

## The effectiveness of the use of Rehabilitation exercises associated with electrical stimulation in improving the strength and flexibility of the spinal muscles of women with slipped disc and age (35-45 years)

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**Abstract:** The objective of the research is to estimate: 1. The number of training exercises associated with electrical stimulation, 2. Recognition of the effect of exercise, the rehabilitation associated with electrical stimulation in improving strength and elasticity of the spine muscles with ages (35-45) years. The researcher assumed: There were no statistically significant differences between the results of the strength and elasticity tests of the tribal and posterior spinal muscles and the two experimental groups (control – experimental). The results revealed that there were no statistically significant differences between the results of the tests of strength and elasticity of the spinal muscles and the two groups of research (control – experimental). The researcher used the experimental method as the most appropriate research to solve the problem of research. The sample of the research was chosen by means of willful women (35-45 years old) and their number was applied. The exercise vocabulary was preceded by electrical stimulation and using T.N. S, To stimulate as many muscles as possible around the joint to strengthen its function and synergy it will be graduated from (50 - 250) Hz. The rehabilitation exercises will be stimulated during the course at a rate of (18) rehabilitation units equivalent to (3) rehabilitation units in one week and for six weeks. The test is then performed retroactively.

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**Key word:** Rehabilitation exercises. electrical stimulation. Flexibility. Strength. slipped disc.

### The researcher concluded:

#### 1-Definition of research:

##### 1-1. Introduction and importance of research

That human beings over the past and recent age gave man great importance because he is God's successor in the earth to live and die for that was the human and is still the essence of this universe and the secret of his existence so developed countries to take care of the individual and health during its various stages of development as the human being in the exercise of different Events and activities of life and sports to a lot of pressures and injuries that lead to various disabilities and physical malformations, which has a direct impact on human strength and lack of acquisition of natural form due to deviations of the strength that distort and hinder movement. Rehabilitation exercises that help to treat chronic back pain and pain in the spine caused by lumbar discoloration are among the most prevalent health problems in the world. They are the most frequent patients in orthopedic and physiotherapy clinics. Technological advances have led to a lack of movement. The human being has a negative impact on his health and on performing the tasks assigned. The spine is a basic pillar in the human body because of the characteristics that qualify him to carry the body weight and transfer to the lower limbs, so the importance of research in the need to find treatments

or exercises rehabilitation and carrying the head and upper limbs and thoracic corset as well as the passage of the spinal cord within the vertebral canal in paragraphs ), Which were prepared by the researcher contribute to reduce those pains, especially low back pain for a group of women with slipped cartilage as well as the use of electrical stimulation to reduce and reduce the pain.

##### 1-2. Research Problem:

For a typical lifestyle, regardless of the environment, age, and sex, many individuals, whether male or female, are exposed to joint diseases and injuries and lower back pain. And through the familiar. Researcher of many studies and recent research, which is one of the reasons that lead to slipped cartilage in women is the changes faced by women in different stages of life as well as the lack of simple exercise, such as walking makes them complain of some pain and low back pain. In this context, I found myself obliged to study this problem that facing women, especially after becoming a man in the autumn of life, where he faces many diseases, which cause the weakening and limit his ability in various fields to become the weakness and despair of the magnitude of the difference.

##### 1-3. Goals Search

1. The number of training exercises associated with electrical stimulation.

2. Recognition of the effect of exercise,
3. The rehabilitation associated with electrical stimulation in improving strength and elasticity of the spine muscles with ages (35-45) years

4: Assuming the research

There were no statistically significant differences between the results of the strength and elasticity tests of the tribal and posterior spinal muscles and the two experimental groups (control – experimental). There were no statistically significant differences between the results of the tests of strength and elasticity of the spinal muscles and the two groups of research (control – experimental)

#### 5. Research Areas:

Human domain: A sample of 12 women with slipped disc

Spatial domain: Specialized Center for Sports Medicine.

Time domain: for the period from 18/1/2017 to 14/5/2017.

### 2-Research methodology and field procedures

#### 1-2. Research Curriculum:

The choice of the type of the methodology used is determined by the parameters of the research problem studied. The researcher adopted the experimental method, which is defined as. (8:120)"the approach which is based on the direct and realistic interaction with the different phenomena and is based on two basic pillars observation and experimentation" The researcher chose experimental design with two experimental and control groups With strict control of tribal and post-test.

#### 2-2. Sample and research community.

The problem of study is that determines the research community. Therefore, the research society represents women and those who are in the center of specialization for sports medicine Who suffer from slipped cartilage. They have 35 women. The sample of the research was withdrawn from them. The number of women is 12 women. This is because other women do not want to continue the research Curriculum and not follow the curriculum. The research sample increased by 34.28%.

**Table (1) shows the homogeneity of the research sample in a number of variables**

Variable	Unit of measurement	Intermediate mean	Median	Standard deviation	Torsion coefficient
age	Year	293.36	35.26	2.47	0.56
Height	CM	67.1	1.69	1.904	0.86
Weight	KG	76.326	72.317	3.256	0.40

The value of the torsion coefficient is limited to ( $\pm 1$ ). This indicates that the sample is distributed moderately

### 3-Scientific research tools, tools and devices used in research

#### 2-3-1: Scientific research tools and devices used.

-Arab and foreign sources.

-International Information Network (Internet).

-Electrical stimulation of the muscles (T. EN S) type zimmermedizi (System) model (Galva5) Japanese-made. stopwatch .

. -Dynamiter to measure the strength of the muscles of the spine.

2-4 Wooden box height 50 cm, ruler measuring 1 m height.-Tape measure Field research procedures.

2-4-1 Tests used in research:

After reviewing the sources and references, a questionnaire was prepared to determine the appropriate tests and was presented to the experts. The tests that were obtained were selected as a percentage of the agreement (75%) (7:15).

Test the strength of the back muscles using Dynamometer (10-80) Test the elasticity of the spine from the front stand (2:400-401) ( Test the flexibility of the spine to stand for both sides (right left (10:80) Test the strength of the back muscles Is a mini-

experiment of the main experiment as the researcher conducted a pilot experiment on (3) Casualty outside the sample of the research and on 15/1/2017 at (9) morning and purpose.

1. Determine the suitability of the training exercises used for the level and abilities of the sample.

2. Identify the efficiency of the auxiliary team..

3. Avoid mistakes in the main experiment. Confirm the safety of the devices and tools used.

2-6. Tribal Tests:

Based on the experimental design requirements, the researcher prepares to test the strength and elasticity of the back muscles of the lumbar cartilage patients in the control and experimental groups, and the conditions related to the tribal tests will be established for repeated tests. It was conducted on 18/1/2017.

2-6-1: Implementation of the main experiment.

The main experiment was conducted on 19/1/2017 as the researcher carried out the training exercises that were prepared by the researcher as she took care of the researcher in exercise rehabilitation:

The principle of graduate was taken into giving exercise easy to hard.

The duration of the qualification course is (20-30) minutes.

Number of training units (18) rehabilitation unit, 3 units per week for a period of (6) weeks.

-The control group will work with them on the rehabilitation approach adopted in the specialized center for sports. medicine and under the supervision of the researcher the duration of application without interference in its vocabulary.

### 2-6-2 Post-test:

The tests were performed on 14/5/2017 under the same conditions and capabilities for the tribal tests..

### Statistical methods:

The statistical bag (Spss) was used to perform the statistical treatments.

### 3. Presentation, analysis and discussion of the results

3-1. Presentation, analysis and discussion of the results of tribal and remote testing of the experimental group:

**Table (2) Shows the appearance of the differences in the variables under consideration.**

Variables	Pre -Test		Post - test		T Calculated	Level of error	Significance
	Average Calculation	±SD	Average Calculation	±SD			
Strength of back muscles	6.57	2.76	8.81	2.94	9.04	0.000	moral
Flexibility of the backbone	2.42	1.94	7.00	1.87	8.62	0.000	moral
Flexibility of the left side of the spine	22	3.46	26.00	3.12	6.90	0.000	moral
Strength of back muscles	14.28	2.46	16.42	2.32	8.11	0.000	moral

Table (2) shows the appearance of the significant differences in the variables under study, since the value of the level of significance (0.05) is greater than the value of the error level, which indicates the significance of the differences and the benefit of the test for the experimental group. The researcher attributed the moral differences to the effectiveness of the rehabilitation exercises used, The mechanical work of muscle contraction and increased control of muscle contraction, which faces the external pregnancy and tolerance to it, which affected the level of improvement of muscles installed and functioning and reflective and according to the principle of muscle synergy as well as the use of muscle stimulation as an additional means to stimulate the nerves surrounding the back muscles. The strength of exercise helps prevent back pain by increasing the ability of the trunk to carry weights as there are different types of

appropriate exercise that help maintain fitness and strengthen the muscles of the spine" Malcolm Gasson said Matthews and Fox (1981) point out that continuous effort or muscle use in a systematic approach to training gives the individual the potential incentive to increase the level of strength (6:43).

The significance of the differences in elasticity of the spine forward and left side "is also due to the effectiveness of the exercise and its variety, as it clearly contributed to increasing the elasticity of the muscles surrounding the spine. This is in line with what Kilani (2000) said that moving exercises work on the development of muscle strength along with flexibility and endurance Muscular. (200:4 ")

3-2. Presentation, analysis and discussion of the results of tribal and post-test tests for the control group of the variables under consideration:

**Table (3) Shows the computation, standard deviations, calculated value, and statistical significance of the variables under consideration by the control group.**

Variables	Pre -Test		Post - test		T Calculated	Level of error	Significance
	Average Calculation	±SD	Average Calculation	±SD			
Strength of back muscles	5.40	1.78	7.30	1.96	6.53	0.000	moral
Flexibility of the backbone	1.40	0.26	3.20	1.28	9.00	0.012	moral
Flexibility of the left side of the spine	20.20	3.78	24	3.96	2.88	0.001	moral
Strength of back muscles	12.20	2.56	13.8	2.64	6.53	0.000	moral

With a significant significance below 0.05

### 3-2. Presentation, analysis and discussion of the results of tribal and post-test tests for the control group of the variables under consideration:

Table 3 shows the significance of the differences and the benefit of the test for the control group in the variables in question. The researcher attributes the moral differences to the nature of the method used by the teachers in the specialized center of sports medicine, which represents exercises and exercises with different objectives, Development of muscle strength and flexibility of muscles surrounding the spine. This is consistent with what Ibrahim, 2000 said, "Muscle strength is achieved by the individual in his composition, and the individual if he wants to maintain the moderation of force must use muscle strength to overcome gravity or create a balance between the two in the case of weakness These muscles, which are twice as strong, lose balance and change the shape of the natural curves of the spine according to this weakness (5:176).

In addition, the rehabilitation exercises used by the therapists have had a clear effect in increasing the elasticity of the joints and ligaments working on them and for the expansion of the extent of mobility joints is

the first symptoms appear after the incidence of slipped cartilage.

### 3-3: Presentation, analysis and discussion of test results for the control and experimental groups of the variables under consideration:

Table 4 shows the appearance of significant differences between the control and experimental groups and for the benefit of the experimental group. The researcher attributed the moral differences to the nature and effectiveness of the **Rehabilitation exercises** used by the researcher as well as the use of the electrical stimulation method as one of the devices that is essential in stimulating the nerves surrounding the muscles. Strength level is not necessarily based on the efficiency of the nervous system in the activation and improvement of muscle function as the increase in the rate of strength here is due to consistency in the work of working muscles and help and against the result of nervous adjustment, so we make no effort (Thamer Al-Hessou, 1978) that "the muscle needs a certain rest period, and this is a normal and physiological reaction to the muscle's need for nutrition after exertion (11:100).

(Table 4) Shows the results of the tests for the control and experimental groups of the variables in question.

Variables	Pre -Test		Post - test		T Calculated	Level of error	Significance
	Average Calculation	±SD	Average Calculation	±SD			
Strength of back muscles	8.71	2.94	7.30	1.96	6.78	0.001	moral
Flexibility of the backbone	7.000	1.87	3.20	1.28	4.96	0.000	moral
Flexibility of the left side of the spine	26.00	3.12	24	3.96	4.32	0.000	moral
Strength of back muscles	16.42	2.32	13.80	2.64	6.42	0.000	moral

### Conclusions:

From the results obtained we can conclude the following:

- The training exercises under study have a great effectiveness in developing flexibility and strength which helped to relieve pain in the lower back.
- The use of electrical stimulation in addition to exercise rehabilitation is effective in the development of muscle strength and flexibility.
- The application of rehabilitation exercises did not leave negative effects on them but left a positive impact and improved quickly.

### Recommendations:

- The need to emphasize the use of rehabilitation exercises in addition to the electrical stimulation in all hospitals and physiotherapy centers.
- The need for gradual rehabilitation of injuries using physical exercises and rehabilitation, as well as the use of devices because of its obvious effectiveness.
- Conduct similar studies on other samples.
- Adoption of rehabilitation exercises used by the researcher in the centers of physical therapy and hospitals.

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