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**Isokinetic Evaluation of Shoulder Muscles Strength
For Judo Players**

***Research Submitted in Partial Fulfillment of Requirement
Master Degree in Physical Education***

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- **The introduction and the research problem:**

The most outstanding feature that distinguishes our modern age with the beginning of the third millennium is the continual competition among countries that aims at progress in various fields of life and the field of physical education and sports is one of the fields in which a lot of scientists and researchers carried out several researches and studies that aim at finding solutions to a lot of problems, so science witnesses remarkable development in different fields of sports.

According to "marosa ali hassan" (١٩٩٨), Achieving High athletic levels reflects the success of the training programs and offer a means of different methods are constantly working to pay the player to output maximum capacity, and strive sports training scientists in an attempt to reach the best ways in which work on improving the performance of the player, as the performance is the focus and source of interest in the training process

Despite scientific advancement in the sportive field at the recent period of this century and which cared for more security and safety of the players through improving the measures and ways followed in training and competition, yet injury rates are still high which leads to hindering the speed of reaching the highest levels and keeping them.

Zeinab Ali Omar (٢٠٠٨) thinks that evaluation is a process which only aims at diagnosing, and issuing judgement concerning the value of things and thoughts or responses for identifying its accuracy in terms of a certain criterion and this happens by multi ways such as surveys, observation lists, estimation balance and interviews (meetings) for collecting information to depend on it in judging the efficiency of systems and educational programmes.

The definition of **the free dictionary** (٢٠١٠) of isokinetic training that it is a kind of exercises which are performed with special equipment which offers the player dynamic resistance for movement (motion), thus the speed of performance will remain steady whatever the strength

and effort the player exerts, so the speed of motion will remain unchanged too. This equipment was developed for improving muscle strength and bearing strength and measuring it also especially after injuries for sports qualification.

Zaki Muhammad Hassan (٢٠٠٤) states that the style of isokinetic training is one of the ways of training for developing muscle strength and the isokinetic training has become more popular at recent period of the past century because it is considered effective on the most responsive ways with special sports skills.

Both **Abdel-Aziz Ahmed Elnemr** and **Nareman Al-Khatib** (٢٠٠٥) refer that the muscle strength is one of the most important physical elements due to its effect on life generally and in sports field particularly Past performance in all activities depends on how the body and muscle movement that controls the movement of the body Balanaqbad and extroversion to attract parties from topic to another and the more powerful muscles whenever such contractions more effective in addition to that the way to prevent the infection starts with the balanced development of the force on both sides of different body joints between muscles moving and muscles corresponding.

Is both "**Mohammad Hassan Allawi**" and "**Nasreddin Radwan**" (٢٠٠١), muscle strength and the need for availability of good performance because it works on the muscle tone of the body development, and the enjoyment of the players a good degree of muscle strength contributes to protect them from exposure to injuries and gain body shape and good textures as to gain muscle strength have a clear effect on the mental side of the player, it gives him a good degree of self-confidence and give it some sort of emotional poise and courage and daring.

Indicates "**Tariq Mohammed Awad**" (١٩٩٧) that judo is one of the sports that occupied a leading position among individual games which are to compete globally and Olympia and continental and

internationally where evolved considerably from the technical and tactical, legal and technical skills and physical point of a center, and it is natural that this development is accompanied by a similar development in the level of the number of the player who is the pillar of access to high levels in the sport.

And indicates both the "**Ron Angus Ron Angus**" (٢٠٠٥), "**Neil Ahlkin Neil Ohleikan**" (٢٠٠٦ m) and "**Nevin Hussein Mahmoud**" (٢٠١٠) The preparation of player Judo is based on skill and physical and psychological preparation, including the practice of this sport requires direct contact and the multiplicity and diversity of skills and different attitudes and variable during the competition (Heay) so must the players to be vigilant present mind to cope with these changes without injury to focus the bulk of thought into play plans selected and implemented to the kinetic force, deception and rotation control and subjugation and the continuity of performance needed in the Art Series operations Animations harmonious because all it represents the essence of the training process and safety.

Through the above and then inform the researcher on the many references and scientific studies on judo and it turned out, the importance of muscle strength to the muscles of the shoulder, and through access to the analysis of the London games ٢٠١٢ men found that most players prefer to perform the skills of a standing position (waza- Tachi) skills throwing from the top Nage- Waza -) and the more commonly used skills are skill (tai-otoshi) agreed with Asmarh poll expert opinion on identifying more skill to use than a standing position and was interviewed researcher for a group of trainers judo and some experts in the field of sports training of professors and specialists where were presented a questionnaire to clarify the most important joints working on the skill (Tai Aotoshy tai-otoshi) and the most susceptible to injury found that the shoulder joint core element and its one of the most joints susceptible to injury has been shown than that of the researcher that most players do not have the ability to avoid the shoulder joint as

well as the difficulty of continuing to performance injuries, prompting the researcher to evaluate the detailed movements of the shoulder, which is considered the main factor for this skill by measuring the moments of force to the shoulder joint by measuring rounding movements and abduction and recycling (for inside and abroad).

Hence crystallized the problem of this research marked by the absence of such specialized in the sport of judo in particular studies that help the coach to see moments of strength shoulder muscles, and this is why the researcher to address this problem, the study, so the researcher suggests a study entitled **Isokinetic Evaluation of Shoulder Muscles Strength For Judo Players**

- **The scientific and applicative importance of the research:**

- striding and evaluation the utmost isokinetic determination of the shoulder muscles power of the judo players.
- This research tries avoiding shoulder injuries of judo players during training and competition by knowing the utmost isokinetic determination of shoulder muscles power.
- This research opens a scope of scientific and practical studies which aim raising the level effectiveness of players, performance in judo and avoiding injuries.

- **the target of the research:**

Try to avoid injury to identify the Isokinetic Evaluation of Shoulder Muscles Strength For Judo Players

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- **The research inquiries:**

In terms of (according to) the purposes of the research, the researcher requests the following:-

- what is the utmost isokinetic determination of the shoulder muscles power of judo players?
- Are there differences of statistic survey among judo players invarious weights concerning strength (force) determinations?

Research measures :

- **Research Course (Style):**

The researcher used the descriptive style for its adequacy to the nature of this research by using the muscular evaluation of isokinetic equipment.

- **The community and sample of the research:**

The community of the research was selected deliberately among judo players of first class players who are recorded in the Egyptian Association of judo and they were chosen from the following clubs.

- Police sports Association club 9 players representing weights of judo sport (two players of 60 kg weight) (one player of 66 kg weight) (one player of 73 kg weight) (two players of 81 kg weight) (one player of 90 kg weight) (one player of 100 kg weight) and (one player of over 100 kg weight).
- Esco sports club 4 players representing weights of judo sport (one player of 66 kg weight) (one player of 90 kg weight) (one player of 100 kg weight) and one player of over 100 kg weight).
- ShebeenElkom Stadium 8 players representing weights of judo sports. (one player of 60 kg weight) (one player of 66 kg weight) (two player of 73 kg weight) (one player of 81 kg weight) (one player of 100 kg weight) (one player of over 100 kg weight).

- **Means and tools of collecting the research data:**

- **forms and questionnaire (Survey) of experts and interviews:**

- Identify the most detailed form to use and prone to injury under study.

- the form of identifying of the studied skill.
- form of recording (registering) the data of study sample.
- interviews with the trainers and players to benefit from their experience.

➤ **the tools and equipment used in the research:**

- the restameter for measuring the height and weight estimated by (the centimeter and the kilogram).
- The isokinetic Bidoex[™] for measuring the muscle performance equipped with a computer, a screen and a printer .

➤ **Isokinetic Dynamometer (muscle performance testing).**

considered the modernist (newest) device in its pattern all over the world in analyzing the muscle performance.

➤ **Tests used in the research.**

- First test (abduction and adduction) Without gravity..
- Second test (rotation angle 90°) Without gravity..

• **The preparatory steps of the research.**

Exploratory experience:

- Date of conduct: 20/07/2018 m
- **Location:** isokinetic Laboratory, Faculty Physical Therapy, Cairo University
- **The goal of the experiment:** Recognize the validity of the place and its relevance to perform the measurement. Insurance through the sample transport to the place of the application procedure. Learning about the possibilities in terms of how to make the application. Determine the conditions to be measured to develop its own protocol, so when you entered and stored in the device before the start of measurement
- **Procedures to achieve the goal:** Was conducted several interviews with players and introduce them to the aim of research in terms of measurement requirements and objectives of which are even

avoiding errors that may appear after the training to conduct measurements on the players

- **. The most important results of the pilot experience:**
- • appropriate place photography in terms of imaging equipment and the possibility of performance skills of skill under study properly and also in terms of imaging to account for the timing of the lighting.
- • been exposed to the conditions used under performance-related skill
- • (290) was to determine the degree of resistance.

➤ **The second survey :**

The researcher conducted the second survey on 9-7-2018 for carrying out the evaluation on Isokinetic Dynamometer concerning the selected sample of the survey from the research community numbered (7) players (An undistinguished group) and out of the basic sample of the research (a distinguished group) in the isokinetic lab at the Faculty of Natural Ramedy, Cairo university with the aim of finding scientific treatments (scincerity and stability).

➤ **The main (Principal) study :**

The researcher carried out the main study on Monday 8-9-2018 and on Tuseday 9-9-2018 As the researcher at this period evaluated the muscle power in the lab of muscle performance evaluation and isokinetic training at the faculty of Natural Remedy.

• **Statistic treatments :**

The data were downloaded and statically dealt with through the computer by using the programme of spss and they included the following.

-
- The arithmetic.
- The standard deviation.
- Torsion coefficient.
- Analysis of variance.

• **Conclusions:**

Through the aims and inquiries of the research and according to its sample and changes of study, and (plus) what the results of the statistic method used and its characteristics that suit the nature of study, the researcher could reach the following deductions:

The average determination of shoulder muscles of lightweights in judo player (60-76-73) kg. ranges among the following rates.

-the determination of bringing near strength (66,66-52,66) Newton*meter.

-the determination of pushing for strength (68,6-50,0) Newton*meter

-the determination of rotating outside (72,33-62,3) Newton*meter.

-the determination of rotating inside (70,33-58,3) Newton*meter.

The average determination of shoulder muscles of midweights in judo players (88-90)kg ranges among the following rates:

-The determination of bringing near strength (91,33-83,33) Newton*meter

-The determination of pushing near strengt (94,66-86,33) Newton*meter

-The determination of rotating outside (97,33-88,0) Newton*meter.

-The determination of rotating inside (93,33-85,33) Newton*meter.

The average determination of shoulder muscles of heavy weights of judo players (100 - +100) kg ranges among the following rates.

-The determination of bringing near (112,33-107,66) Newton*meter.

-The determination of pushing for (115,33-109,33) Newton*meter.

-The determination of rotating outside (119,33-111,33) Newton*meter.

-The determination of rotating inside (114,66-109,0) Newton*meter.

There is differences statistic survey among judo players in different weights of determinations muscle power.

➤ **Recommendations :**

According to the previous deductions and what we saw concerning result shows and through their explanations, the researcher suggests the following recommendations:

○/٢/١ interest in using the average moments (adduction and abduction, rotation of inside and outside) Ktguenin for strength training of the shoulder joint in the sport of judo.

○/٢/٢ interest in muscle strength and a private (pice torqce) to determine the level and aspect precaution to avoid injury to the judo players.

○/٢/٣ interest in conduct analytical studies (to assess muscular performance) on different joints (trunk and knee).

○/٢/٤ interest in applying analytical research compared between the right side and the left