

## مجلة جامعة ذي قار لعلوم التربية البدنية

بجلة علمية محكمة تصدرها كلية الثربية البدنية وعلوم الرياضة



### The Effect of Strength Training with Neurostimulation on Explosive Power and Digital Achievement of Olympic Lifts for Young Weightlifters

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#### **ABSTRACT**

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Keywords: Neurostimulation-Electrical stimulation-Explosive power-Digital achievement-

Olympiclifting.

The purpose of the research was to identify (the effect of strength training with neural activation with electrical stimulation, explosive power and digital achievement with the lifting of the kidnapping for the young quartet of Babylon governorate)

The researchers used the experimental method in the method of equivalent groups to suit it to solve the research problem, and the researcher determined that a research community with a group of four quartets of Babylon governorate, the youth category, which numbered (12) clubs for the 2020-2021 season, divided into two groups of (6 breeders) each.

Homogeneity and parity between the sample members were conducted in the variables ((explosive ability of the legs and arms, the numerical achievement of the lifting of the snatch and the net, and the differences were not statistically significant, then the experiment was conducted on Thursday (9/11/2023), while the pre-tests were conducted after that to apply strength training with nerve stimulation accompanied by electrical stimulation (15) Training unit for 5 weeks (3 units) per week with the time of the training unit with a capacity of 90 minutes for each training unit including 10-15 electrical stimulation interspersed with rest periods

After the completion of the post-tests, the data were collected and analyzed statistically to reach the following conclusions:

- 1. Strength training with neurostimulation with electrical stimulation has shown a significant effect in the development of the explosive capacity of the muscles of the arms and legs.
- 2. The weightlifters in the experimental group made a clear progress in the numerical achievement of the snatch and netter lifts compared to the control group.
- 4. Integration strengths training and electrical nerve stimulation enhance the efficiency of the neuromuscular system, leading to an improvement in qualitative athletic performance. Based on this, the study recommends:
- Integrating these trainings periodically into the annual training plan, especially in the public and private preparation stages.
- Taking into account individual differences when using EMS, by adjusting the intensity and repetitions according to the situation of each player.

#### 1.1 Importance of Research

Olympic lifts in weightlifting are of great importance because they require high abilities in strength, motor explosion and precision in technical performance, and they directly depend on neuromuscular integration and the ability to transfer power in a limited time. In light of the rapid development of modern training methods, it has become necessary to employ advanced scientific and technical tools to raise the level of performance of athletes, especially in the young age groups, which represent the basic base for the selection of national teams in the future.

This research comes to highlight the integration of post-activation potentiation with electromuscular stimulation (EMS), a modern training trend that has proven effective in many international studies, but has not received enough attention in the local environment, especially in weightlifting sports, the importance of this research lies in the fact that it deals with the elements of strength, explosion, and neural conditioning from a dual perspective: physiological and neuromuscular, which provides an opportunity for a deeper understanding of the vital interactions that contribute to the development of the motor path and the digital achievement of Olympic lifting. The importance of this research is also highlighted in the fact that it provides a qualitative addition to weightlifting coaches in Babil Governorate in particular, and Iraq in general, by providing them with well-thought-out training programs based on integrated scientific foundations, which may contribute to improving the quality of competitive performance among young weightlifters, and reducing the gap with the Arab international levels.

#### 1.2 Research Problem

Field observation and recent competitive results of the Babylon Governorate Quartet in the youth category indicate a clear disparity in the level and digital achievement of Olympic lifts, despite their regularity in traditional training programs. This disparity is manifested in the presence of problems related to the speed of movement execution, the timing of the muscular blast, and the inaccuracy of the transition between the lifting phases, which indicate poor neuromuscular integration and low power transfer efficiency. These observations lead to a fundamental question about the adequacy of the training methods used Currently, and its suitability to the needs of motor and physiological development of this category of lifters.

The lack of use of modern training methods, such as post-induction neural stimulation and electrical stimulation, also creates a clear gap between what is applied in the developed community and what is practiced in our local clubs. This is reinforced by the absence of local studies that examine the interaction between these methods and their direct impact on improving the motor path, the accuracy of technical performance, and digital achievement.

Hence, the research problem stems from the urgent need to design a training intervention that combines neurostimulation and electrical stimulation in a systematic way, to measure its impact on the development and digital performance of Olympic lifting, and the problem aims to investigate the effectiveness of this type of training in improving neuromuscular coordination and thus improving the competitive level of young lifters in Babil Governorate.

#### 1.3 Research Objectives:

The current research aims to identify the following:

The Effect of Strength Training with Nerve Stimulation Electrical Stimulation Explosive Power and Digital Achievement of Olympic Lifts for Youth Quartet of Babylon Governorate

#### 1-4 Research Hypotheses

There is a positive effect of strength training with nerve stimulation with electrical stimulation in the motor path, explosive ability and digital achievement of the Olympic lifts of the youth quadrant of Babil province

#### 1.5 Research Areas

- Human Field: Babylon Governorate Youth Quartet for the Season 2022-2023
- Spatial Field: Hilla Sports Club
- Temporal Domain 20/10/2022- 13/5/2023

#### **Chapter Two**

#### 2- Research methodology and field procedures:

#### 2-1 Research Methodology:

The researchers used the experimental method in the method of equivalent groups with pre- and post-test to suit it to solve the research problem.

#### 2-2 Research Population and Sample:

The researcher identified a research population with a group of (12) youth clubs in the Babylon Governorate for the 2020-2021 season, divided into two groups each (6 weightlifters).

#### 2-3 Homogeneity and Parity:

#### 2.3.1 Homogenization Procedures:

Homogeneity was performed among the sample members in these variables, and the differences were not statistically significant, as shown in the following table:

Table (1) shows the homogeneity of the research sample

		( )		v		
Torsion coefficien	Broker	on	Going to	Unit of Measure	Variables	t
t		UII	Going to	ment		
0	4 = 0	4 0 5 0 5			- 4	_
-0.652	1.70	1.8285	17	poison	Length	1-
0.684	64	1.7045	12.875	kg	Mass	2-
0.551	17	1.2825	14.625	year	Chronological age	3-
0.703	4.5	2.4085	32.884	year	Training Age	4-

0.866	3.201	3.37	34.555	watt	Arms	Explosiv	5-
0.759	4.449	1.0335	30.75	watt	Men	e	6-
0.739	4.443					Capacity	
0.994	3.574	8.7155	1.255	relative	Nattar	Olympic	7-
0.700	2054	0.435	0.9195	relative	Kidna	lifts	
0.782	2.054				pping		

#### **2.2.2 Parity**

The researchers divided the research sample into two experimental and control groups by lottery method, and the parity was done in two experimental and control groups, as shown in Table (2).

Calcula Experimental Signific Control Group Statistical ted Group ance Part Significance value Going Going Level on on (t) to to Insignifican Length 2.185 6.847 1.87 17.25 1.787 16.75 Insignifican Mass 2.935 1.364 1.224 13.5 2.185 12.25 Insignifican Chronological age 2.368 3.266 1.201 14.5 1.364 14.75 Insignifican Training Age 5.759 32.88 3.166 2.449 32.888 2.368 Insignifican Explosi 1.013 6.994 37.9 38.21 3.574 3.166 Arms ve Insignifican Capacit 2.185 6.782 1.054 31.25 1.013 30.25 Two y Insignifican 1.364 4.786 0.181 1.07 0.25 1.04 Nattar Digital Achiev

0.921

0.12

0.75

Kidnap

ping

ement

0.918

Table (2) Equivalence of Experimental and Control Groups

#### 2-3 Means, Tools and Devices Used in Research:

3.166

#### 2.3.1 Methods used in the research:

2.759

- Interview.
- Tests and measurement.
- Observation.

Insignifican

- Ouestionnaire.
- -Experimentation

#### 3.3.2 Devices and tools used in the research:

- Duct tape.

- Metal tape measure.
- Whistles (2).
- Stopwatch (2)
- Chinese-made Sony video camera (1).
- Chinese-made Samsung laptop (1).
- American-origin electrical stimulation devices.

#### 2-4 Field Research Procedures:

#### 2.4.1 Identifying the research variables:

The researcher relied on surveying many available scientific sources and selecting the variables of explosive power (legs - arms), motor path and digital achievement of the hijacking lift.

The researcher prepared a form for determining the physical tests of the explosive ability of the arms and legs, and the most acceptable form was selected according to the form that was distributed to many specialists according to the statistical treatment.

#### 2.5. Description of the Tests:

#### **First: Explosive Ability Tests:**

#### 1- Medical ball throwing test.

Purpose of the test: Measure the explosive capacity of the muscles of the arms.

Tools: Medical Ball Weight (3 Kg) Fixed Chair, Tape Measure, 2 Fastening Straps, Camera, Drawing Scale.

Procedures: The player sits on the bench, the two assistants stabilize the feet and back with a fastening belt, the tester holds the ball between his knees, the feet fixed on the ground with a suitable opening and the back straight, after which the player throws the ball to the maximum height and the camera is placed to the side and at an appropriate distance and height so that the entire range of the ball's movement is covered.

Method of Recording: Three attempts are given and the best attempt is taken during the treatment of the analysis program (Abdel Karim, 2007, p. 55).

#### 2- Vertical jump test of stability (modified sergeant test)

Purpose of the test: To measure the explosive ability of a muscle of the legs to jump up.

Tools needed: Smooth wall, piece of cloth to scan markings, high frequency camera

Procedures: The laboratory stands facing the wall and a white mark is fixed in the belt area in the center of the body, provided that the lab clothes are dark so that the mark is clear, and the camera is placed behind the laboratory at an appropriate distance so that the entire movement is visible (from the beginning to the end) and the feet appear when they leave the ground, as well as the hands appear at their highest height, and the scale is placed in with the perception of the jump at the maximum possible height of stability.

Recording method: The distance traveled by the center of body mass is calculated and the film is processed through the kinetic analysis program (Traker ) to calculate distance, speed and time. (Qasim, 2011, p. 74).

#### Note: The following equation is applied to calculate explosive power:

Explosive Ability: Mass x 9.8 x Speed
Payment Time

#### **II. Olympic Lift Test:**

#### 1- Achievement Test of the Lifting Lift:

- Purpose of the test: to measure the achievement in the lifting of the snatch.
- Tools used: Iron bar (20 kg), iron discs of different weights, lifting drum.
- Procedures: The bar is placed horizontally in front of the legs of the weightlifter, and it is held so that the fingers are downwards, and back outwards, and the weight is pulled in one motion from the ground to the maximum extension of the arms above the head, with the knees bent, and the bar passes in front of the body in a continuous movement so that no part of the body touches the wooden board except the feet during the performance of the lift, and after the end of the lift, the player stands motionless with the legs, arms and feet stretched on one line until The referee's signal to lower the weight on the wooden board, and there is no specific time for the player to stand after the end of the movement, and the position ends with the feet on one line and parallel to the torso and the bar, and gives the signal to lower the weight when the player becomes completely motionless in all parts of the body.

\*Registration method: The laboratory is given three attempts to record its best attempt (kilogram).(Jameel 2002, 74).

#### 2- Clean & Jerk Lift:

- Purpose of the test: to measure the achievement in the elevation of the net.
- Tools used: Iron bar (20 kg), iron discs of different weights, lifting drum.

Procedures This lift is done in two parts: Clean above the chest (shoulders) and then Jerk upwards with the arms extended, the bar is horizontal in front of the lifter's legs and is caught with the fingers down and the backs of the hands outwards, then the weight is pulled in one motion from the wooden board (lifting floor) to the shoulders in the way of bending the knees (squat method) and during the movement, the bar may slide on the thighs and pelvis, but the bar should not touch the chest before the end of the clean movement Clean The bar rests on the collarbones, on the chest (above the nipples) or on the arms bent completely – then the feet return to be in one line and the legs straight before performing the upward jerk motion, and the lifter can return to the standing position of the clean movement without a specific time, provided that the movement of the clean and the feet ends in a line with the torso and bar.

Then the movement of the jerk with the hands upwards, as it is done by opening the legs (the split method) with the arms extended to a full extension so that the bar is perpendicular to the head. Then the feet return to be in a line with the arms and legs extended and standing to wait for the referee's signal to lower the weight on the wooden board (lifting floor) and once the lifter is still motionless in all parts of his body.

• Registration Method: The laboratory is given three attempts to record its best attempt (kilogram).

#### Fourth: The mechanism of operation of the electrical stimulation device:

The electrical stimulation device relies on sending impulses or electrical currents to the target muscles, which leads to the excitation of the muscle fibers through a strong neuromuscular stimulation that is similar, in intensity, to the response resulting from carrying high weights. These impulses are not sent through the central nervous system as in voluntary contractions, but are applied directly to the muscle or indirectly through stimulation of the nerve that feeds it, which leads to the occurrence of muscle contraction. The nature of this electrical stimulation differs from

voluntary muscle contraction in terms of neural mechanism and timing, as the contraction is produced by artificial electrical excitation that leads to a muscular response without the intervention of the will.

Figure 1: Shows the type of electrical stimulation device used in the research.



#### Type of device used in the search: . (Taqi 2024, 53)

A newly-made device of German origin, lightweight, easily portable, and battery-powered. The device contains (8) electrodes, which gives it an advantage over many traditional devices that are limited to only four poles.

The device includes three main packages of specialized operational software, namely:

- 1. TENS software: Intended for neural stimulation, it contains 20 different modes of action, used according to the type of stimulation required.
- 2. EMS Program: Customized for muscle stimulation, includes 20 styles, selected according to the type of muscle to be trained and the degree of loading.
- 3. MASSAGE PROGRAM: It contains 10 massage styles, varying degrees depending on the player's need or the goal of the application.

#### 2.5 – Exploratory Experiment:

The researchers conducted the exploratory experiment by giving a clear and accurate picture of the vocabulary of the tests used to serve the proposed curriculum according to the exercises, the experiment was conducted on Thursday (9/11/2023).

#### 2.6 Pre-Tests:

The pre-tests for the special physical characteristics of the research sample members were conducted on Wednesday, 12/11/2023, as the same conditions were achieved as much as possible when performing the post-tests.

#### 2.7 Main Experience:

The application of strength training with neurostimulation (\*) included the following:

- 15 training units for 5 weeks (3 units) per week
- Applied on (Friday, Saturday, Tuesday)

- The training unit time is 90 minutes per training unit, including 10-15 electrical stimulation interspersed with rest periods.
- The wave system was followed in the transition in the tension used during special exercises, as well as taking into account the individual differences of the players.
  - As for the electrical stimulation devices, they were worked by the specialized therapist who
    accompanied all the training units to ensure that the electrodes are connected to the correct
    image and ensure their safety to achieve their connection to the correct place to achieve their
    purpose.

#### 2-8 Post-tests for the research sample:

The post-tests of the research sample were conducted on 14/2/2022 under conditions similar to the method of conducting the pre-tests in terms of the test atmosphere, the place of the test, and the tools used in the test.

#### 2-9 Statistical Methods Used in the Research:

- Arithmetic mean
- Standard deviation
- Convolution
- Value (t)

#### Chapter Three

View and discuss results

- 3. Presentation, analysis and discussion of the results:
- 3-1 Presentation of the results of the pre- and post-tests for the research variables and for both the control and experimental groups
- 3-1-1 Presentation of the results of the pre- and post-tests of the control experimental group variables

Table (3)

Presentation of the results of the pre- and post-tests of the variables of the control group

1 resentation of the results of the pre- una post tests of the variables of the control group										
Statistical	Signif	Calculate	Post-te	esting	Pre-te	Pre-test				
Significance	icance	d value	22	Going	on	Going	Part			
Significance	Level	(t)	on	to	on	to				
Moral	0.003	6.994	3.574	41.62	3.166	38.21	Arms	Explosi		
Moral	0.001							ve		
		6.782	1.054	35.94	1.013	30.25	Two	Capacit		
								у		
Moral	0.008	4.786	0.681	1.21	0.25	1.04	Nattar	Digital		
Moral	0.005	3.166	0.75	0.921	0.12	0.918	Kidnap	Achiev		
		3.100	0.75	0.721	0.12	0.718	ping	ement		

The results of the research from Table (3) indicated that there are significant differences between the results of the pre- and post-tests of the control group for all variables and in favor of the posttests of the members of this group, which are:

- Explosive Ability Variable: The value of (T.test) calculated between the pre- and post-tests for the arms was (6.994) and for the legs (6.782), with a significance level of (0.003) and (0.001) respectively, which indicates that there are significant differences between the pre- and post-tests and in favor of the post-test.
- Relative Achievement Variable: The calculated value of (T.test) between the pre- and post-tests was (4.786), (3.166) and the significance level was (0.008), (0.005), which indicates that there are significant differences between the pre- and post-tests and in favor of the post-test.

# 3—1.2 Presentation of the results of the pre- and post-tests of the research variables of the experimental group

Table (4)
Pre and Post Test of the Experimental Group

Type of	Signific	Calcula	Post-te	esting	Pre-t	est		
indicatio n	ance Level	ted value (t)	on	Going to	on	Going to	Variable	
Moral	0.003	9.42	1.24	45.82	3.574	37.9	Arms	Explosive
Moral	001.0	5.34	1.15	39.72	1.054	31.25	Two	Capacity
Moral	0.004	6.12	0.03	1.32	0.181	1.07	Nattar	Digital
Moral	0.006	7.82	0.07	1.12	0.75	0.921	Kidnap ping	Achievem ent

The results of the research from Table (4) indicated that there are significant differences between the results of the pre- and post-tests of the experimental group for all variables and in favor of the post-tests of the members of this group, which are:

- Explosive Ability Variable: The value of (T.test) calculated between the pre- and post-tests for the arms was (9.42) and for the legs (5.34), with a significance level of (0.003) and (0.001) respectively, which indicates that there are significant differences between the pre- and post-tests and in favor of the post-test.
- Relative Achievement Variable: The calculated value of (T.test) between the pre- and post-tests was (6.12), (7.82) and the significance level of (0.004) and (0.006), which indicates that there are significant differences between the pre- and post-tests and in favor of the post-test.

## 3—1.2 Presentation of the results of the post-test of the research variables, explosive power and achievement of the two research groups

Table (4)
Post-test two experimental and control groups

Statistica 1	Significa nce	Calculate d value	Experimental Group		Control Group		Part
Significa nce	Level	(t)	on	Going to	on	Going to	Tait

Moral	0,012 -	6.994	1.24	45.82	3.574	41.62	Arms	Explosi
Moral	0,001 -		1.15					ve
		6.782		39.72	1.054	35.94	Two	Capacit
								y
Moral	0,000 -	4.786	0.03	1.32	0.681	1.21	Nattar	Digital
Moral	0,048-	2 166	0.07	1 12	0.75	0.921	Kidnap	Achiev
		3.166		1.12	0.73	0.921	ping	ement

The results of the research from Table (4) indicated that there are significant differences between the results of the pre- and post-tests of the experimental group for all variables and in favor of the post-tests of the members of this group, which are:

- Explosive power variable: The value of (T.test) calculated between the two groups for the arms and legs was (6.994) and (6.782) and the significance level of (0.012) and (0.001) respectively, which indicates that there are significant differences between the post-test and in favor of the experimental group.
- Relative Achievement Variable: The calculated value of (T.test) between the post-test of
  the Net was (4.786) snatching, (3.166) and the significance level of (0.004) and (0.006)
  respectively, which indicates that there are significant differences between the pre- and posttests and in favor of the post-test.

#### 3-3 Discussion of the results of the research variables

From Table (4)(3): The results of the pre- and post-tests of the control and experimental groups, for the control group, this improvement reflects the effectiveness of the general training program, but is not necessarily the result of qualitative stimuli such as those used in the experimental group, and this indicates the effectiveness of the basic program even without neuroelectrical stimuli, but it does not guarantee reaching the maximum developmental efficiency compared to the experimental group. During the various iron and jumping exercises, because the athlete exerts in the plyum training the maximum explosive ability to rid the body of the gravity factor and rise in the level of jumping and jumping to perform a better achievement (Abd Ali, 1988, p. 45)

Through Table (5), we observe the development of the experimental group and the existence of a noticeable difference between the two values in improvement compared to the control group indicates the positive effect of neural stimulation and electrical stimulation in the development of explosive ability, as well as the difference between the averages in digital achievement especially (snatching and snatching) reflects a functional development in motor and muscular performance under the influence of electrical neurostimulation, it is noted that the differences in favor of the experimental group confirm that the program adopted in this group has a qualitative effect that exceeds the traditional.

Electrical stimulation training has played an effective role in stimulating the central nervous system, as it has made a large number of neurons work better and faster and receive neural signals in the best way and respond more to those signals sent from the brain to muscle fibers or muscles, which increases their strength.Jakalski:.2000p.p95)

The explosive power in this group has developed significantly through the development of the posttest achievement, because the vibrations or electric current that was reaching the muscles excited the muscle fibers and stimulated them to a high degree and to the maximum extent of that excitement, the electrical stimulation contributed to the involvement of the largest possible number of working motor units, which contributes to the development of this explosive ability of the legs, so electrical stimulation had an important role in the development of explosive power by developing all the muscles used In training, it stimulated and developed all the fibers of those muscles that work and are used in running, so as the explosive ability of the legs develops, the performance and work of the muscles of the legs develops (Qadri, 1996, p. 16).

Weightlifters need to mobilize as many muscle fibers as possible at the same speed and precision to overcome weight resistance. (Taqi 2024, 53)

#### **Conclusions**

- 1. Strength training with neurostimulation with electrical stimulation has shown a significant effect in the development of the explosive capacity of the muscles of the arms and legs.
- 2. The weightlifters in the experimental group made a clear progress in the numerical achievement of the snatch and netter lifts compared to the control group.
- 3. The traditional training program has been fairly effective, but less effective than the electrical stimulation program.
- 4. Integration strengths training and electrical nerve stimulation enhance the efficiency of the neuromuscular system, leading to an improvement in qualitative athletic performance.
- 5. Strength training with neurostimulation and electrical stimulation through the Weightlifting Training Programs for Youth, has worked in developing the technical achievement and explosive ability of the lifters.

#### **Third: Recommendations**

- 2. Integrating these trainings periodically (small courses) into the annual training plan, especially in the general and private preparation stages.
- 3. Taking into account individual differences when using EMS, by adjusting the intensity and repetitions according to the situation of each player.
- 4. Use electrical nerve stimulation (EMS) devices in a disciplined manner and under the supervision of specialists, while ensuring the efficiency of the device and safety when using it.

#### Sources

<sup>&</sup>lt;sup>-</sup> Jamil Hanna : International Law and International Weightlifting Regulations 2001-2004, International Weightlifting Federation.

- Abd Ali Nassif: <u>Skills and Training in Weightlifting</u>, Baghdad, Higher Education Press, 1988, p. 45.
- Taqi Salah Abdel Rahman, et al.: A Training Program Using Electrical Muscle Stimulation (EMS) to Improve Some Physical Variables of Female Students in Fencing Sports, Scientific Journal of Sport Science and Arts, Vol. 78, No. 3, 2024.
- Abdul Karim Mahmoud, "Designing a Fitness Measurement Battery for Students Applying to the Police College", Master's Thesis, Faculty of Physical Education, Diyala University, 2007, p. 55.
- Qasim Hassan Kazim: The Effect of Special Physical Exercises and Semi-Competitive Exercises on the Development of Physical and Motor Abilities Related to Long Shot from High Jumping for Backline Handball Players, Ph.D. Thesis, University of Babylon, Faculty of Physical Education, 2011, p. 74.
- Qadri Bakri: <u>Sport Training and Electrical Stimulation Introduction to Training Theories</u>, Regional Development Center, International Federation of Amateur Athletics, 1996.
  - Graatty.B. Movement Behavior and Motor learning: philadep hialeu, feger, 1975
  - Jakalski: parachutestubing how and towing.sprints and relays contemporary theory.5<sup>th</sup> ed. <u>Tafinews press</u> .2000p.p95-100.

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# Appendix (1) A model of two training units, the first for explosive capability and the second for the digital achievement of regular lifts

#### **Training Module I: Explosive Capability Development**

Objective: Develop the explosive power of the muscles of the lower and upper extremities to support the pulling phase in the swing lift.

Duration: 90 minutes

Number of repetitions: 3 times per week

- 1. Public & Private Warm-up 15 minutes:
  - Light running + dynamic stretching.
  - Hip and shoulder flexibility exercises.
- 2. Main Segment 60 minutes:
- Plyometrics: 3 sets × 8 repetitions.
- Jumping on high boxes:  $3 \times 6$ .
- Pull a bar from the ground at high speed (70% of RM1):  $4 \times 3$  repetitions.
- Use electrical stimulation (EMS) of the quadriceps and hind thigh muscles after each major set.
- 3. Concluding Section 15 minutes:
  - Steady stretching.
  - Deep breathing exercises and muscle relaxation.

#### **Training Module II: Improving Digital Achievement**

Goal: Raise the digital achievement in the hijacking lift through maximum strength training Duration: 90 minutes

- 1. Warm-up -10 minutes:
  - Special warm-up using the snatch lift moves in the empty bar.
- 2. Main Segment 65 minutes:
  - Perform 85-90% of the maximum snatch: 5 sets  $\times$  2 repetitions.
  - Incorporating EMS during rest periods for the supporting muscles.
- Pulls:  $4 \times 3$  with 95% RM1.
- Support muscle exercises: such as high pull-ups and shoulder exercises.

Exercises using light EMS before performing the movement to stimulate the nervous system.

- 3. Return to Calm 15 minutes:
- Stretching exercises.
  - Digital performance appraisal