COMPARISON OF SOME IMMUNE PROTEINS AMONG PRACTITIONERS AND NON-PRACTITIONERS OF SPORTS ACTIVITY BETWEEN (35-40) YEARS OLD

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ABSTRACT

The study aimed to identify the percentage of immune proteins in people who engage in sports and non-practicing men and women at a year (35-40) years, in addition to identifying the differences between practitioners of sports activity and non-practitioners, and the research hypotheses included that there are significant differences in immune proteins, the researcher used the descriptive approach for its relevance to a problem, and in an intentional way, the society identified the two men and women participating in the Health Fitness Center - Men - Women 2020-2021, and their number (20) people, and the number of non-practicing sports activity (20) people, the main experiment was conducted on a research sample of (20) people within a three-day period from 13/2/2021 to 20/3/2021.

Key words: immune proteins, athletic activity

I. INTRODUCTION:

It is evident that the basic and essential sciences that play an effective role in the sports field is the physiology of sports training, which reflects the outcome of training processes on the athlete’s body, whose result is the physical adaptation of sports activity, and as a result of the development in sports sciences as a result of previous studies and research that have a role in what is happening now in progress and developing the ability of the individual athlete’s body functionally to achieve high-level sports achievements as well as developing the general health of the activity, the truth is that this can only be done peacefully, and results are only reached through the effectiveness of training methods through which the process of adaptation of the athlete’s body apparatus appears, whether for the practitioners for specialized sports activity or for health fitness, on the basis of that, science and scholars have provided a human service over different periods of time to treat a number of diseases, the cause of which was at most at different ages, lack of physical exertion, whether it was walking of all kinds, running, jogging, swimming and so on, but with the interest of scientists and researchers, it became clear to the importance of health for humans that it has become a community culture to explain the causes of disease and eat healthy food, determining lunches for the day is a sign of community members changing their convictions towards practicing sporting activity, which plays an important role in the modern era in compatibility and convergence between the ideas of doctors, teachers and trainers of activity and physical effort, as a result, many studies were conducted, and an explanation for this is that physical activity in its nature improves the respiratory system as well as improves the function of the circulatory system, nd the nervous system, tissues and cells that contribute to regulating the body’s mechanisms, especially the immune system. Conversely, low levels of physical activity are associated with an increase in the incidence of chronic diseases in adults, such as type II diabetes, heart disease, osteonecrosis and some cancers.

Therefore, it became correct to think about the exercise of physical fitness, which contributes to the development of the individual in terms of health through its direct effect on the functional apparatus, so the importance of research lies in comparing the immune changes of practitioners of sports activity from non-practitioners.
Research problem:
Physical health is a relatively recent issue that occupies the world at the present time, and this is what we see clear because it receives sufficient attention in Iraqi society and the existence of clear explanations for what the general health of the body reaches. So the problem of the current study has been demonstrated about the relationship of sports activity in improving the immune system, especially for the elderly who have an increase in the process of demolishing the building processes in the body, therefore, the researcher decided to go into this study to answer the question: What is the difference between practitioners and non-practitioners of sports activity in terms of immune proteins.

Research objective:
- Identifying the percentage of immune proteins among practitioners and non-practitioners of sports activity between the ages of (35-40) years.
- Comparison of immune proteins among practitioners and non-practitioners of sports activity at ages (35-40) years.

Research hypotheses:
- There are statistically significant differences between practitioners and non-practitioners of sports activity between the ages of (35-40) years.

Research fields:
The human field: Fitness practitioners and female practitioners aged (35-40)...


Spatial field: Health Fitness Center - Men - Women / Diwaniyah / Albilad Laboratory for Pathological Analysis and Hormones..

II. RESEARCH METHODOLOGY AND FIELD PROCEDURES:

Research Methodology:
The researcher used the descriptive method for its relevance to the research problem.

Community and sample research:
The community of (40) people, including practitioners and practitioners of sports activity in Diwaniyah, numbered (20) women and (20) men, and by random distribution method (10) were selected from each group of the two groups of practitioners of sports activity. (10) women and (10) men.

In order to identify the homogeneity of the sample, the researcher extracted the homogeneity of the sample members. The coefficient of relative difference for each of the length, weight and age was extracted after finding the arithmetic mean, median and standard deviation for each one. The results showed the homogeneity of the sample because it was confined to (± 1) according to table(1).

Table (1) the homogeneity of the sample shows the practitioners and non-practitioners of sports activity for women and men, aged (35-40)

<table>
<thead>
<tr>
<th>Testes</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Standard error</th>
<th>Skew ness</th>
<th>Variationcoefficient</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>79.700</td>
<td>1.212</td>
<td>3.831</td>
<td>0.257</td>
<td>1.5201</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Length</td>
<td>156.60</td>
<td>1.127</td>
<td>3.565</td>
<td>-0.270</td>
<td>0.7199</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Testes</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Standard error</td>
<td>Skewness</td>
<td>Variation coefficient</td>
<td>Significant</td>
</tr>
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<td>----------</td>
<td>-----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Age</td>
<td>37.70</td>
<td>0.60</td>
<td>1.889</td>
<td>-0.327</td>
<td>1.5841</td>
<td>Homogeneity</td>
</tr>
</tbody>
</table>

**Men who practice sports activity**

<table>
<thead>
<tr>
<th>Testes</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Standard error</th>
<th>Skewness</th>
<th>Variation coefficient</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>83.100</td>
<td>0.526</td>
<td>1.66333</td>
<td>-0.739</td>
<td>0.633</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Length</td>
<td>164.50</td>
<td>0.687</td>
<td>2.17307</td>
<td>0.000</td>
<td>0.418</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Age</td>
<td>38.00</td>
<td>0.471</td>
<td>1.49071</td>
<td>0.000</td>
<td>1.241</td>
<td>Homogeneity</td>
</tr>
</tbody>
</table>

**Women who non-practicing sports activity**

<table>
<thead>
<tr>
<th>Testes</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Standard error</th>
<th>Skewness</th>
<th>Variation coefficient</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>78.9</td>
<td>2.33</td>
<td>0.737</td>
<td>-0.84</td>
<td>2.95</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Length</td>
<td>163</td>
<td>3.92</td>
<td>1.238</td>
<td>-0.29</td>
<td>2.40</td>
<td>Homogeneity</td>
</tr>
<tr>
<td>Age</td>
<td>37.8</td>
<td>1.99</td>
<td>0.628</td>
<td>-0.29</td>
<td>5.26</td>
<td>Homogeneity</td>
</tr>
</tbody>
</table>

**Means, tools and devices used:**

**Means of gathering information:**
- Questionnaire to collect information.
- Arab and foreign sources.

**Means, tools and devices used in the research:**
- Devices that implement the training program (no gym, moving belt, elastic sticks, medicine balls, simple)
- The Medical measurement Length and Mass Meter are US-made.
- Sterile plastic injection volume (20) milliliters.
- Medical alcohol.
- Cotton and sterile materials.
- Trinket for attaching the arm
- (20) milliliter tubes to separate the blood inside the blood separator.
- Bottles containing anticoagulant.
- Centrifuge (blood separation) device.
- Optical spectrophotometer
- A vision device for reading the extent of proliferation of immune proteins (protractor-shaped lens).

Field research procedures:

Determine the study variables:

Immune proteins:
- IgG antibody.
- IgA antibody.
- IgM antibody.

Measurement of detection of immune proteins:

Name of the measurement: the measurement of detection of values of immune proteins.

Performing the measurement: The measurement is made from the sitting position on the chair, not the individual of the research sample, whether it is practitioners of sports activity or non-practitioners for a period of five minutes for the sake of resting, and then after the sporting activity of those who practice it, the (medical staff) draws blood by drawing (6me) to extract Evaluate immune proteins.

Measurement method: The Single Radial Immunodiffusion (RID) Test Kits method was used to determine the concentration of immunoproteins (clopolyins) IgG, IgA, and IgM. The measurement method was divided as follows:

- The components of the kit (analysis kit).
- Each (Kit) contains three bottles, containing (0.25) ml of reference serum in a high, medium and low concentration, coded by numbers (1, 2, 3) respectively, and each vial was treated with (1%) of (Sodium Azide) It also contains more than (2%) of EACA (E-aminocaproic).
- The materials used
  - Endoplates.
  - Human Reference Serum.
  - Control Serum.
  - Organic salt (sodium chloride) (NaCl) (0.85%) to mitigate elevated samples.
  - A vision device to read the extent of spread (protractor-shaped lens).
  - Standard curves.

Measurement procedures: The measurement procedures included the following:

1. Preparation of the blood serum obtained from the process of separating the blood taken from the research sample.
2. We condition the catalyst to room temperature.
3. We take out the acar plate (which is a gelatinous medium) from the bag, then we remove the cover and conduct an examination on the containers to ensure that they are not exposed to moisture and in the event of humidity, the dish is kept open as it is at room temperature for about (15) minutes Until the moisture evaporates.
4. Mix the reference and control serum with the serum sample taken from the research sample.

5. Five microliters (L) of the mixture are added to each hole in the plate.

6. Leave the dish at room temperature for a period of (3) days for the immune proteins (IgG, IgA), while it is left for (4) days for the immune protein (IgM).

7. The extent of the spread in the pits of the Akkar plate is read by a special lens in the form of a protractor to the nearest (0.1) mm.

8. After that, the concentration of the immune proteins and the supplement are extracted using special tables after dropping the readings obtained from step (7) above on the standard curve or by using the tables for that.

9. **Registration:** Blood samples are taken in the laboratories and the values for variables are taken after their analysis to be presented in Chapter Four.

**Exploratory Experience:**

The exploratory experiment was conducted on (Tuesday) 12/2/2021 at (four) in the afternoon in the country laboratory for pathological analyzes in order to learn how to conduct an analysis of immune proteins and know their proportions on (8) players from the research community as well as to identify the equipment used in the laboratory, the validity of the equipment, and the efficiency of the auxiliary and medical staff in completing their duties of drawing blood and placing it in (tubes) and numbered according to the sequence of players.

**Results :**

1. There was a good efficiency in the country’s laboratory in extracting the percentage of immune proteins.

2. The equipment used for the tests is valid and appropriate for the test.

3. There was a good competence for the assistant and medical staff.

4. Adaptation of the test time to the research sample.

**Scientific foundations of the test:**

**Validity:** The validity of the content, which is based on the opinions of experts and specialists, was used to confirm that the test measures the phenomenon for which it was developed.

**Reliability:** The researcher used the re-test method to find the reliability parameter, as the first test was conducted on (Wednesday) 2/13/2021, after which the test was repeated after seven days under the same conditions for the first test. The test was performed on (8) people from the same research sample, and the researcher used the simple correlation coefficient law Pearson to extract the reliability coefficient as the value of the correlation coefficient was (0.87).

**Objectivity:** Since laboratory test data are taken directly using measuring devices, it does not require objectivity, as it is not subject to subjective judgment and is free from bias.

**Main experience:**

The main experiment was conducted on the research sample of (40) people, including (20) women and men practicing sports activity, and (20) of them men and women who are not practicing sports activity, within an eight-day period from 20/2/2021 to 28/2/2021.

**Statistical means:** The researchers used the SPSS statistical bag to process the data.

- Mean.
- Skew ness.

[www.turkjphysiotherrehabil.org](http://www.turkjphysiotherrehabil.org)
- Std. Deviation.
- Test (T) independent samples.
- Variation coefficient.

**Presentation and analysis of results and discussion of results:**

**Identify the differences in immune proteins in practicing and non-practicing women:**

Table (3) shows the differences in immune proteins in sports and non-practicing women.

<table>
<thead>
<tr>
<th>Immune proteins</th>
<th>measuring unit</th>
<th>Practices Sports Activity</th>
<th>Non-practices sporting activity</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IgG</td>
<td>1307.50</td>
<td>3.03</td>
<td>816.50</td>
<td>12.62</td>
<td>119.673</td>
<td>0.00</td>
</tr>
<tr>
<td>IgA</td>
<td>108.20</td>
<td>4.18</td>
<td>107.50</td>
<td>2.95</td>
<td>0.432</td>
<td>0.035</td>
</tr>
<tr>
<td>IgM</td>
<td>100.20</td>
<td>7.83</td>
<td>95.40</td>
<td>3.34</td>
<td>1.783</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Table (2) shows that there are significant differences between women who are practicing and not practicing athletic activity in tests of immune proteins. With regard to (IgG), the arithmetic mean reached (1307.50) with a standard deviation (3.03). As for the non-practicing sports activity, the mean was (816.50) and a standard deviation (12.62). As for the value of (t) calculated (119.673) and at a level of significance (0.00), it is less than (0.05) at a degree of freedom (18), which indicates the existence of a significant difference and in favor of women practicing sports activity. With regard to (IgA), the arithmetic mean reached (108.20) with a standard deviation (4.18) for women practicing sports activity. As for non-practicing, the arithmetic mean was (107.50) and with a standard deviation (2.95). As for the value of (t) calculated (0.432) and at a level of significance (0.00) It is less than (0.05) at a degree of freedom (18), which indicates the existence of a moral difference in favor of women who practice sports activity. As for (IgM), the arithmetic mean reached (100.20) with a standard deviation (7.83) for women practicing sports activity. As for non-practicing, the arithmetic mean was (95.40) and with a standard deviation (3.34). As for the value of (t) computed (1.783) and at a level of significance (0.011) It is less than (0.05) at a degree of freedom (18), which indicates the existence of a moral difference and in favor of women practicing sports activity.

**Identify the differences in immune proteins in practicing and non-practicing men:**

Table (3) shows the differences in immune proteins in sports and non-practicing men.

<table>
<thead>
<tr>
<th>Immune proteins</th>
<th>measuring unit</th>
<th>Practices Sports Activity</th>
<th>Non-practices sporting activity</th>
<th>T value</th>
<th>Sig level</th>
<th>Sig type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IgG</td>
<td>885.50</td>
<td>3.03</td>
<td>811.70</td>
<td>12.59</td>
<td>18.026</td>
<td>0.004</td>
</tr>
<tr>
<td>IgA</td>
<td>106.60</td>
<td>3.86</td>
<td>105.50</td>
<td>1.96</td>
<td>0.803</td>
<td>0.029</td>
</tr>
<tr>
<td>IgM</td>
<td>96.84</td>
<td>1.53</td>
<td>93.90</td>
<td>2.69</td>
<td>3.014</td>
<td>0.031</td>
</tr>
</tbody>
</table>

Table (3) shows that there are significant differences between practicing men and non-practicing men in sports activity. With regard to (IgG), the arithmetic mean reached (885.50) with a standard deviation (3.03). As for non-practitioners, the arithmetic mean was (811.70) and a standard deviation (12.59). The calculated value of (t) is (18.026) and at the level of significance (0.004), which is less than (0.05) at the degree of freedom (18), which indicates the existence of a significant difference and in favor of men practicing sports activity. With regard to
(IgA), the arithmetic mean was (106.60) with a standard deviation (3.86). As for the non-practicing men, the arithmetic mean was (105.50) and a standard deviation (1.96). As for the value of (t) calculated (0.803) and at the level of significance (0.029), which is less than (0.05) with a degree of freedom (18), which indicates the existence of a moral difference in favor of those who are practicing sports. With regard to (IgM), the arithmetic mean was (96.84) with a standard deviation (1.53). As for men not practicing sports activity, the arithmetic mean was (93.90) and with a standard deviation (2.69). As for the value of (t) computed (3.014) and at the level of significance (0.031), which is Less than (0.05) at a degree of freedom (18), which indicates a significant difference in favor of men practicing sports activity.

**Discussing the results of the differences in immune proteins for a sample under study:**

Tables (2) and (3) revealed the results of the immune protein variants, as there were significant differences between practitioners of sports activity and non-practitioners (for men and women) at the age of (35-40) and in favor of practitioners of sports activity. The researchers believe the reason for these differences is that immune proteins represent the main factor in the training process and that the increase in immunity protein IgG is noticeable because it “forms the largest part in the blood plasma and constitutes more than 75% of the immune proteins being one of the important influences for the resistance of the foreign body” (1), therefore, there is a significant increase in the immune protein (IgG), and this increase is associated with an increase in athletic activity. As the regular sports activity leads to a change in the level of immunity protein IgG concentration and then leads to an increase in it (2).

Likewise, it is a protein molecule with a shape similar to the letter (Y), and it is composed of two arms. Each arm consists of a long (heavy) and a short (light) chain (3). There is (about (80%)) of the immune proteins in the plasma, and its molecular weight is (150,000) Dalton, and the serum of a normal human adult contains (700-1500) mg / mL of this class of inhibited globulin, and its half-life is (18) Daily in humans (4).

As for the immune protein (IgM) and (IgA), the reason for the presence of a significant difference is that regular sporting activity leads to an increase in the formation of special antibodies, in response to immune challenges, especially the immune protein (IgM) and (IgA). Physical activity will activate the immune system (5).

![Figure (1)](image_url)

Clarifies the differences in IgG
III. CONCLUSIONS AND RECOMMENDATIONS:

Conclusions:
- Sports activity contributes to positive changes in immune proteins as well as good health for a person who practices sports activity at the age of (35-40).
- The sport activity has created an efficiency in the immune system of those who are practicing sports activity, in contrast to that of non-practitioners of sports activity.

Recommendations:
- Workers and trainers in the field of sports and health must take into account the various sports activities because they contribute to the development of physical capabilities and the immune system.
- Numerous studies can be conducted in this regard in other activities.

REFERENCES: