the truth in science to reach a certain result.

2.2 Research Community and Sample

After the research community was determined by the players of Al-Salman Football Club for the year (2023/2024), which numbered (24), as this community was divided by lottery into two equivalent groups (a control group, and an experimental group), with (12) players for each group.

2.3 Research Means, Tools, and Devices

2.3.1 Means of Collecting Information

The researcher used the following research methods

1. Scientific sources and references
2. International Information Network (Internet).

2.3.2 Devices used

1. Manual electronic stopwatch.
2. Semen indicator measuring device (Auto sperm analysis).
3. A computer (HP) laptop.
4. Football field.
5. Plastic cones (10).
6. Tube to preserve semen.
7. Terraces and boxes of different heights.

2.3.3 Tools used

1. Tests and measurement.
2. Personal interviews.
3. Questionnaire.

2.4 Field Research Procedures

2.4.1 Exploratory Experiment

In order to adjust the variables of the study and stand on the obstacles to work and ensure the vocabulary of the approach must the researcher to conduct an exploratory experiment

before the main experiment of the research as the exploratory experiment "a miniature experiment of the basic experiment and must meet the conditions and conditions in which the basic experiment as much as possible so that the results can be taken" [1].

2.4.2 Description of Explosive Strength Test

2.4.2.1 Long Jump Test of Stability

Purpose of the test: To measure the explosive strength of the muscles of the lower limb.

Tools used: sticky tape length 1 m, tape measuring 30 m.

Performance description: A sticky tape with a length of 1 m is placed on the ground and a tape measure with a length of 30 m, the student stands behind the tape measure and when giving a signal, the player jumps from the stability and descends with the feet together to the farthest distance.

Measurement: Recording the farthest distance jumped by the player in meters.

2.4.3 Pre-tests

On 1/11/2023, the pre-tests were conducted for the research sample, the explosive strength was tested, as well as the semen components test separately, each player was given three attempts to test the explosive strength, as the pre-tests lasted (3) days. On the first day, the explosive strength tests were conducted, then a rest day, then on the third day, semen tests were conducted.

2.4.4 Proposed Training Approach

- The aim of the approach is to develop the explosive strength of the two legs and its effect on the semen index.
- The researcher trained the experimental group on the special exercises included in the proposed exercises, while the control group remained on the training approach of their coach.
- The approach lasts (10) weeks
- The nature of severity in the approach (1-3).
- The number of sessions in the whole experience (30) training sessions.
- The experimental group implemented the approach prepared for it.

2.4.5 Post-tests

On 15/1/2024, the post-tests were conducted after completing the training approach, which lasts (10) weeks, taking into account that the tests were conducted under the same conditions in which the pre-tests were conducted.

2.4.6 Statistical Procedures

The researcher used the statistical bag SPSS for the purpose of extracting the results.

3. Results Presentation, Analysis, and Discussion

3.1 Pre- and Post-Tests Presentation and Analysis of the Control Group

Table 1: Shows mean, standard deviation, calculated t-values, and pre- and post-significance level in the semen index of the control group

Variables	Measurement units	Pre-test		Post-test		Calculated (t)	Sig. level	Statistical Sig.
		M.	St.d	M.	St.d			
Dead sperm	Percentage	45.740	15.619	35.560	12.029	4.971	0.001	Sig.

Table (1) shows the mean, standard deviation, calculated (t) values and the level of pre- and post-significance in the semen

index (Dead sperm) of the control group, as the tribal arithmetic mean came (45.740) and a standard deviation

(15.619) As for the dimensional arithmetic mean, it was (35.560) and a standard deviation (12.029) As for the calculated (t) values, it was (4.971), while the significance level came (0.001) and since the significance levels of the indicator (dead sperm) were less than the level of (0.05), and this indicates the significance of the difference between the pre- and post-tests for the control group.

3.1.1 Results Discussion of Pre- and Post-Tests of the Control Group

In order to discuss what was stated in Table (1), it is necessary to interpret the results that appeared, as it is noted that there are significant differences between the pre- and post-tests of the semen index, but the preference for the results came to the officer group, which was a group of players of Al-Salman Football Club. The researcher attributes the reason for the development of the semen index (Dead sperm) to the physical activity they practice within all training sessions within ten weeks, as "sperm fertility can improve in regular moderate exercise and act as an antioxidant, and training for the body improves the production of antioxidant enzymes. But when intense practice, or when we don't allow the body time to repair itself, cell damage can occur as a result of oxidation [2].

This negatively affects semen. Therefore, the external load is small compared to the experimental group, which is reflected in the internal load and causes physiological, morphological and biochemical changes such as the change that occurs in the production of enzymes, hormones and antioxidants, and these changes are reflected in the semen index (Dead sperm) as "men who lift weights or exercise outside the home tend to have the largest number of sperm." Diana Famond, a researcher and responsible for the study, pointed out that "we analyzed semen quality measures such as sperm count, motility and shape," and the results showed that physical activity leads to better semen. A study found that men who exercised moderately had better sperm movement compared to men who did little or no physical exercise [3]. This confirms the results of the research reached by the researcher as the resistance trainings organized according to a clear scientific basis and performed moderately and commensurate with the capabilities of the physical sample have a positive impact more than the physical activity that the control group works within the training session.

3.2.3 Presentation and analysis of pre- and post-test in the semen index of the experimental group

Table 2: Shows mean, standard deviation, calculated t-values, and pre- and post-significance level in the semen index (dead sperm) of the experimental group

Variables	Measurement units	Pre-test		Post-test		Calculated (t)	Sig. level	Statistical Sig.
		M.	St.d	M.	St.d			
Dead sperm	Percentage	43.170	11.943	23.190	5.251	6.528	0.000	Sig.

Table (2) tells us about the arithmetic mean, standard deviation, calculated (t) values and the level of pre- and post-significance in the semen index (Dead sperm) of the experimental group, as the arithmetic mean came before (43.170) and standard deviation (11.943) As for the arithmetic mean after it was (23.190) and standard deviation (5.251) As for the calculated values (t) was (6.528) The level of significance came (0.000), where it was shown through the results that the level of significance came less than (0.05), this indicates the significance of the differences between the two pre-tests and after the experimental group.

3.2.4 Results Discussion of Pre- and Post-Test of the Experimental Group

Through the presentation made by the researcher in Table (2.1) we see that there is a clear improvement in the semen index (dead sperm) for this group and the researcher attributes the reason for this improvement to the exercises that ensure regular exercises, which effectively affected the increase of antioxidants inside the body, which reflected positively on some indicators of semen where "more evidence suggests recently that physical activity can improve semen quality" [4]. And this is confirmed by the current study as the improvement was evident and noticeable in the semen index studied and this development was the result of explosive strength training. It is also due to the improvement of the work of antioxidants in the body as "the defense system of antioxidants of all kinds represents the main pillar through which the body curbs the damage resulting from the oxidation of free radicals of living components inside the body, it works

to make the internal environment in a stable state as much as possible so that the body can perform its vital functions normally without any damage" [5].

Studies have indicated that there are some necessary enzymes that have an important effect in stimulating the movement of sperm in semen, such as soluble adenylyl cyclase [6]. Increasing the effectiveness of enzymes during physical activity for any sports event, especially anaerobic activities, urges an increase in muscular work in players Works to increase the level of effectiveness of enzymes significantly is the result of the process of glycolysis anaerobic " [7]. It is clear that physical activity works to increase the level of enzymes P" There is a direct relationship between the effectiveness of the enzyme α -Glucosidase and sperm motility and percentage of sperm with good anterior progressive motion, as the percentage of mobile sperm increases with the higher level of this enzyme [8].

This improved the semen index, the results showed that the level of (Dead sperm) improved significantly. In addition, exercise can be a therapeutic exercise that contributes to raising the level of semen indicators based on the results of the research. "A new study has shown a link between male fertility and exercise. The researchers found that men who participated in a moderate diet (1 hour of exercise, 3 times a week) had better sperm results than men who did heavy exercise, such as athletes and marathon runners.

3.2.5 Presentation and Analysis of Post-Tests of the Control and Experimental Groups

Table 3: The mean, standard deviation, calculated t-values and the level of dimensional significance in the semen index between the two research groups

Variables	Measurement units	Control group		Experimental group		Calculated (t)	Sig. level	Statistical Sig.
		M.	St.d	M.	St.d			
Dead sperm	Percentage	35.560	12.029	23.190	5.251	2.980	0.008	Sig.

Table (3) shows the mean, standard deviation, calculated (t) values and the level of dimensional significance in the semen index (Dead sperm) between the two research groups, as the arithmetic mean of the control group came respectively (35.560) and a standard deviation (12.029) As for the arithmetic mean of the experimental group was (23.190) and a standard deviation of (5.251) As for the calculated values (t) missed (2.980) The level of significance came (0.008), where the results showed that the level of significance came less than (0.05), this indicates that there are differences Significant between the post-tests of the two research groups and for the benefit of the experimental group.

3.2.6 Results Discuss of Post-Tests of the Control and Experimental Groups

Based on presentation and analysis of the results in tables (3) of the semen index (Dead sperm) dimension of the control and experimental group showed that there are significant differences in these tests and were in favor of the experimental group that was trained according to the approach and by three training sessions per week and for a period of ten weeks, which was characterized by exercises within the approach with the character of strength and speed and the performance of the exercise as much as possible for a period of (10-15) seconds. The exercises varied within the training doses such as the exercise of double jumping to the side over two barriers, double jump forward to a box with a height of (30) cm, running to the side as quickly as possible without intersection of the legs and quick double jump of the ladder up to the top. Which was designed according to a consistent training system in terms of stress, repetitions and rest periods were given in a ripple manner during the approach" [9]. If the training load is the main means not to bring about the physiological effects of the body in order to achieve improved responses and then adapt the body systems and rise in level so it is one of the most important factors for the success of the training program and then improve performance" [10]. The researcher was keen that the exercises be similar and close to the performance of movements in football, which led to the development of this type of strength to lower muscle groups" Abu Ela pointed out that the use of exercises that are consistent with the nature of their performance with the general form of performance of specialized skills leads to better production" [11]. The explosive strength of the two legs affects the rest of the muscles of the body positively and works to raise their efficiency, Khaled Al-Ameri confirms that "intensive leg training does not help to build a thigh with strong muscles, but it leads to rapid and strong growth of muscles in the upper part of the body, so the intensity has increased. Leg training increases the development and growth of the chest, back and arms and thus stimulates the metabolic hormones testosterone and growth hormones" [12].

This is what came in the exercises that were designed by the research in harmony with the sample levels and determined the stress moderately, "On the other hand, the enzymes are affected by sports activity positively, and these enzymes include the enzyme phosphatase acid and the enzyme creatine phosphokinase CPK, as the CPK is important in stimulating the reactions of energy production necessary for sports activity. It increases after sports training and exercise if it reaches a level higher than its level in the normal state" [13]. Since physical activity affects the activity of enzymes and their levels, this is reflected in the indicators of semen, some

enzymes work to maintain the life of the sperm, "as sperm weakness and death are associated with the absence of fructose sugar and acid phosphatase in the semen, as they work to stimulate and produce energy for sperm and its activity" [14]. Sperm is also affected by the work of mineral salts inside the body and these salts change due to training, and "semen contains multiple elements where the imbalance of concentrations leads to fertility problems in Males are: calcium, potassium, zinc lead, magnesium, selenium, aluminum, cadmium and copper." The high concentration of Ca²⁺ calcium ion improves sperm motility and enhances their fertile capacity [15].

The researcher explains that all indicators of semen have evolved and improved their level through the continuation of the training process and the exercises prepared and the application of the rules urged by the science of training of regularity and gradation in pregnancy, sequence, warm-up and diversification in exercises within the training sessions, which in turn led to the development of explosive strength of the lower limbs and which reflected on antioxidants and their system of action such as enzymes as well as on the work of hormones, especially testosterone and mineral salts, which reflected this development on The studied semen index (Dead sperm) is preferable to the experimental group that was trained on the mentioned method. This development as a result of the application of the approach can be considered a base for building football players and a therapeutic base contributing to those who suffer from sperm impairment as a result of biochemical developments that have occurred in the indicators.

4. Conclusions and Recommendations

4.1 Conclusions

1. It was found that the exercise has explosive strength has improved the semen index (Dead sperm).
2. There is a clear preference for the semen index of the experimental group.

4.2 Recommendations

1. The need to use the suggested exercises for people with asthenia sperm because of its positive effect on the semen index (Dead sperm).
2. Strength training can be considered an aid therapy for people with weak sperm.

5. References

1. Nasr al-Din AAEA. Physiology of physical fitness. Cairo: Dar Al-Fikr Al-Arabi; c1992.
2. Aziz AA. General Human Physiology and Sports. Diwanayah: Safar Wahed Center; c2016.
3. Bean A. Training Guide Building Muscle and Increasing Strength. Translated by Khaled Al-Ameri. 2nd ed. Egypt: Cairo, Dar Al-Farouk for Publishing and Distribution; c2000.
4. Chavarro G. Exercise Improves the ability to conjugal cohabitation for men. Br J Sports Med; c2013 Feb, 112(9).
5. Manuel J, Lemos R. Moderate exercise improves semen quality in men. Eur J Appl Physiol; c2012 Sep, 102(9).
6. Al-Obaidi SAH. The Effect of Using FertiCult Flushing Medium on Activating Sperm Features in Glass for Infertile Patients with Asthenic Sperm [master's thesis]. University of Kufa; c2010.
7. Famond F, Fertil *et al.* Response of semen parameters to three training modalities; c2009.

8. Allawi MH, Fattah AEAA. Physiology of sports training. Cairo: Dar Al-Kutub; [year not provided].
9. Al-Avi SMH, Rodina M, Cosson J, Psenicka M, Linhart O. Roles of extracellular and pH on motility and flagellar waveform parameters in sturgeon spermatozoa. *Cybium*; c2008.
10. Esposito G, Jaiswal BS, Xie F, Krajnc-Franken MA, Robben TJ, Strik AM, *et al.* Mice deficient for soluble adenylyl cyclase are infertile because of a severe sperm motility defect. *Proc Natl Acad Sci USA*; c2004.
11. McCall MR, Frie B. Can antioxidant vitamins materially reduce oxidative damage in humans? *Free Radic Biol Med*; c1999.
12. Saranen M, Suistomaa U, Kantola M. Lead, magnesium, selenium and zinc in human seminal fluid: comparison with semen parameters and fertility. *Hum Reprod*; c1987.
13. Vaamonde D, Da Silva-Grigoletto ME, Garcia-Manso JM, Barrera N, Vaamonde-Lemos R. Physically active men show better semen parameters and hormone values than sedentary men. *Eur J Appl Physiol*.
14. Yassa DA, Idriss WK, Atassi ME, Rao SK. The diagnostic value of seminal glucosidase enzyme index for sperm motility and fertilizing capacity. *Saudi Med*; c2001.