

# THE EFFECT OF SPECIAL EXERCISES ON DEVELOPING EXPLOSIVE AND DISTINCTIVE FORCE AT SPEED AND ACHIEVING DISCUS THROW FOR PEOPLE WITH CEREBRAL PALSY F36 - F37

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## ABSTRACT

*Training the effectiveness of discus throwing for the handicapped depends on the athlete's fast strength in the muscles of the aiming arm, chest, trunk and shoulders, and through the researcher's experience in the field of handicapped sport and for the researcher to be a trainer in the Paralympic Athletics Federation, and the importance of the research lies in how to prepare a set of applied exercises Special training according to the use of one of the training methods, which is the fixed muscle strength training for players with disabilities for the effectiveness of discus throwing with disabilities for cerebral palsy (F-36 - F-37) to develop special fitness capabilities for this category according to the mechanism of muscular work for this method and to raise the level of We achieved this event, the research problem crystallized in the weakness of these players in some special fitness capabilities that are reflected negatively on the level of achievement for this event, and the research aimed to prepare special exercises for players throwing a disk with disabilities for cerebral palsy and to identify the impact of special exercises in developing the explosive and distinctive strength With the special speed of discus players with disabilities for cerebral palsy F36 -F-37 for individuals in the sample.*

*The researcher used the one-group experimental approach, and determined the research sample by the intentional method, which included players with disabilities, cerebral palsy category F-36, as the training method that lasted for a period of (8) weeks with three units was applied using the auxiliary tools, and after obtaining the raw results It was statistically treated, and the researchers concluded that exercises have a positive effect in developing physical abilities and consequently the development of achievement for disabled players with disabilities is cerebral palsy among the individuals in the sample.*

**Keywords:** Sports training, mental disability (cerebral palsy), discus.

## INTRODUCTION

The training process for people with disabilities is a complex process in terms of choosing the training

method, as it was previously based on the traditional method that is based on coaches focusing on teaching skills only without focusing on choosing the best training method, and that the correct planning based on the

scientific foundations in sports training is Which leads to the continuous rapid development in various events and games, whether individual or teams for people with disabilities, and general and specific physical fitness with all its elements is the broad base and backbone of the practitioner of sports activities at all stages Age for people with a disability, which is inhaled by special fitness capabilities, which means privacy in the form of sport for every person with a sports disability in terms of direction for performance and organic devices involved in performance to achieve sporting achievements for people with disabilities, and the importance of research lies in how to prepare a set of special application exercises according to the use of one of the Training methods, which are exercises of the fixed muscle strength of players with disabilities for the effectiveness of discus with disabilities for cerebral palsy (F-36 - F-37) to develop special fitness capabilities for this category according to the mechanism of muscle work for this method and to raise the level of ang This event.

**Research problem:**

How to overcome the stability of the achievement level of the discus throwing effectiveness for players with disabilities Cerebral Palsy F-36, F-37 This is an indication of the weakness of these players in some of the special fitness capabilities that are reflected negatively on the level of achievement of this event, where the researcher intends to make a serious scientific attempt in numbers Exercises aimed at developing the achievement.

**Research objectives:**

Table (1) shows the homogeneity of the sample

Coefficient of torsion	Mediator	Standard deviation	Arithmetic mean	measruing unit	Pointers
0.832	51	4.83	52.34	Kg	Mass
0.285	162.3	8.61	163.12	meter	Length
0.849	20.4	2.12	21	Year	Chronological age
0.157	3.98	2.67	4.12	Year	Training age

**Means of gathering information, tools and devices used in research:**

Means of information collection:  
Observation

- Preparing special exercises for discus players with disabilities for cerebral palsy F36 -F-37 for the individuals in the research sample.
- Knowing the effect of special exercises on developing the explosive strength, which is characterized by the special speed of the discus players with disabilities for cerebral palsy F36 -F-37 for the individuals in the research sample.

:Research hypotheses

- There are statistically significant differences between tribal and dimensional tests in the level of explosive strength and characterized by speed and discus completion for the individuals of the research sample with disabilities for cerebral palsy F36, F-37.

**Research areas:**

The Human Domain: Discus players with disabilities for cerebral palsy F-36-F-37 in Maysan Governorate

Timeline: The period from 15/6/2019 to 20/8/2019

Spatial domain: the halls and stadiums of the Paralympic Committee in the provinces of Maysan.

**MATERIALS AND METHODS**

**Research Methodology:**

The experimental method (one group) was used to suit the nature of the research.

**Search community and sample:**

After the researcher chose the research community, who were randomly chosen, discus throwers with disabilities for cerebral palsy F-36- F-37 in Maysan Governorate, and they (5) represent the percentage of 66.67% of the research community.

Experimentation

Objective tests

Arab and foreign sources

:Devices and tools used

Number of timing clocks is (2)

. Tape measure

. Medical scale

Legal tablet 2 kg

. Medical balls of different weights

Different weights.

**Field research procedures:**

Defining search variables and their tests

The researcher studied and surveyed Arab and foreign sources and references and took the opinion of the supervising professor on how to determine the special fitness capabilities under investigation that distinguish

the players with disabilities for cerebral palsy (F36- F37) individuals of the research sample in particular and determine the completion test of throwing the disc to the farthest distance was placed In a special form to take the opinions of experts on their agreement on the most important of these capabilities and the appropriate tests for them, which are as follows:

.The explosive strength of the arms

.The force marked by the arms speed

.Achievement ability to throw a disc to the farthest distance

As shown in Table No. 2 below

Table (2)

Tests for special physical abilities are under consideration

Tests	Special physical abilities	sequence
Throwing a medical ball with one hand 2 kg	The explosive strength of the arms of the arms	1
10-second forward reference (girls' authority)	Distinguished force at the speed of arms	2
Throwing the disc in accordance with the competition law	The ability to accomplish discus throwing distance	3

Medical ball throw test weighing (2) kg with one hand over the head from a standing position.

The goal of the test: to measure the explosive power of the arm and shoulder areas.

. Tools: a medical ball weighing (2) kg, tape measure, and tight

- Performance specifications: The laboratory and the medical hand held ball stand over the head and the second arm supports the ball and throws the ball. Each laboratory has three attempts to score for it the best.

Recording method: calculates the distance between the front edge of the throwing line and the nearest point the ball places on the ground.

Front leaning (Shenau) bending the arms and extending them from the leaning position in (10) w.

Objective of the test: to measure the distinct force at the speed of the arms

Tools: electronic watch, registration form and assistant

.Performance Specifications: The laboratory will lie flat on the ground, resting on its arms. His arms are extended. Then he hears the starting signal.

He flexes his arms and quickly extends them within 10s.

Recording method: calculates the number of times the arms are bent and extended over 10s.

Weight test (4) kg

Objective of the test: to measure the achievement of the discus

Tools: (2) kg disk (2), tape measure

Test specifications: The player stands inside the legal circle, holds (2) kg disk, and the player throws.

Test conditions: The player gives three attempts to score the best attempt

How to score: calculate distance and choose the best bid from the three.

**Exploration Experience**

The researcher conducted his exploratory experiment on Saturday 15/6/2019 on (3) discus players who are from outside the sample members who are (8) players. The purpose of the experiment was to stand at the level of the auxiliary staff and their understanding of the tests under discussion, as well as to determine the time period It took the test, and the objective of the pilot study was to:

.- Ensuring the suitability and clarity of the instructions of the research sample tests.

.- Ensuring the ability and ability of the auxiliary team to implement measurements and tests

The validity of the devices and tools used in the tests -

Calculating the time required to perform the tests -

### Main experience

Tests before:

The researcher conducted the tribal tests before starting using the experimental method prepared by the researcher, and he was on Monday, 17/6/2019 in the stadium of the Paralympic Committee in Maysan.

Applying the training curriculum:

The training curriculum was prepared for the individuals of the research sample, relying on the researcher's training experience in the field of athletics. The curriculum was developed in a manner appropriate to the research sample and the period during which the training and tests go through that do not contradict the trainer's plan. The curriculum was used in the period of the special preparation and the training curriculum was applied for a period Three days a week, they are each Sunday, Wednesday and Friday, and the curriculum has continued to be implemented (8) weeks with (24) training units and an average of (3) training units per week. The vocabulary of the special exercises prepared by the researcher in the main experiment were subject to the following road map:

- Special exercises designed for disabled players in cerebral palsy, category F36-F- 37.
- .- Develop specific physical exercises in developing the special fitness capabilities of these players.
- .- Special tests to measure your physical fitness capabilities, and a test of achieving effective discus throwing distance.
- .- The duration of the vocabulary application of the proposed training method is (2) months.
- .The duration of the vocabulary for the proposed training method is (8) weeks -
- .The number of the total training units is (24) training units -

.Application days for training units Sunday - Wednesday - Friday every week -

- The total training unit time is (90) minutes. The allotted time for the main experience ranges between (35 - 45 minutes).

- The application of special exercises in an experimental manner will be after the intermediate part (warming up) and in the main part after the general physical part (i.e. the special physical part). Special exercises range from ((4 to 6)) exercise per unit.

- Emphasizing the performance of the exercises used according to the approved mechanism of the training method and according to the scientific sources that explain that.

- Adopting the principle of progression with pregnancy regularly so that it does not lead to the phenomenon of overload that negatively affects the players.

.- The low-frequency, low-intensity and recurrent training method was adopted

tests after:

Dimensional tests of the research sample were conducted immediately after the completion of the training curriculum on Wednesday 14/8/2019 and at the stadium of the Paralympic Committee in Maysan.

### Statistical means

Arithmetic mean. -

.standard deviation -

.- skewness

T for the associated samples. -

### RESULT AND DISCUSSION:

Present the results of the differences for the physical abilities and achievement tests (tribal and dimensional) for the individuals in the research sample and analyze it.

Table (3)

Shows the arithmetic mean, the standard deviations, the calculated T value), the error percentage, and the significance of the physical abilities tests and the pre and dimensional achievement of the research group

indication	sig	Calculated value (T)	Test After		Test before		measuring unit	Statistical treatments
			Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean		Variables
moral	0.000	5.903	0.687	6.44	0.721	5.97	meter	Throwing the medical ball weighing (2) kg
moral	0.001	8.552	1.08	14.60	1.14	11.40	Repeat / 10 sec	Forward reference
moral	0.004	5.914	1.213	21.14	1.302	20.74	meter	Shinaw

Significant when (Sig) > (0.05), degree of freedom (n-1) = 5-1 = 4, significance level (0.05)

It is clear from Table No. (3) in the explosive force test in throwing the medical ball its weight (2). The mean of the arithmetic mean for the pre-test of the experimental group was (5.97) and the value of the standard deviation was (0.721). The value of the arithmetic mean for the post-test was (6.44). And the value of the standard deviation was (0.687), at the level of significance (0.05) under the degree of freedom (n - 1), (5-1 = 4), and the calculated value of (T) (5.903), while the value of (sig) was (0.000) This indicates that there are significant differences between the pre and post test and in favor of the post test.

It is clear from Table No. (1) in the strength test with the velocity (forward reference Shenaw) that the mean value for the pre-test was (11.40), the value of the standard deviation was (1.14), and the mean value of the mean for the post-test was (14.60), and the value of the standard deviation was ( 1.08), while the calculated value of (T) was 8.552, while the value of (sig) was (0.001), which indicates that there were significant differences between the pre and post test and in favor of the post test.

It is clear from Table No. (1) in the achievement test that the value of the arithmetic mean for the pre-test was (20.74) and the value of the standard deviation was (1.302), the value of the mean of the post-test was (21.14), and the value of the standard deviation was (1.213), while the value of (T Calculated (5,914), while the value of (sig) was (0.004), which indicates that there

are significant differences between the pre and post test and in favor of the post test.

Through the results of throwing the medical ball weighing 2 kg, we note that the explosive strength of the upper limb muscles has contributed to throwing the disc and in a manner that serves the interrelation of the stages of performance of this activity and achieving good achievement and response, given that these variables have a link to the work of the working muscles in this limb, from Table (3) The results of the medical ball push test (2 kg) were presented and analyzed by hands, and its results showed significant differences between the pre and post tests, and the researcher attributes this development in the explosive strength of the arms to the training method applied to the research sample, as the explosive strength of the arms is one of Important capabilities in the construction of good research sample which are important in the development of the level of achievement. The development of the explosive strength of the arms also contributes to the generation of additional strength for the working muscles. Therefore, the improvement of the explosive force requires improving the strength with speed in a short time, meaning that speed plays an important role depending on the muscle strength, whether it is for the arms or the legs, as increasing the explosive strength The arms are proportional to the development of the rest of the traits, because the arms have a role in the process of motor alignment during running. This was confirmed by

(Zapartidis, elat ,2009) that strength is the most important determining factor for the speed of the athlete being an essential factor. "The researcher attributes the reason for the development of the explosive strength of the arms as well to the effectiveness of exercises with medical balls according to the network of ropes as a result of their repetition, and the gradual increase in the difficulty of performing exercises led to To the adaptation of the players, and then the development of the explosive power of the arms, and (Mohamed Reda) confirms that the adaptation of training is the sum of the changes that occur by repeating the exercise in an orderly manner. The changes in the athlete's body and organs are caused by the special requirements set by physical efforts. On his body This is due to the researcher's opinion that the basic movements practiced by the disabled disc player for the various training stages have led to the development of these movements as a result of repeated training on them, which gave integration in the application of the required strength within the time of performance and this Impact on the properties of the explosive strength of the arms of the arms and shoulders. The researcher believes that there must be a role for the arms of the arms in achieving good results in these variables, as the role of the arm movement lies in the integration of consensual movements during the last stage and the status of throwing and the transition to throwing and also In setting the final balance, and through that it becomes clear to us that the explosive strength of the members of the research sample has contributed to the integration of this physical aspect among the members of the research sample and consequently led to the development of throwing the medical ball at a weight of 2 kg to the research sample, as "the development of the necessary physical characteristics is related to Closely related to the process of developing motor skills, as the athletic individual will not be able to master the basic motor skills for the type of sports activity concerned in the event he lacks the necessary physical characteristics with this particular type of sports activity , and that the player's acquisition of physical and motor qualities is done through the use of constructive exercises Or introductory (kinetic), or by combining both types to reach the desired goal, and this indicates something that indicates that the movement of the harmonic arms during the performance has a clear role in the integration of achieving the maximum required strength that gives high rates of strength during performance and that affects the

whole of the body gain The movement and speed required to give the tool the required linear momentum and achieve the best horizontal distance. The effectiveness of discus throwing is one of the closed skills, and it is implemented under constant peripheral conditions that require accuracy in performance. The closed skills are skills that do not have many environmental requirements and if they have some requirements they are expected Like throwing a disc, and its superiority depends on the personal performance style used by the player and his physical capabilities. The player is skilled when neglecting a number of signs and instructions coming from the external environment. As for the achievement, the researcher believes that the training prepared by the researcher has contributed to the development of the achievement, as any deficiency in either the structural and motor aspects negatively affects the performance level, because there is a positive relationship between the level of physical numbers and skill preparation, and the levels of this relationship differ. According to the type of sports activity practiced, "So recent opinions emerged calling for physical preparation to go hand in hand with skillful (kinetic) preparation, as the constructive purpose and the kinetic purpose of basic exercises are one unit" , and these exercises that are consistent with the nature of the competition And its motor conditions and duties are The correct way to ensure progress in objective conditions, especially in the effectiveness of the discus throw, on which the training process depends on approaching the form and method of performance to raise the level of achievement through these exercises. Which was formulated in a scientifically sound way, based on the researcher's experience in this field. The results of the discus throw test are an expression of the integrity of the preparatory position taken by the player, who in turn will help him to take the appropriate position and in turn also prepares the muscles to produce the appropriate force and achieve speed in the working muscles. This achieves the correlation of both the linear velocity of the elbow, the linear velocity of the shoulder and the linear velocity of the trunk at Throwing performance.

#### CONCLUSIONS:

- Exercises have a positive effect in developing the physical capabilities of disabled players with disabilities, cerebral palsy among members of the research sample.

- Exercises have a positive effect in developing the achievement of discus throwing for people with disabilities. The individuals in the research sample.

**ENDORSEMENT:**

Through the researcher’s conclusions, he recommends a set of recommendations:

- The necessity of making use of the results of this study in preparing a training curriculum for the disabled in the effectiveness of discus throwing.
- Benefiting from the auxiliary training methods that contributed to this study when preparing training curricula for disabled athletes for the effectiveness of discus throwing.
- Carrying out other studies on categories of paralysis not covered by this study.

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**Annex (1)**

Training Units Form

Notes	Duration of rest	Distress	Exercise size	The name of the exercise	Exercise number
For 4 weeks	5:1	60%	40 kg x 10 x 4	Bing Press	1
	5:1	80%	2 kg x 8 x 3	Throw a medical ball weighing (2) kg	2
	5:1	65%	20 kg x 10 x 1	Forward pressure	3
	5:1	65%	20 kg x 6 x 2	Back pressure	4
	5:1	50%	2 kg x 8 x 3	Spread the arms on both sides in front of the chest in dinosaurs	5
	5:1	70%	15x3	Belly	6

Note: The required severity was calculated by the following law:

$$\frac{\text{The best achievement} \times \text{required intensity}}{100}$$

General warm-up, disk warm-up and throwing tactic

Notes	Duration of rest	Distress	Exercise size	The name of the exercise	Exercise number
For 4 weeks	5:1	95%	10 times x 2	Throw a scepter weighing 750 grams	1
	5:1	80-85%	10 times x 2	Throwing exercise more tools such as using a steel bar weighing (2) kilograms as an aid	2
	5:1	80-85%	10 times x 2	Throwing less tools such as using a 750 gram iron bar as an aid	3
	5:1	90%	10 times x 1	Use of rubber bands	4
	5:1	75%	15×2	Belly	5
	5:1	80%	15×2	Schnau	6