A REHABILITATION PROGRAM WITHIN THE AQUEOUS ENVIRONMENT AND SOME THERAPEUTIC MEANS TO REDUCE LOWER BACK PAIN FOR BODYBUILDERS

Karrar Abdullah Mohsin Al–Dahsh1, Sadeq Jaber Mtani2, Duaa Awadh Attwaan3
1,2,3 Department of Education and Sports Sciences
Kut University College
karrar.abdullah@alkutcollege.edu.iq; sadeq.j.mtani@alkutcollege.edu.iq
duaa.awadh@alkutcollege.edu.iq

ABSTRACT

Injuries, health problems that occur with players, whether large or small, are among the most important problems that bodybuilders suffer from because any injury stops all physical exercises, and spinal injury is considered a serious injury because the spine is the central axis of the human body and is linked to some muscles The back, directly or indirectly, and despite the progress in the field of sports medicine and how to diagnose and treat, but the problem of infection with lower back pain is still considered a problem of the times that threatens many bodybuilders who suffer from the increased lower back pain that doubles dramatically, and this blame It has become a hindrance for bodybuilders who aspire to develop their levels, And through the researchers' observation that some bodybuilding trainers do not set up a rehabilitation program to restore the player to his good state of health, so the researchers decided to study the lower back pain among bodybuilders and work to reduce this blame through the application of a rehabilitation program within the water medium and some treatment methods.

Keywords: aqueous environment, rehabilitation, therapy, bodybuilding.

I. INTRODUCTION

Seeks search restore efficiency and functional motor for the lower back of the bodybuilders through the application of a rehabilitation program within the aqueous medium and some therapeutic methods and study its impact on, muscle strength fixed to the back muscles, and muscular endurance to the muscles of the back, and the range of motion of the spine, and balance hard and motor and ease the degree of pain and here it should be noted that T. differences found statistically significant between the tribal measurement and telemetric in both muscle strength fixed to the back muscles - muscular endurance in favor of telemetric under the influence of the program Oltohli within the aqueous medium and means therapeutic, and there are statistically significant differences Between pre-measurement and post-measurement in the kinetic range in favor of post-measurement under the influence of the rehabilitation program within the aqueous medium and treatment methods, and there are statistically significant differences between pre -measurement and post-measurement in fixed and kinetic balance and degree of pain in favor of post-measurement under the influence of the rehabilitation program within the aqueous environment and treatment methods.

II. METHODOLOGY

The researcher used the experimental approach using one group (control and experimental).

Research Fields

- **Spatial Field:** Pre and post measurements were made for the research sample, and the rehabilitation program was applied within the water medium and treatment methods in the Red Crescent Hospital, physiotherapy centers, community physical strength centers and private homes for some of the injured from the research group.
**Time Field:** The application of both the study and the basic reconnaissance during the period 6 / 3 /2020 - 15 / 7 /2020

<table>
<thead>
<tr>
<th>M</th>
<th>Content</th>
<th>From</th>
<th>to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exploratory study</td>
<td>6/3/2020</td>
<td>8/3/2020</td>
</tr>
<tr>
<td>2</td>
<td>Tribal measurements</td>
<td>7/5/2020</td>
<td>9/5/2020</td>
</tr>
<tr>
<td>3</td>
<td>Implementation of the program</td>
<td>11/5/2020</td>
<td>12/7/2020</td>
</tr>
<tr>
<td>4</td>
<td>Dimensional measurements</td>
<td>12/7/2020</td>
<td>15/7/2020</td>
</tr>
</tbody>
</table>

Table No. (1) The period of application of the research to the study sample

**Research procedures**

**Research samples:** The sample was deliberately chosen from athletes bodybuilders with lower back pain (the lumbar vertebrae of the spine) and they numbered 10 injured, in addition to 3 bodybuilding athletes with the same injury and by the intentional method for conducting an exploratory study on them and training on measurements and how to standardize the pregnancy used in the rehabilitation program within the middle And thus the total number of the sample became 13 injured athletes, and they were chosen from the clubs of Waist Governorate (Al-Kut - Wasit - Al- Hay)

**Conditions for selecting the research sample**

1. The consent of the sample members to participate in the application of the research procedures
2. That the injured person suffers from lower back pain (the lumbar region)
3. The patient is free from the diseases that hinder the application of the program
4. The ability to respond and follow up on work and the ability to regularly apply the program, the water medium, and the treatment methods

**III. LITERATURE REVIEW**

1. Measurements used

**Physical measurements**

- Maximum static strength of the core and thigh muscles
- Muscular endurance of the working muscles on the spine (Ahmed, 1996)
- Motor range of the spine (Ahmed, 1996)
- Static and motor balance of the affected part (El-Shazly, 1995)

2. Functional test

**Measure the degree of pain (Roy, 1990) Annex 3**

**Steps to build exercises in aqueous environment**

1. The goal of the exercises: The rehabilitative program within the aqueous environment aims to rehabilitate a group of muscles related to the improvement of the lumbar region injuries for the individuals of the research sample
2. The foundations of building exercises for the aquatic environment

   a. **Field visit:** Many physiotherapy and sports medicine centers and hospitals were visited in Wasit Governorate, with the aim of getting acquainted with the nature of the types of exercises used in the rehabilitation of patients in the lumbar region and the period of time required to perform rehabilitation programs for the injured.

   b. **Identify muscle groups important to the lumbar region**
c By referring to the scientific references, Osama Riyadh 1985, where they have been identified and approved by the experts

1-Lower back muscle group (lumbar region)

2-Muscle group corresponding to the lumbar region (abdominal and pelvic muscles)

Anterior and posterior thigh muscle group and calf muscles (Riaz, 1985)

**Determine the important physical components of the lumbar region**

1 -Development and improvement of muscle strength of the muscle groups associated with injury

2 -Development and improvement of the muscular endurance of the muscle groups associated with injury

3-Improved range of motion

4-Development of static and dynamic equilibrium

The stages of the proposed rehabilitation program (inside and outside the aqueous environment) (attached)

**The first stage:** includes exercises inside the watery medium and the time period for this phase is two weeks a day with (6) training units and the first phase was applied to the research sample.

**The second stage:** It includes exercises inside the aqueous environment, and the time period for this stage is (14-15) days

**The third stage:** It includes exercises inside and outside the aqueous environment and the time period for this stage is 15 days

**Exploratory study**

The researcher conducted a prospective study on 6/3/2020 - 8/3/2020 in order to:

- Numbers of tools used in measurement
- Record the time spent in recording data
- Ensure that the location of the measurement is suitable
- Determine the muscles to be measured according to expert opinions - scientific references
- Training of assistants on how to measure
- Identify problems in implementing the rehabilitation program

**Basic study**

- Was conducted tribal measurements for each of the sample in the period 7/5/2020 - 9/5/2020 and for each individual sample of members of the search unit and record the results of measurements in the form its own.... The implementation of the program on the experimental group including Covers of exercises rehabilitation center within the water and means of treatment in the period from 11/5/2020 - 11/7/2020

- Measurements A of dimensionality after the end of the application of the program proposed in two days 1 2/7/2020 - 1 5/7/2020 and the same foundations that were in the conduct of tribal measurements.
IV. RESULTS

Presentation of the results, the arithmetic mean, the standard deviations and (t) the computed and the significance of the differences for the pre and post variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tribal</th>
<th>after me</th>
<th>T</th>
<th>Tabular</th>
<th>Significant significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The maximum strength of the back muscles</td>
<td>Installed to the trunk</td>
<td>20.299</td>
<td>32.279</td>
<td>30.157</td>
<td>Moral</td>
</tr>
<tr>
<td></td>
<td>The material for the trunk</td>
<td>23.803</td>
<td>35.855</td>
<td>34.744</td>
<td>Moral</td>
</tr>
<tr>
<td>Muscular endurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.663</td>
<td>19.489</td>
<td>32.431</td>
<td>Moral</td>
</tr>
<tr>
<td>Motor range</td>
<td>In front of me to bend the torso</td>
<td>19.521</td>
<td>31.328</td>
<td>41.369</td>
<td>Moral</td>
</tr>
<tr>
<td></td>
<td>Posterior to bend the torso</td>
<td>18.103</td>
<td>23.071</td>
<td>13.399</td>
<td>Moral</td>
</tr>
<tr>
<td></td>
<td>Moving</td>
<td>10.339</td>
<td>18.405</td>
<td>35.913</td>
<td>Moral</td>
</tr>
<tr>
<td>Degree of pain</td>
<td></td>
<td>143.364</td>
<td>177.104</td>
<td>47.904</td>
<td>Moral</td>
</tr>
</tbody>
</table>

The degree of freedom is 0.05

It is evident from the above table that the maximum strength of the back muscles (stabilizing the trunk) reached the arithmetic mean of the pre-test (20.299), the standard deviation (0.832) and the post tests, the arithmetic mean was (32.279) with a standard deviation (1.004) and (T) was calculated for the differences between the pre-tests and the tests. The dimensional (30.157), which is greater than its tabular value of (1,833), is in favor of the posttest. As for the maximum strength of the back muscles (the material for the torso), the arithmetic mean of the pre-test was (23.803) and the standard deviation (0.968). The arithmetic mean value was (35.855) with a standard deviation (0.650) and (t) calculated for the differences between the pre -tests and the post-tests (34.744), which is greater than its tabular value of (1.833) in favor of the post-test, as for muscle endurance, the arithmetic mean value of the pre-test reached (11.663) and the standard deviation (1.056), and the arithmetic mean of the test reached The dimensional (19.489) and the standard deviation (0.683) and (T) were calculated for the differences between the pre-tests and the dimensional tests (32.431), which is greater than its tabular value of (1.833) For the benefit of the post tests, as for the range of motion, the arithmetic mean of the exercise for the front bending of the torso reached (19.521) with a standard deviation (0.459) and the arithmetic mean of the posttests was (31.328) and with a standard deviation (0.725) and (T) was calculated for the differences between the pretests and the posttests (41.369) which is greater than its tabular value of (1.833) and for the benefit of the post-tests. As for the range of motion, the arithmetic mean of the posterior torso bending exercise reached (18.103) and with a standard deviation (0.809) and the arithmetic mean of the posttests was (23.071) and with a standard deviation (0.846) and it was (T) calculated differences between tribal tests and tests posteriori (13.399), the largest of Tabulated value amounting to (1.833) and in favor of the post tests, either balance reached the arithmetic mean of the exercise hard balance (12.592) and standard deviation (0.615) and the arithmetic mean of the tests posteriori (21.557) and standard deviation (0.845) and (T) calculated for the differences between the pre -tests and the post-tests (39.704), which is greater than its tabular value of (1.833) in favor of the tests Dimensionality, either balance reached the arithmetic mean of the exercise moving balance (10.339) and standard deviation (0.740) and the arithmetic mean of the tests posteriori (21.557) and standard deviation (0.742) and was (t) calculated for differences between tribal tests and tests posteriori (35.913), the largest of its value Tabulated The amount of (1.833) is in favor of the post-test, as for the degree of pain, the value of the arithmetic mean of the pre-test was (143.364) and the standard deviation (1.900) and the arithmetic mean of the post test was (177.104) and the standard deviation (1.684) and (T) was calculated for the differences between the pre -tests and the post-tests (47.904) which is greater than its tabular value of (1,833) and in favor of the post tests.
V. DISCUSSION

Table No. (1) showed that the differences between the pre-measurements and the dimensional measurements, and the existence of differences between the two measurements and in all the tests, were in favor of the dimensional measurements, and the researchers instructed that these results came through the effect of the water rehabilitation program and some treatment methods, which led to the improvement in the tests, the maximum strength, muscular endurance and range Movement and degree of pain among bodybuilders because the therapeutic rehabilitation program works to restore the functional competence of the injured and return to practicing all the requirements of movement and functional performance and to maintain the physical fitness of the healthy parts of the body and works to prevent injuries and recurrence (Ahmed, 2009), and the researchers used Hydrotherapeutic programs, the fact that water therapy has an effective role in restoring the body's muscles to their normal state after recovery from the injury because the water therapeutic exercises help to treat muscle weakness in the affected or paralyzed limbs by pushing heat and cold that work to create mechanical and chemical stimulating events for the therapeutic effect and work. It increases spinal flexibility, restores muscle function and ligament strength And restore improve breathing (Brad, 2010), And saw the researchers that the therapeutic means of water and assistance have had a role in that improvement occurred in the players building objects and confirmed their studies through similar studies that have confirmed the need for water treatment study of Mervat Youssef (2012) stressed the importance of water exercises and the use of water treatment in the rehabilitation of the injured athletes in order to strengthen the muscles working on the injured part and access to the motor range and compatibility muscle in places of injury in the body and raise the efficiency of the ability of muscle to the level of performance requirements and job to prevent the occurrence and recurrence of infections (Mervat, 2012), is evident from the balance tests and tribal dimensional measurements that showed results in favor of Dimensional measurements due to the effect of the water program and the auxiliary means for this, since the functional and kinetic efficiency of the lower back vertebrae was restored, as the program led to an improvement in muscle strength in the positive for of the flexor, extensor, abductor and adductor muscles in the motor range and in the degree of pain from the extension and bending (4). The researchers due to the priority of improvement that has occurred in the sample and it is not the importance of the program rehabilitation therapeutic water assistance as means of exercise that lead in the aqueous medium alleviate the weight for the full individual and saves the player from injury caused by a collision with the ground solid and away the pressure. The joints of the body also stimulate blood circulation, and therapeutic water exercises were an effect on injured bodybuilders, due to the speed of recovery from injuries.

VI. CONCLUSION

In light of the objectives and results of the research and within the limits of the research sample and its characteristics, and based on the statistical treatments, the proposed rehabilitation program, the available capabilities of the tools used, the presentation and interpretation of the results, the researcher could reach the following conclusions:

There are statistically significant differences between the pre and post measurement in favor of the post measurement for the experimental group through:

1.-The degree of pain decreased significantly more than in the control group, with a clear improvement in measuring the range of motion of the spine

2.-Improvement in muscle strength measurements of (trunk - thigh) muscles with improvement in static and dynamic balance (for left foot - right foot)

3.-A clear development of the muscular endurance of the muscles working on the spine

Recommendations

In light of the objectives and assumptions of the research and within the limits of employing the sample and the statistical treatments used, and through the results of the experiment and discussing them, the researcher can connect with the following:

1.-Guidance on the proposed rehabilitation program when rehabilitating the injured. The need to know the degree of pain in all stages of measurements during the implementation of the proposed program
2. Paying attention to the prevention of infection in the lumbar region, by following exercises to strengthen the working muscles on the spine.

3. Continuing to perform therapeutic exercises even after the rehabilitation program ends.

REFERENCES
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3. Ahmed Helmi Saleh, 2009, massage in pain back and medicine alternative, library Madbouly, i 1, Cairo.
6. Osama Mohamed Mahmoud Arab, 2013, to improve the efficiency functional column spine after surgery installation area of cotton, a message Master is unpublished, Faculty of Education Sport Boys, University of Alexandria.

Annex data

The first stage exercises inside the aqueous medium

<table>
<thead>
<tr>
<th>M</th>
<th>Exercise</th>
<th>Distress</th>
<th>Time or count</th>
<th>Groups</th>
<th>Repetition</th>
<th>Rest in between Groups</th>
<th>Rest in between Repetition</th>
<th>Description of the performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Standing in the water) Raise the leg to the side and stand still</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Maintain body balance. The support leg is fixed. Performance within the limits of pain.</td>
</tr>
<tr>
<td>2</td>
<td>(Standing in the water) Pulling a knee in the direction of the chest</td>
<td></td>
<td>15 w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pulling and maintaining the stability of the body. The support leg does not move. Pulling the foot to the chest. Performance within the limits of pain.</td>
</tr>
<tr>
<td>3</td>
<td>(Standing in the water) Lift the metatarsals up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stand on the metatarsals. The body is in the upright position. Maintain body balance.</td>
</tr>
<tr>
<td>4</td>
<td>He walked in the water</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Raise the two metatarsals when walking. Not naturally in the water. Moving the muscles of</td>
</tr>
</tbody>
</table>
### Phase II exercises within the aqueous medium

<table>
<thead>
<tr>
<th>M</th>
<th>Exercises</th>
<th>Distress</th>
<th>Time or count</th>
<th>Groups</th>
<th>Repetition</th>
<th>Rest in between Groups</th>
<th>Repetition</th>
<th>Description of the performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Standing in the water) Jump up and back one leg forward and the other back and vice versa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bend the knees and swing the hands Jumping up and maintaining balance</td>
</tr>
<tr>
<td>2</td>
<td>(Floating in the water) with the stem wrapped</td>
<td>15-20times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Straightening the body when floating Wrap the torso and keep the body straight Performance within the limits of pain</td>
</tr>
<tr>
<td>3</td>
<td>(Standing in the water) Tipping the trunk forward and backward</td>
<td></td>
<td></td>
<td>3</td>
<td>3-4</td>
<td></td>
<td></td>
<td>The legs opened at chest level Putting hands on the torso</td>
</tr>
<tr>
<td>4</td>
<td>(Floating in the water) One arm stroke</td>
<td>10-15times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-floatable and caught the bar by hand -straightening your body moving with alarm</td>
</tr>
<tr>
<td>5</td>
<td>He floated on the back with the two leg strokes</td>
<td>15-20times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hold the bar with your two hands The head is out of the water The water hit the two men back-to-back</td>
</tr>
<tr>
<td>6</td>
<td>(Standing in the water) Walking on my heels</td>
<td>10-</td>
<td>3</td>
<td>3-4</td>
<td></td>
<td></td>
<td></td>
<td>Raise the metatarsals and rest on the heels Maintaining body balance when walking</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
<td>Distress</td>
<td>Time or count</td>
<td>Groups</td>
<td>Repetition</td>
<td>Rest in between</td>
<td>Description of the performance</td>
<td></td>
</tr>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>(Floating on the back) Bend the knees to the chest and push</td>
<td>15times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Holding the bar by hands and floating on the back Movement from the thigh joint and knees</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>(Standing in the water) tilted torso sideways and steady</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Performance within the limits of pain Putting hands on sides with torso tilted</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>(Standing in the water) Right hand touching the left leg and back</td>
<td>15-20times</td>
<td>3</td>
<td>3-4</td>
<td></td>
<td></td>
<td>He raised the man straight inward Maintain balance</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Walk into the water and change direction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moving all the muscles of the body when walking</td>
<td></td>
</tr>
</tbody>
</table>

Phase III exercises within the aqueous medium

<table>
<thead>
<tr>
<th>M</th>
<th>Exercise</th>
<th>Distress</th>
<th>Time or count</th>
<th>Groups</th>
<th>Repetition</th>
<th>Rest in between</th>
<th>Description of the performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Standing in the water) Interchange with knees up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stand in the water When a whistle is heard, the knees are raised and alternately raised</td>
</tr>
<tr>
<td>2</td>
<td>(Floating on the belly) blows the legs</td>
<td>20-25s</td>
<td>20-25s</td>
<td></td>
<td></td>
<td></td>
<td>Hold the edge of the bed and float on the belly The two men exchanged blows</td>
</tr>
<tr>
<td>3</td>
<td>(Floating on the back) Arched back to the side and steady</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Bar catches Float on the back Tilt of the trunk to the side and stability</td>
</tr>
<tr>
<td>4</td>
<td>(Standing in the water) Running and changing direction</td>
<td>4-5</td>
<td>4-5</td>
<td></td>
<td></td>
<td></td>
<td>Take a running position in the water Running into the water and changing direction when you hear the beep</td>
</tr>
<tr>
<td>5</td>
<td>(Standing in the water) Jump up</td>
<td>20-25s</td>
<td>20-25s</td>
<td></td>
<td></td>
<td></td>
<td>Take a standing position Jump up and back</td>
</tr>
<tr>
<td>6</td>
<td>(Standing in the water) Scissor’s exchange feet lift</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Stand in the water The two men were tossed forward alternately</td>
</tr>
<tr>
<td>7</td>
<td>(Standing in the water) trunk rotation</td>
<td>4-5</td>
<td>4-5</td>
<td></td>
<td></td>
<td></td>
<td>Stand in the water Wrap the stump in a circle</td>
</tr>
</tbody>
</table>
Standing in the water

Running with a rubber band resistance

<table>
<thead>
<tr>
<th>(Standing in the water) Interchange of raising the knees on the chest</th>
<th>20-25s</th>
<th>20-25s</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Standing in the water) Fixing a weight on the feet and jumping</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Stand in the water
Tie a resistance tape to the waist
Running

Stand in the water
Raising the knees on the chest alternately

Stand in the water
Putting weight on the legs
Jump up with weight and back

Attachment No. (3) for research measurements

Measurement of the maximum static strength / static muscle strength of the material muscle groups of the trunk

The primary position takes the casualty in a long sitting position facing the mind of the wall, the trunk is vertical, the feet are completely extended, and the support prevents the feet from moving forward and the legs are fixed near the knees with a belt to prevent them from moving or with the help of a person who performs the fixation process and the patient wears a circular belt around the shoulder area connected by a dynamometer in front of the chest and fixed Mind the wall or anything steady, and two hands in front of the chest.

The performance description: provides the patient with a force for the stump, so the cursor moves to the device equivalent to the maximum constant force of the material groups on the trunk, then the device reading is taken.

The recording is three attempts and the best reading is taken to the nearest half a kilo (Ahmed, 1996)

- Measurement of static strength of the trunk flexor muscle groups

The primary position takes the injured person in a long sitting position on the measuring table facing the mind of the wall with the back, the torso is vertical, the feet are along their length, and the seat cushion prevents them from returning to the back and fixing the knees with a belt to prevent them from moving.

Performance description the patient bends the trunk strongly and moves the device index to the equivalent of the maximum constant force of the flexor muscle group working on the torso, then a reading of the device is taken.

Registration is three attempts, the best reading is taken to the nearest half a kilo (Ahmed, 1996)

- Balance test / static balance test (hockey test)

The goal of the test - measuring the ability of the individual to the equilibrium constant (static)

Measuring instruments / stopwatch

Performance Specifications / The victim stands on the two metatarsals with arms forward and eyes closed

Conditions and instructions for performance - the casualty tries to stay as long as possible on the previous situation

- Not touching the heels to the ground during the test

- The time is counted from the beginning of the heels being raised from the ground and ends if any movement of the body takes place that results in the loss of the previous position


Dynamic balance test (Felchmann test)

The objective of the test is to measure an individual’s ability to achieve dynamic equilibrium
Measuring instruments  Stopwatch - The Fleischmann dynamic balance meter is a flat rectangular wooden planter 60 cm in length, 39 cm in width and 2.5 cm in thickness, with a bottom centered on a wooden base that divides the rectangle into two equal squares, 5 cm in width and 10 cm in height.

Performance Specifications The individual stands on the upper surface so that one of his feet is placed and then supported with two hands on the researcher's shoulder to place the first foot parallel and on the second half of the flat after taking a balanced position on the crossbar, his hands are removed from the shoulder of the researcher who directly operates the stopwatch.

Performance conditions - the sufferer tries to stay in the previous position for as long as possible

-Do not touch the ground with any part of the body, or touch the ground with the wooden surface

- The time is calculated from the time a person's hand left the laboratory’s shoulder until his imbalance and touching a part of the surface of the Earth with any part of his body

Recording - the longest period of time (Ahmad, 1996)

- Muscular endurance test / leg elevation test at a 45° angle from lying down

Objective - measure the static muscular endurance of the abdominal muscles

Tools - Bed - Stopwatch

Performance specifications (recumbent): Raise the two legs together at a 45° degree angle and stability

Conditions in the test 1- Maintaining the straightness of the knees

The test time starts from when the legs are raised to when the legs are lowered

A recording - the maximum time to the nearest 1/10 seconds.

- Motor range test / Forward motor range test for trunk bending

Objective of the test - to measure the flexibility of the spine from bending forward

Tools - a tape measure - a flow mister pen Performance specifications - stopping the patient erect and the tester to the side where he marks the place of contact with the middle finger on the thigh, the patient bends the torso forward and slides the hand on the thigh and puts a second mark, the laboratory measures the distance between the two marks and records

Conditions not to bend the knees, perform the measurement within the limits of pain

Logging - calculate the distance between the two marks

- Measurement of the motor range of the posterior torso bending

The objective of the measurement is to measure the flexibility of the spine from bending back

Measuring Tools Tape Measure - Pen Flow Master

Performance Specifications - Stand upright against a wall

- Place a mark on the wall that touches the casualty's chin

- The patient returns the stump as far back on the wall as possible

Performance Conditions - Stabilize the tub to prevent it from being moved backwards

- Perform the measurement within pain limits and gradually
-Do not push the wall with your hands.

**The recording** is the distance between the mark on the wall and the chin (Ahmad, 1996)

**Functional test to determine the degree of pain associated with range of motion / straight leg elevation test:** The functional test is of personal use in cases of any dysfunction in the lower back region, as when the affected leg is lifted gradually, tension begins on the auricular nerve, which leads to the occurrence of severe pain, which indicates the pressure of the nucleus on the spinal cord.

**And this test was done as follows:** The patient lies on the back on the measuring table, taking into account the chest and torso are fixed with fixation belts - and the middle of the gauge is fixed on the iliac bone so that one of his arms is down and the other is up. The patient raises the legs up and makes an angle

**Record:** Measure the angle between the pelvic bone and the middle of the thigh 8

**Attachment No. (4) Therapeutic aids / infrared:** They are electromagnetic rays with a wavelength ranging between (270 nanometers - 1 millimeter) and are used to heat the affected area, increase blood flow to it, relieve pain, as well as stimulate the healing process.

**Functional electrical stimulation (FES) Alarm, electric or treatment, electric:** Electrical stimulation is one of the physical therapy methods that are used to stimulate the muscles of the body and restore their vitality, as it leads to stimulation of the muscles, which leads to their contraction in different mechanisms without the intervention of the affected individual in those contractions, and it is also a form of electrical currents that work on the contraction of the muscles, a contraction similar to the natural contraction of the muscles.