

## THE EFFECT EXERCISES OF STRETCHING FEATURED STRENGTH ON SPECIAL FLEXIBILITY, INSULIN HORMONE, AND THE ACHIEVEMENT OF THE SNATCH, CLEAN AND JERK LIFTS FOR ADVANCED LIFTERS, BAGHDAD CLUBS

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### Abstract

The purpose of this paper is to identify the effect of exercises stretching featured strength on special flexibility and insulin hormone of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs, and identify the effect of exercises stretching featured strength on special flexibility and the achievement of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs. The researcher used the experimental approach in one group design with pre and post-test, since this design is of tight control with its suitability for the research procedures and the researcher chose a random sample consisting of (8) weightlifters out of a total of 20 players in the weight category (81) kg. One of the most important results reached by the researcher is that: The strength-related stretching exercises positively affected the development of the achievement of the snatch, clean and jerk, and the elongation associated with strength affects the fluidity of performance and the development of achievement. One of the most important recommendations recommended by the researchers is that: Need to use stretching exercises accompanying the strength prepared for the lifters and in the special preparation specifically, and need to use various stretching stresses to influence achievement.

**Keywords:** Sports psychology. Exercises. Hormone. Insulin. Baghdad clubs

### Introduction

Maximum strength is one of the most important characteristics and physical capabilities because of its impact on the development of the physical aspect on the one hand, as well as on the rest of the physical capabilities on the other hand, and since the maximum strength has such a status, the factors affecting it are many and you need to be careful when interpreting these factors Perhaps the most prominent of these elastic factors for the muscle, as it is the decisive factor in determining the output of force in its final form, but the most important thing in it is if the extent of muscle stretching is related to the output of maximum force, since the stretching of the muscle fiber gives high-strength rebounds that are reflected in the result on the amount of maximum force, and this matter It leads us to two questions, the first about the possibility of muscles retaining their maximum strength when training them in an abstract manner without introducing any other ability, and the second question is whether identifying and integrating muscle stretching exercises with maximum strength brings good results, taking into account that there are hormonal secretions resulting from the use of maximum strength, the first of which is a hormone Insulin, which works in the body to cause adaptations as a

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result, it is important to study such variables, especially for weightlifters, since weightlifting has many challenging factors for the necessity of addressing and researching it.

The importance of the research lies in the possibility of determining the strength accurately when used with the rubber bands of the muscles and putting these exercises at the disposal of the players and in the hands of the coaches for use in the training process.

### Research Problem

It is no secret to everyone that strength has many important influencing factors, foremost of which is stretching of the muscle, which is a clear indicator of the efficiency of strength training, as it is well known that muscle elasticity is an acquired factor, not a genetic factor, and its importance appears in achieving growth in strength for muscle tissues that need the maximum for muscle stretching, recent studies were conducted by experts in physical fitness, which concluded that muscle elasticity plays a major role in preserving the genetic characteristics of the weightlifting player. These studies recommend the importance of muscle stretching exercises that are performed accompanying strength training in order to achieve muscle stretching of the sheath tissue that surrounds the muscle, which gives additional space within the tissues for more muscle strength. Muscular, which is one of the exercises that are rarely used among the quadruplegic players.

### Research objective:

- To identify the effect of exercises stretching featured strength on special flexibility and insulin hormone of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs.
- To identify the effect of exercises stretching featured strength on special flexibility and the achievement of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs.

### Research hypotheses:

- There is a positive effect of exercises stretching featured strength on special flexibility and insulin hormone of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs.

- There is a positive effect of exercises stretching featured strength on special flexibility and the achievement of the snatch, clean and jerk lifts for advanced lifters, Baghdad clubs.

### Research fields:

- Human field: Baghdad weightlifting clubs players.
- Time field: (28/11/2021) to (26/1/2022)
- Spatial field: Municipality of Baghdad Sports Club Hall

### Research Methodology and Field Procedures

#### Research methodology

The researcher used the experimental approach in one group design with pre and post-test, since this design is of tight control with its suitability for the research procedures, as "the experimental approach depends on introducing a deliberate and controlled variable for the specific conditions of an accident and observing and interpreting the resulting changes in the accident itself" (Mahjoub. 1993).

#### Community and sample research

"The aim of selecting a research sample is to obtain accurate information about a community, because through it, the results of its study are generalized" (Al-Khatib. 2003). Therefore, the researcher chose a random sample consisting of (8) weightlifters out of a total of 20 players in the weight category (81) kg.

#### Methods, tools and devices used in the research:

##### Means of collecting information:

- Measurement and testing.

##### Tools and devices used in the research:

- A computer (Dell) made in China.
- Medical scale (Chinese-made electronic).
- Saw iron and iron discs of different weights (2.5 kg - 25 kg).

- Stand of different heights.

**Field research procedures**

**Determine the tests and measurements**

**1. Test name: the completion of the snatch**

- Purpose of the test: To measure the completion of the snatch lift
- Measurement unit: kilogram
- Tools used: iron discs - iron shaft - (drum)
- Performance method: The player fully adheres to the technical stages of weightlifting while carrying as many resistances as possible.
- Scoring method: The player is given three attempts, the best of which is counted.

**2. Test name: Achievement of the clean and jerk**

- The purpose of the test: to measure the achievement of the elevate the ejection
- Measurement unit: kilogram
- Tools used: iron discs - iron shaft - (drum)
- Performance method: The player fully adheres to the technical stages of weightlifting while carrying as many resistances as possible.
- Scoring method: The player is given three attempts, the best of which is counted.

**3. Test name: From standing flexion, bending the torso forward - downward (the kinetic performance factor - performances).**

- The purpose of the test: - Measure the flexibility of the spine and back muscles.
- Measuring tools: - A seat without a back with a height of (50 cm), a ruler divided from (0 - 100 cm) fixed vertically on the edge of the seat so that the number (50 cm) is parallel to the surface of the ruler and the number (100) is parallel to the lower edge of the seat.
- Test method: - The player stands above the seat with the feet joined together with the toes of the feet fixed on the edge of the seat and keeping the knees without bending.
- Recording method: - The laboratory records the largest distance achieved in (cm) for the laboratory two attempts to record the best of them.
- Note: The knees should not be bent, and the torso should be bent slowly.

**4. Measuring the insulin hormone index in the blood:**

The blood sugar level was measured through the ACCURY type portable small measuring device for the purpose of identifying the percentage of the hormone insulin in the blood as an indicator of high growth hormone, and it was measured in the pre and post-tests for all players, the research sample, and after performing the maximum effort by 3 minutes.

**Pre-tests:**

In order to determine the levels of individuals of the research sample before conducting the main experiment on them, the researchers and the auxiliary work team gave some directions to the sample and introduced them in general about the importance of the research and then the implementation of the tests in front of the players with an emphasis on the mechanism of correct kinetic performance for each test, after which the pre-tests were started on the day 10/12/2021:

The first day: Flexibility test, achievement and insulin hormone measurement.

The following tests were performed (the snatch raise, the jerk raise, flexibility of the spine, and insulin hormone measurement).

**Main experiment:**

The following steps show the specifications of the work in the main experiment of the research group, as follows:

Three training units per week for special physical exercises.

- At the beginning of each training unit, emphasis is placed on ensuring that warm-up and muscle-stretching exercises are performed.
- The main section begins with strength and stretching exercises.
- Four special exercises are used in each training unit. These exercises target different muscle groups.
- Emphasis was placed on full and precise adherence to the instructions and instructions for the kinetic performance of the lifts (the most important of which is that the performance be (90-95%), which represented the intensity of the exercises.
- The number of repetitions ranged between (10-12) repetitions, with (3) groups, with an interval rest of (2-3) minutes, and the use of the amount of resistance that started in the first training unit with (85%) of the player's maximum strength, which was determined according to the maximum repetition. (RM1) Performed by the athlete in the exercise concerned, noting the use of these resistances in ascending order.
- The total number of training units was (12) training units.

**Post-test:**

On Tuesday, corresponding to 1/26/2022, the tests and post-measurements began. The researcher took into account that the procedures should be similar to the conditions of the pre-tests as much as possible in terms of timing, tools and devices used, and follow the same sequence in conducting the pre-tests and measurements, as follows:

**The first day: achievement test and measurement of the insulin hormone.**

The following tests were performed (the snatch raise, the jerk raise, flexibility of the spine and insulin hormone measurement).

**Statistical methods:** The search data was processed through the Statistical Package for the Social Sciences (SPSS).

**Results and Discussion**

Presentation, analysis and discussion of the results of achievement, flexibility and insulin hormone.

Presenting, analyzing and discussing the results of pre and post-tests on achievement and growth hormone (Table 1).

**Discussion of the achievement of the snatch and lunge lifts, flexibility of the spine and the insulin hormone:**

The researchers attribute the superiority of the results of the post-test over the pre-test to the special exercises used by the research group and the exercises containing throwing weights in the air or jumping with it, which had a positive impact on the results obtained by this group. The use of maximum strength in weightlifting is important. Great for obtaining muscular adaptation as a result of the use of strength exercises at a high rate, especially in the general preparation stage in which the athlete needs to obtain high muscle density through the use of the hierarchical rule with gradation in intensity according to the method of training and some other rules. In addition, when we talk about muscle density, we mean by it strength. The attempt to acquire the first characteristic gives birth to the second, and so on. The best area to gain the

**Table 1:** Shows the arithmetic mean, standard deviation, calculated (t) value, error level, significance, differences of the arithmetic mean, and deviation of the differences in the pre and post-tests.

No.	Variables	Pre-test		Post-test		Difference between arithmetic mean	Difference between standard deviations	T value calculated	Level Sig	Type Sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation					
1	Achievement snatch kg	135	11.755	146	10.191	10.987	2.112	4.969	0.011	Sig
2	Achievement clean and jerk of the weight lift kg	165.333	14.230	174.833	18	10.500	2.200	4.772	0.032	Sig
3	Spine elasticity/cm	69.33	3.222	75.121	3.221	5.334	1.897	8.811	0.011	Sig
3	Insulin, mg per deciliter	80	3.323	70.654	3.111	9.432	2,452	3.846	0.010	Sig

characteristic of strength is the state of complete physical readiness, where healthy bones are free from deformation. The amount of gradual loading that corresponds to a gradual decrease in the volume of repetitions is the only way to increase the amount of force required to treat areas of weakness through these weights, as the muscle grows as much as the pressure applied to it, and increasing the amount of loading to gain the characteristic of strength leads in most cases to increase the muscles in general (Al-Qaisi. 1991). As this method of exercise used in the research is of great benefit in the sport of weightlifting, since the method of performance in it serves the kinetic path of lifting in terms of kinetic performance and the physical adaptations that occur after it, and this is confirmed by (Adel Abdel-Basir) that "as a group of exercises, it must be prepared in a way that gives an effective effect in developing all abilities related to the type of activity" (Basir. 2006). The term special exercise indicates that an object or resistance must be tossed into the air to achieve the goal of the lift.

When the athlete does a jump, he bends slightly before jumping, and this bending stretches the muscles and stores the elastic capabilities of the muscles and tendons as added energy. This energy helps him to jump higher, as the main requirement is to jump very quickly after stretching, and here, and it is the most important thing, he will achieve what is known as (the muscle stretching reflex), which it will make the muscles contract more forcefully. (Faraj. 2012).

Achieving muscular contraction with greater force contributes to a group of factors, including those related to the nervous and muscular systems, and in different directions in each of them. However, the method of special exercises gives additions to the strength of contraction without the rest of the methods, including high-speed frequency in nerve impulses in a simultaneous instantaneous manner, in addition to energy added by stimulating the soft tissues in the ligaments, joints, and tendons, and this energy in itself constitutes relative heights in the outputs of the maximum force, which is reflected positively on the achievement of the snatch and lunge lifts. The reason for the development of the results of the achievement is due to the special exercises, which affected positively, as they require transitions in muscular work from one muscle group to another with control over the positions of the body and its parts through precise and mutual regulation between the muscle groups when performing them, which directly affects the process of group participation. muscular muscles with great accuracy, and this matter is sufficient for neuromuscular compatibility to occur, and this matter tends to a large extent to develop the maximum ability that expresses the movement in which a large amount of force is used in a short period of time, and this matter is a major requirement in the sport of weightlifting in the snatch and jerk. Because the level of maximum power appears through the proportionality between the amount of force used and the time of instantaneous performance, which is determined based on the relationship (force - speed) maximum capacity. Stretching exercises were introduced to accompany the strength exercises of the lifters, as they are of great importance and have achieved tangible results among the players of the research sample, as the range of motion depends on the nature of the movement of the joint and its anatomical structure and on the ability of the muscles, tendons, ligaments and joint membranes on the tendons, noting that those concerned in the sport of weightlifting confirm when performing exercises for muscle stretching, the static method must be maintained in the performance, by maintaining the top position in the exercise for 30 seconds before returning to the starting position while gradually reaching the full muscle stretching position to avoid any possibility of injury, by performing 3-5 repetitions it is a sufficient number to achieve muscular elasticity for each part of the body.

This is the fastest way to develop flexibility because it achieves the longest muscle tension in the types of stretching, but it is equal to the dynamic method over time (Sonbli. 2008). It is possible that the work of flexibility programs leads to a high level of ability and coordination, and even a high level of muscle strength as well in many cases because these programs have an effective effect on the nerve impulses that feed the muscles, in addition to creating the appropriate mechanical conditions to achieve maximum contraction. (El-Din et al. 1997). Muscle elasticity is an acquired factor, not a hereditary factor, and its importance appears in the prevention of potential injuries, as well as in

achieving muscular growth for muscle tissues that need the maximum muscle stretch. Recent studies have been conducted by experts in fitness, which concluded that muscle elasticity plays a major role in maintaining the genetic characteristics of the weightlifting player, and they reached the importance of muscle extension exercises that are performed accompanying the exercise in order to achieve muscle extension of the sheath tissue that surrounds the muscle, which gives additional space within the tissues for more muscle mass (Sonbli. 2008). The results of the insulin hormone came positively through the superiority of the results of the post-tests over the pre-test ones since the insulin hormone is one of the hormones that is affected by the stress of sports performance. For maximum strength, and the most important thing that should be noted is that the amount of the insulin hormone in the body of men ranges between (2.4 - 25.00) units/mole. These percentages vary over the hours of one day, the age of the individual, and the level of effort exerted by him (Will More MJ.H And Costill, D.L. 1995).

## Conclusions and Recommendations

### Conclusions

- The strength-related stretching exercises positively affected the development of the achievement of the snatch, clean and jerk.
- The elongation associated with strength affects the fluidity of performance and the development of achievement.
- Adopting the elongation associated with strength contributes more to the development process.
- Putting strength-related stretching within the vocabulary of the training curriculum makes it easier for the trainer to overcome many training problems, especially in achievement and even injuries.

### Recommendations:

- Need to use stretching exercises accompanying the strength prepared for the lifters and in the special preparation specifically.
- Need to use various stretching stresses to influence achievement.
- Necessity of diversifying the methods of stretching training, which confirms that it is highly effective in line with the requirements of kinetic duty.
- Accurate and complete adherence to the requirements of stretching exercises associated with strength, as well as the availability of safety and security conditions.

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**Appendix 1:** It represents stretching exercises for strength in the training units (first week).

<b>No.</b>	<b>Exercises</b>	<b>Exercise intensity</b>	<b>amount of resistance</b>	<b>Repetition</b>	<b>Sets</b>	<b>Rest between sets</b>	<b>Rest between Exercise</b>	<b>total exercise time</b>
1	Sport squat with stretch	%80	%90	4-6	3	3min	4min	6min
2	Jerk back squat rack	%95	%90	5-6	3	3min	4min	6min
3	Power tow	%85	%90	8	3	3min	4min	6.30min
4	Pull out chairs	%80	%90	8	3	3min	4min	6.30min