

The Effect Of Rehabilitation Exercises With Fixed Contracting In Muscle Efficiency The Thigh For The Return Of Football Players To The Stadiums After The Partial Rupture Of The Articulated Ligament Of The Knee Joint

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Abstract

The aims of the research to the research to prepare rehabilitation exercises with fixed contraction and identify their impact on the efficiency of the thigh for the return of football players to the stadiums after the partial rupture of the front articulated ligament of the knee joint, so that the researcher assumes a statistically significant difference between the results of the tribal and dimensional tests of the efficiency of the muscles of the soccer players after operations Partial rupture of the anterior articulated ligament of the knee joint, and the experimental approach to the design group design relied on a sample chosen intentionally in an inventory style Comprehensive by (100%) of the players of the Iraqi Premier League football clubs in Baghdad Governorate clubs, who numbered (8) players who have had partial rupture of the front articulated ligament of the knee joint and underwent similar programs to rehabilitate them, and the person specialized doctors are similar to their rupture Partial for the front articulated ligament and its level, they were tried for a period of (8) consecutive weeks, and after completing it, the results were addressed with the SPSS system to be extracts and applications in that it is exercises Rehabilitation with fixed contraction is suitable for football players for the stadiums after partial rupture of the front articulated ligament of the knee joint, and the application of the rehabilitation exercises with fixed contracting helps increase the efficiency of the front -to -anterior muscles (the muscles of the material for the knee joint), the background muscles (the second of the knee joint), and internal thighs muscles , And the background leg muscles operating on the knee joint, with football players for the stadiums after partial rupture of the front articulated ligament of the joint The kneeling, and helps in their return to the stadiums after partial rupture of the articulated ligament of the knee joint, and it is necessary to adopt muscle measuring technology before making sure of the complete recovery, without risking these muscles in physical and motor tests.

Keywords: rehabilitation exercises, fixed contraction, muscle efficiency, partial rupture of the anterior articulated ligament of the knee joint.

Research problem:

The rehabilitation of sports injuries aims to return the injured person to the closest thing to the normal condition, as it is the process of restoring general fitness and the ability to perform and skill before the injury,

which is the most difficult process, meaning that the most methods that secure this goal are to support both the fields of sports and education Physical and Sports Science in developing the injured rehabilitation programs and its safe return

to society '(Jalal, 2009), as it is the ' process of restoring the full natural and functional form of the part of what it was before the injury occurred and remove the damage caused by this in the shortest possible time'. (Thomas * Will, 2010), When treating the infection is a natural treatment, the goals of physical therapy are by stopping and mitigating pain, reducing or reducing swelling associated with infection, reducing associated and evaluating deformities, strengthening the muscles of the body and maintaining joint flexibility to prevent muscle weakness and atrophy and determine muffilia, and prevent many complications that accompany the injury, Maintaining fitness, maintaining the functions of the unaccompanied devices, raising physical competencies, increasing the vitality of tissues and urging them to use their potential energy to accelerate healing, speeding up skills and returning to sports activities' (Hammadi, 2017), Rehabilitation exercises are also defined as 'the process of improving health or the affected part of performance and physical part or adjusting

and rehabilitating deviations, and it is possible to practice and continue and avoid fixed beating or some negative movements and unhealthy activities'. Return the natural basis functions of the affected part, the most important of which is the restoration of the work of the alleged to the affected part, improving the kinetic range of the affected joint, restoring the correction of the motor memory programs of the affected part, developing the work of the muscular mechanics of the affected part, and restoring the muscular nervous control of the affected part '. (Potter, 2006) Where are the types of injuries that occur to all the player, during exercise or sports competitions in local and international championships and for many causes, and the injuries of ligaments, muscles and tendons are ranked first, while knee injuries occupy the second place. The knee is one of the types of sports injuries that are characterized by any injury that contradicts the movement of the knee joint, and it can range from excessive expansion to muscle rupture or tissues in the knee '.

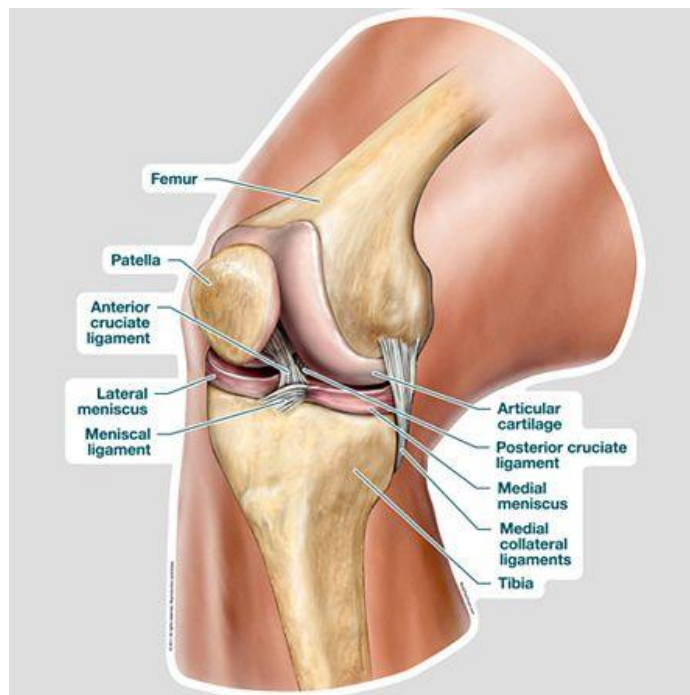


Figure (1) shows the functional autopsy of the knee joint

The most important muscles that work on the knee joint are first: the front -to - anterior pelvic muscles (the muscles of the material for the knee joint) is represented by the large thigh muscle of the substance of the knee, and it forms a large muscular protein mass to protect the front part of the thigh bone, then the wet, wet, ecclesiastical, and middle muscles come. The quadrilateral muscle is divided into four main sections, each with a specific name, which is: the large straight thigh muscle: occupies the middle of the longitudinal thigh, and covers with the other three thigh muscles, that muscle arises from the bone of the hip), and it is called this name because of its course The rectal and the other three muscles are under the straight thigh muscle and arise from the thigh bone body and coverage of the large and small roundabout to the linguistic and brutal thighs. The wild hardware: it is located on the zebra (outer) side of the thigh bone. The widening muscle: lies on the forgotten side of the thigh bone. And the middle hard muscle: it is located between the amplified muscle, and the middle muscle on the front of the thigh bone (i.e. the top or the front of the thigh), but deeper than the straight thigh muscle, usually it cannot be seen without incision or cut the straight thigh muscle. (Explicit And Abdel -Razzaq, 2018), 'Second: The Background Back Muscles (the second for the detailed The knee), and thirdly, the internal thighs muscles, and fourth: the background leg muscles operating on the knee joint, as it takes the duration of rehabilitation programs to recover completely in cases of partial rupture in the cruciate ligament of the knee joint for a relatively long period and depends on adhering to the instructions of the attending physician, and limiting any moves Violence for the joint '. (Leadbetter, 2009) as he is subject to football players after they are subjected to partial rupture injuries to the front of the knee joint to the treatment programs It continues to a period

of time between (3-4) months, until their return to the stadiums must be according to the fully symmetry of the injury, especially since football players often perform the chains of all kinds, and that these connotations are inherently dependent on a detailed movement The knee, in degrees that are directly proportional to the level of explosive force that the man's similar recovery produces, and as is well known in mathematical rehabilitation that most of the muscles around the affected joints suffer from a lack of efficiency after performing the surgical interference operations of the joints that are exposed to damage, and this clear reality raised the interest of the researcher in its observation of this phenomenon to be to be The search problem is directed towards an attempt to accelerate the return of the players to the stadiums, so that the research aims to Prepare rehabilitation exercises with fixed contraction and identify their effect on the efficiency of the thigh for the return of football players to the stadiums after the partial rupture of the front articulated ligament of the knee joint, so that the researcher assumes the existence of a statistically significant difference between the results of the tribal and dimensional tests of the efficiency of the muscles of the soccer players after the partial rupture of the Rabat The front crucifixion of the knee joint.

Study methodology:

The problem of this research imposed the researcher's adoption of the experimental approach, which is defined as 'a pattern of research controlled by the researcher with one or more variables to make a deliberate and seized change of the specific conditions and explains the results of this change'. The arbitrator of the tribal and post tests

Study Society and its sample:

The human borders of this community are the players of the Iraqi Premier League

clubs in the Baghdad governorate clubs, which numbered (8) players who have had partial rupture of the front articulated ligament of the knee joint and underwent similar programs to rehabilitate them, and the person specialized doctors are similar to their partial rupture of Rabat The front crucifixion and its level according to the results of the Magnetic Resonance Imaging (MRI) (MRI), the researcher went to their studies for reasons that receded as they are the infection society observed in a problem The current study themselves, for the duration of (5/7/2021 to 10/9/2022), after taking written offices to volunteer to implement rehabilitation exercises with fixed contract Old age variables, age of injury, and weight in order to maintain the inner safety of the experimental design

Measurement Tools and Test:

The (Skulpt) Test to measure muscle adequacy: (DCRAINMAKER, 2006)

-Specifications of the device: The American -made device from (Skulpt), works with various MQ technology in a way that calculates what is measured in most current devices such as BMI measuring (BMI) that is totally based on mass and length as essential workers in its arithmetic equation for this indicator, (Skulpt) works by sending static electrical charges at a few levels specifically directed to the muscle to be measured, to measure muscle adequacy (Muscle Quality) By (12) a header containing a shipment (electrodes) that deals with various frequencies resulting from it, and its return to it after receiving the tissues, muscles, fiber, fat cells and bone for these frequencies, as shown in Figure (2), as the stadium muscles can be known as a result of frequent exercise or continuous play.

-The aims of the test: measuring the body's skeletal adequacy of the body.

-Procedures:

- 1- The device is operated and connected to the Internet on the (Skulpt) application installed on a type mobile device. (I Pad Apple).
 - 2- The (Skulpt) device is connected to the (I Pad Apple) device by (Bluetooth) to show the program interface to identify the muscles to be measured, divided into (12) left-right muscles left in the I Pad Apple screen.
 - 3- The muscle to be measured is chosen, as it appears in the correct location in its special window in the screen (I Pad Apple), then the testimony is moisturized the electrodes of the (Skulpt) device with the gel.
 - 4- The test is scanning the tested muscle to be measured, which is in a state of relaxation and moisturizing it with the gel as well, to allow the shipment of (electrodes) to pass through this specified muscle.
 - 5- Putting the (Skulpt) device from the side of (electrodes) on the tested muscle to be measured to perform the calculation, as the device works directly, fast and without prick (needles).
- Conditions: (Skulpt) device is placed on the middle of the muscle to show the special values of the muscle adequacy to be measured through the altar.
 - Registration and measurement unit: Readings are taken from the iPad Apple device directly, with a degree measurement unit of (100), and registered with the form of each experienced.



**Figure (2) shows the image of (Skulpt) from the front and back sides
And how to measure the adequacy of structural muscles**

The researcher has prepared exercises whose content includes tidal movements with fixed constant contracting and raising the man by controlling the duration of the constriction of the muscles from the conditions of lying on the back and abdomen, standing, sitting on a chair, and on half of a qualifying bed, without any resisting to be the difficulty of each qualifying exercise through prolongation. The duration of the exercise time in the fixed muscle contraction, and it started from (10) seconds with a suitable breaking between an exercise and another, and the one treatment session included (4) exercises with a principle adopting a principle Diversity in it, and the exchange of the thigh muscles according to the movement of the knee joint in each of the aforementioned positions, as it was in the first week by (6-10) repetitions in a time of (10) seconds, and in the second week by

(15-20) repetition of a time (15) seconds, and in the third and fourth week (20-30) repetition of a time (15) seconds, and in the fifth and sixth week (30-40) repetition of a time of (20) seconds, and in the seventh and eighth week (30-40) repetition of a time of (25) seconds. That is, experimentation lasted for two months in a row, and with rehabilitation therapeutic sessions for these exercises between one day and another, as there were medical recommendations accompanying the exercises. Rehabilitation, including wearing appropriate, tight clothes, and wearing medical shoes, and after the experiment ended, the score of tribal and dimensional tests was collected and the researcher has achieved its results by the social statistical bag system (SPSS), to calculate both the percentage of the percentage, the mathematical medium, the standard

deviation, and the test (T -Test for interconnected samples.

Results and discussion:

Table 1: Results of the study groups of the pretest and posttest

The tests	Comparison	mean	±SD	Mean differences	Std. Error Man.	T	sig	Ass
The front of the brilliant head	pretest	85.994	4.309	10.169	3.943	7.295	0.000	S
	Posttest	96.163	0.619					
The background of the background	pretest	84.45	2.327	11.225	2.68	11.845	0.000	S
	Posttest	95.675	0.957					
Interior thighs	pretest	84.819	2.436	13.094	2.598	14.257	0.000	S
	Posttest	97.913	0.666					
Back leg muscles	pretest	83.369	2.158	14.181	2.29	17.518	0.000	S
	Posttest	97.55	0.441					

Measurement unit: degree, n = (8), Significance Level= 0.05; t-test value is significant at P-value ≤ 0.05 df. (N-1)

Table (1) results show that the research sample has evolved with the sufficiency of structural muscles in the dimensional tests of what their results were in tribal tests, and the researcher attributes the appearance of these results to the role of the positive influence of rehabilitation exercises with fixed contracting, whose exercises were characterized by the principle of inclusion of the movement of various muscles. The thigh in the muscular work, its fixation and its opposite, each of these conditions requires a tension or muscle contraction that may be fixed or moving, which muscles do the work. Intestinal according to the duty assigned to each of them in each of the conditions of rehabilitation exercises with fixed contracting, which the researcher was keen in its content to go with modernity in sports rehabilitation according to the global determinants, which requires this matter to distribute loads to various parts of the body, which helped the conditions of rehabilitation exercises. With fixed contraction in skipping the stage of inactivity that the muscles went through in the previously universal rehabilitation

stages, so that the development of this muscle sufficiency is defined by the codified motion stability factor. As fixed muscle contraction allows the strengthening of these muscles without constitutes damage resulting from the movement of the slitting or poorly intertwined in the crosses of the muscular protein threads, as it 'when performing exercises for certain muscle groups, it results in adaptations in specific muscular areas'. (Wajdi, 2018) Also, the athletes who are subject to organized and specified programs, goals, methods, and training contents reach better results than those who are trained in random methods during the time periods designated for training times and acceptable interpretation, so it is based on physiological responses for both muscle fibers that are recruited for performance and activation Nervous, and the use of energy sources'. (Essam, 2015) It is also 'the benefits of exercises in improving both strength and muscle balance. The muscular balance on both sides of the body is the actual basis for a good texture, as it adjusts the body shape from the current position on

it to the ideal situation that should be.' .
(Muhammad, 2020)

Conclusions and Implications:

1. Rehabilitation exercises with fixed contraction suit football players for the stadiums after the partial rupture of the anterior articulated ligament of the knee joint.
2. The application of the rehabilitation exercises with fixed contraction helps increase the efficiency of the ventilation front muscles (the muscles of the joint), the background muscles (the second of the knee joint), the internal thighs, and the background leg muscles operating on the knee joint, with football players for the stadiums after operations Partial rupture of the front articulated ligament of the knee joint.
3. The application of the rehabilitation exercises with fixed contraction helps football players for the stadiums in their return to the stadiums after partial rupture of the front articulated ligament of the knee joint.
4. It is necessary to adopt muscle measuring technology before ensuring complete recovery, without risking these muscles in physical and motor tests. The foot for the stadiums after partial rupture of the front cruciate ligament of the knee joint.

References:

1. **Jalaluddin (2009)**. Al -Mudda in Sports injuries: Cairo, Al -Kitab Publishing Center, p. 331.
2. **Hammadi Mohamed Kamel (2017)**. Physiotherapy: Cairo, Road Road Library, pp. 5-8.
3. **Hamid Abdel Nabi Abdel Kazim and Fatima Hashoush Abboud (2018)**. Sports field injuries: Najaf Al -Ashraf, Dar Al -Diaa for Printing, p. 37.
4. **Explanation of Abdul Karim Al -Fadhli and Abdul -Razzaq Jabr Al -Majdi (2018)**. Anatomy and sports mechanics: Baghdad, Dar and Library of Adnan for Printing and Publishing, pp. 117-132.
5. **Adel Abdullah Muhammad (2016)**. Foundations of scientific research in the light of the amendments mentioned in (APA5), 2nd edition: Riyadh, Dar Al -Zahra, p. 48.
6. **Issam Ahmed Helmy Abu Jamil (2015)**. Training in sports activities: Cairo, Modern Publishing Center, pp. 145-147.
7. **Ammar Mazal Hatem and Ahmed Farhan Ali, (2021)**. Sports Medicine: Al -Najaf Al -Ashraf, Dar Al -Diaa for Printing, p. 14.
8. **Muhammad Al -Qat, (2020)**. Sports and Swimming Training: Cairo, Arab Center for Publishing, p. 28.
9. **Muhammad Mahmoud Abdel -Zahir (2014)**. Physiological foundations for planning training loads (steps towards success): Cairo, Modern Book Center, p. 47.
10. **Makki Fadel and Khairat Ahmed Bashir (2015)**. The effect of a proposed program for rehabilitating the fantastic thigh muscles for the first Doha Football Players in South Kordoff: The Educational Sciences Journal, Sudan University of Technology Sciences, Issue (2), p. 143.
11. **Wajdi Imad Abu Al -Roumi (2018)**. Restore fitness and sports hospitalization: Amman, Amjad Dar for Publishing and Distribution, p. 25.
12. **Leadbetter WB,(2009)**; Cell matrix response in tendon injury. Clin Sports Med,p:77.
13. **Potter. N, (2006)**; Complication and treatment during rehabilitation after ACL

reconstruction oper tech sport med, U.S.A,
p 134.

14. **Thomas Janssen and Will Wodzig, (2010);** Impact of exercise training on oxidative stress in individuals with a spinal cord injury: Eur J Appl Physiol, p.1063.