Rationing training according to the five levels of intensity using artificial intelligence technology (Polar Gps) and its impact on some special physical abilities and achievement in the 100m sprint (CP37) for disability

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Abstract

The process of sports training in the modern era has become subject to prior scientific planning on scientific foundations to prepare the individual athlete and bring him to the highest levels of sports form during competitions. The sport of athletics for people with special needs is no different from it for normal people, which requires high physical abilities, as these competitions, especially speed events, Physical abilities are required greatly to decide the race, and this requires coaches to be familiar with the knowledge of sports training and the special physical elements required by each event that are greatly linked to achievement, and knowledge of regulating load using smart devices and monitoring the effect of external load on internal load by following the pulse of the competitors during training. The research aims to standardize training according to the five levels of intensity using modern equipment and harnessing artificial intelligence in adjusting the training loads for these elements of the 100m event for people with special needs, category (CP) 37, using a polar (GPS) device, one of the modern technical devices. The researchers used the experimental method using the two equal groups method (control and experimental). The research population was determined from the Iraqi clubs that actually participated in the Iraqi Club Championship in the Iraqi Paralympic Committee for Special Needs (CP) category 37, and the research sample was selected by a simple random method (lottery) from the committee's players. Diwaniyah Sub-Governor (6 players) were divided into two groups (3 players), where the researchers gave two attempts for each test so that the sample size was (6 attempts for each group to avoid statistical problems. The players wore a GPS device (polar) during training and rationed the training loads. Immediateness of the physical fitness components of the event. The researchers found development and significant differences between the pre- and post-test in the variables under study, which are increased speed, maximum speed, and rapid strength of the arms and legs, as well as speed endurance, and the achievement is valid for the post-test. The research has achieved one of the goals of sustainable development, which is to serve a segment Special needs, paralysis category, CP 37, and they are an important part of society.

Keywords	Artificial Intelligence, Disability Class (CP37).

Introduction:

Through the experience of the researchers, as they worked as a former coach for the Iraqi national team, there is a weakness in the completion of the 100m race for people with special needs, category 37, compared to the numbers of previous years, and that most of the competitors record personal numbers during training that are better than their numbers during the race, despite the fact that they are burdened with large training loads during training, and the researcher instructed this. The weakness in performance during the race is due to the failure to regulate the training load with the competitor so that it matches his ability and brings him to a compatible peak during the race, as the process of sports training in the modern era has

become subject to prior scientific planning on scientific foundations to prepare the individual athlete and bring him to the highest levels of sports form during competitions. The sport of athletics for people with special needs is no different from that for normal people, which requires high physical abilities, as these competitions, especially the speed events, require great physical abilities to decide the race, and this requires coaches to be familiar with the knowledge of sports training and the physical elements required by each event. This is especially important related to achievement and energy production systems. Knowing the regulation of load using smart devices and monitoring the effect of the external load on the internal load by following the pulse of the competitors during training and racing. Through it, training loads can be regulated and many of the correct scientific foundations for training can be revealed. This is considered the real key. To ensure the success of the coach accurately.

Regulating the training of physical fitness elements according to the five levels of intensity using modern equipment and harnessing artificial intelligence to control the training loads for these elements using a polar (GPS) device, one of the modern technical devices to monitor 100m (CP) runners with special needs and identify their effect on some elements. Special physical fitness (increasing speed, maximum speed, rapid strength of arms and legs, endurance, special speed, and achievement) and what the competitor does in terms of covering distances, times, speed rates, number, and pulse during training. The goal of the research is to codify training according to the five levels of intensity using artificial intelligence (polar) technology and its effect on the elements. Special physical fitness (distinctive strength of speed, speed, and special speed endurance) for 100m runners (CP37) with, and identifying the differences between the pre- and post-test of the experimental group in some special physical abilities (speed, speed, and special speed endurance), and identifying the differences between the two tests. The posttests of the experimental and control group in some special physical abilities (fast strength and speed) and achievement. The research hypotheses were: There are statistically significant differences between the pre and post tests in the elements of special physical fitness (fast strength, speed, and special speed endurance). There are statistically significant differences between the two tests. Pre and post in the 100 m running achievement for people with special needs (CP). There are statistically significant differences between the two post tests for the control and experimental groups in the elements of physical fitness (fast strength, speed, and special speed endurance) and the 100 m running achievement.

Method and procedures:
The researchers used the experimental method with an experimental design for two groups, control and experimental, with pre- and post-tests to suit the nature of the research. 100m runners with special needs (CP37) category (6) runners represent the research population from the Iraqi Paralympic Committee, the Middle Euphrates governorates (Diwaniyah, Babylon). For the sports season (2022-2023), the sample was chosen randomly into two groups (control and experimental), so that the Diwaniyah Governorate contestants were an experimental sample (3 contestants) and the Babylon Governorate contestants were a control sample (3 contestants). Two attempts were given for each test, so that the number of the experimental sample was (6) attempts, and the control (6) attempts, and this was confirmed by (Ahmed Badr) (to get rid of the problems of small samples, increase the number of views or attempts) [1].

Table .1 shows the arithmetic mean, standard deviation, median, and skewness coefficient for the total research sample (n= 12)

No.	Variables	Measuring unit	Mean	Std. Deviations	Median	Skewness
1	height	cm	165	2.50	164.0	0.66

2	mass	kg	67.5	3.90	66	1.88
3	Chronological age	year	23.5	2.11	22.4	0.15-
4	Training age	year	5.15	1.80	4.5	1.45

It is clear from Table (1) the arithmetic mean, standard deviation, median, and skewness coefficient, where the skewness coefficients ranged between (± 3), and this gives a direct indication that the data is free from the defects of unequal distributions (1-23).

Table .2 The arithmetic mean, standard deviation, and T value for independent samples and the significance level to indicate the equality of the control and experimental groups (n=6)

No.	Variables		measuring unit	Control group		Experimental group		T value	Level Sig	Type Sig
				Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
1		speed strength, injured leg , Bounding 3 steps	meter	6.19	0.40	6.23	0.37	0.69	0.11	Non sig
	Special fitness items	speed strength for a healthy leg Bounding 3 steps	meter	7.15	0.55	7.11	0.43	1.12	0.20	Non sig
2		speed strength arm compression 10 seconds	count	9	1.0	8	1.5	1.99	0.20	Non sig
3		Increased speed 20 m	second	3.42	1.12	3.66	1.17	1.61	0. 99	Non sig
4		Speed 50m fly	second	6.67	1.09	6.64	1.95	0.99	0.160	Non sig
5		120 m stand	second	15.76	1.77	15.87	1.56	0.81	0.180	Non sig
6	Achievement	Achievement 100m	second	12.66	0.56	12.76	0.45	0.77	0.133	Non sig

Table (2) shows the arithmetic mean, standard deviation, and T value for the independent samples to demonstrate the equality of the control and experimental groups. (Ahmed Badr) states, "If the significance level is less than 0.05, then all differences were random" (1).

Tools and means of collecting data: Tests and standards: (Wajih Mahjoub) mentions (that among the tools and means of collecting information) are the following: (11)

- Anthropometric measurements. Physical tests. As shown in Table (2)
- Forms:
- Contestants data registration form. Attachment(1)

- Expert opinion survey form. Attachment(3)
- A form for registering the measurements under investigation.

Tools and devices:
Special tools for the 100m3 race, starter and launcher. Measuring tape listed in centimetres. Medical scale to measure mass to the nearest kg. Digital video camera. Stop Watch. The POLAR tracking device is supported by this company, as (Wisotzk,MD) mentions (paying attention to tools of solid origin in manufacturing to obtain accurate results). (14) iPad type (APPLE) 7 EXCEL program

Figure (1) shows the Apple iPad (7) with the software interface used (POLAR)

Figure (2) shows the polar belt

Figure .3 shows the five intensity levels according to the maximum pulse

- The full name:
- Age: day, month, year
- Weight: kg
- Maximum pulse for each physical component

Exploratory study:

The researcher conducted this experiment on Tuesday, 11-7-2023, at the stadium of the College of Physical Education and Sports Sciences, University of Al-Qadisiyah , with the following objectives: ensuring the validity of the tools and devices used to conduct the research and identifying problems and difficulties and avoiding them. Determine the time each test takes and arrange the tests for ease of measurement and to save time and effort.

POLAR wireless tracking device:

The researchers used a GPS (POLAR) device, one of the modern technical devices, to ration the training load. The device underwent testing to ensure the safety of the device and the possibility of its smooth operation before the measurement and application phase, as shown in exploratory studies, to find out all the problems and difficulties related to the device before measuring, in order to accurately and ration the training load for the players. Preparing the difficulty equation using Excel, and transferring the teleportation of the contestants to an iPad during training, as shown in Figure (1).

Main experience:
Pre-test:

The researchers conducted the tests on Thursday, November 9, 2023, on the same field as before, and conducted the following tests in the morning:
-   Test of increasing speed 20 m from a standing position, a unit of measurement in seconds
-   Test 50 m from the bird position, a second unit of measurement
-   Test the rapid strength of the arms from the forward lean position as many times as possible within 10 seconds
-   A stone for the healthy leg up to a distance of one meter. 5- A stone for the injured leg up to a distance of one meter.
-   A special speed endurance test of 120 m/s. 7- Achievement of 100 m. Cony mentions (about tests specific to athletics, including speed, which is precisely linked to specialized effectiveness) (13).

Expert opinion survey form:

• Polling the opinion of experts on the training and times of the training units by conducting a poll of experts in the field of athletics and speed training with scientific and practical experience. He prepared the training of the contestants for the experimental group and the specificity of this category of disability. (Dhari Touma, Hamid Abdel Nabi) state, "The CP 37 category is a category of disability." It has the same specificity in training and racing and requires a high-level specialist to develop curricula and training programs" (6).

The researchers prepared exercises aimed at developing each of the following physical abilities according to the five intensities after determining the maximum pulse for each physical element:
1- Increasing speed and speed
2- Strength characterized by speed (arms + legs)
3- Special speed (endurance at a speed of 100 m) and this was confirmed by (Hossam El-Din and et al.) (the importance of special speed for the effectiveness of 100 m and the special abilities associated with it). (8), where the duration of the training was (6 weeks) at a rate of (3 training units) per week, so the number of training units was (18 training units) with an average time of (20-25 minutes) with (2-3 physical components in one training unit) On the days (Saturday, Monday, Wednesday) and it was during the special preparation period of the training season, and this was confirmed by (Hossam El-Din and et al.) (the training period (6-8 weeks) is sufficient to develop these elements as they are appropriate to the age group and the level reached by the contestants) (8), Karim Abis Muhammad mentions, "The training days for people with special needs must be distributed smoothly within the small circle to achieve the desired goals of the training" (7) and arranged according to the training days as shown below:

Saturday - Speed + Quick Power

Monday - Speed + Special Speed Endurance

Wednesday - Fast strength + special speed, as (Jabbar Rahima Al-Kaabi) confirmed (that the 100m event concludes the race with a special speed endurance element, especially at the end of the weekly circuit. These exercises must be developed to be of greater benefit) (4).

Figures (6) and (5) show the fluctuation of the   total over the weeks and days

Table .3 shows the exercises, times, and number of training units

No.	Physical abilities	Number of units per week	Exercise time (minute)	Total time (minute)
2	Speed	2	8	96
3	speed strength	2	7	84
5	Special speed	2	15	180
6	the total		360 (minute)	

After determining the maximum intensity for each physical element and exercise according to the maximum heart rate by the researcher, the researcher entered the intensity for each element that was appropriate and suitable for training and entered the upper limits that must not be reached within the (POLAR) program. He also determined the minimum heart rate that must not be reached in order for the training to be effective. The degree of load was also found based on the five levels of difficulty, as (Al-Mandalawi) (Al-Janabi Akram Hussein Jabr) confirmed, "The use of physiological indicators is one of the most important foundations for understanding and being aware of the effects of internal load on external load." (10) (2).

Post-test:
After the end of the scheduled period of training, which amounted to (6 weeks), the researchers conducted the post-test and under the same conditions as the pre-test on Thursday, 12-21-2023, which are:

Morning
1- Test of increasing speed 20 m from a standing position, a unit of measurement in seconds
2- Test 50m from the flying position, the unit of measurement is seconds
3- Test the rapid strength of the arms from the forward lean position as many times as possible within 10 seconds

Evening
1- Bounding for a healthy leg, not a distance of one meter
2- Bounding the injured leg up to a distance of one meter
3- Special speed endurance test of 120 m/s
4- Achievement 100 m

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

Results:

Table .4 Presentation, analysis and discussion of the results of the variables under study between the pre- and post-measurements using the (T) test for correlated samples and showing the difference between them for the control group

No.	Variables	Measuring unit	Pre-test		Post-test		T value	Level sig	Type sig
			Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
1	Speed strength injured man	Cm	6.19	0.40	6.66	0.35	3.85	0.02	Sig
2	Speed strength for a healthy leg	Count	7.15	0.55	7.66	0.15	4.41	0.01	Sig
3	Fast strength two arms	Second	9	1.0	11	0.5	2.60	0.04	Sig
4	Increased speed 20 m	Second	3.42	1.12	3.11	0.23	2.88	0.03	Sig

Note: Rows 2-4 fall under "Special fitness items" in the Variables column.

5		Speed 50m fly	Second	6.67	1.09	6,42	0.97	4.37	0.01	Sig
6		120 m stand	Degree	15.76	1.77	15.25	1.02	4.49	0.00	Sig
7	Achiev ement	Achievement 100m	Count	12.66	0.56	12.09	0.30	2.89	0.04	Sig

It is clear from Table (5) that the level of significance value indicates the difference between the pre-test and the post-test for the flexibility test variable . The value of the level of significance to show the difference between the pre-test and the post-test for the experimental group regarding the elements of special physical fitness and achievement, as the level of significance reached between (0.00 and 0.02), which confirms that all differences are significant and in favor of the post-test and that the development of the experimental group that used pregnancy rationing based on artificial intelligence was It has developed in the post-test in the physical and special elements and achievement, and this had a great impact on the development of the special physical fitness elements, as the organized training codified according to the pulse and with modern methods had a great influence on the members of the research sample, and this is what was confirmed by (Akram Hussein Jabr Al-Janabi) "that training Specialization according to the body's needs and harmony between the internal and external load makes it possible to reach levels in a smooth and certain manner where it is not possible to train and reach high results without knowing what is happening inside the body during training" (3).

This is confirmed by (George Dintiman.) "The importance of speed and strength as a general characteristic and especially as a basic characteristic that characterizes most racers, and that this characteristic is essential in the performance of most racers because it is one of the special requirements for the event, whether it is in the phase of increasing speed during the beginning of the race, and the major role that speed power plays." This also applies to speed, where giving training sessions that suit the player's ability contributes greatly to the development of his level, because the pulse and regulating the load according to the pulse means that the training doses are compatible with the player's ability, and this includes the special speed endurance, which has also developed significantly, and this is the basis for the development of athletic achievement. (15).

Table .6 Presentation, analysis and discussion of the results of the (skills) variables under study between the two post-tests using the T-test for independent samples and indicating the difference.

No.		Variables	Measuring unit	Control group		Experimental group		T value	Level sig	Type sig
				Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
1		Speed strength injured man	Meter	6.66	0.35	6.65	0.21	4.55	0.00	Sig
2		Speed strength for a healthy leg	Meter	7.66	0.15	7.89	0.12	4.82	0.00	Sig
3	Special fitness items	Fast strength two arms	Count	11	0.5	11.8	0.66	4.99	0.00	Sig
4		Increased speed 20 m	Second	3.11	0.23	3.09	0.43	3.73	0.03	Sig
5		Speed 50m fly	Second	6,42	0.97	6.12	0.29	3.83	0.03	Sig
6		120 m stand	Second	15.25	1.02	14.89	0.77	5.10	0.00	Sig
7	Achiev ement	Achievement 100m	Second	12.09	0.30	11.88	0.31	3.35	0.01	Sig

It is clear from Table (6) that the value of the level of significance to show the difference between the two post-tests of the control and experimental group regarding the elements of special physical fitness and achievement, as the level of significance reached between (0.03 and 0.00), which confirms that all differences are significant and in favor of the experimental group. The experimental group outperformed the control group in each of the elements (increasing speed, maximum speed, and special speed endurance), as the clear difference in development confirms the role of rationing the load according to artificial intelligence techniques that characterized the experimental group, as the training was according to the ability of each competitor by determining the maximum pulse. He then determines the training of the physical element according to the five intensities and the corresponding energy system, and thus the training becomes very effective and supportive of the target element according to the individual capabilities of the contestant. This is very appropriate with contestants with special needs, as the foundations of sports training can be applied to them, taking into account the individual differences between them through training each time. According to his capabilities, and this is what many experts in the field of training, including (Bell), have confirmed (on the importance of codifying training according to these modern techniques and their importance in the development of the training process in most advanced teams) (5). This is what was confirmed by (Fadel Kamel, Amer Fakher): "Special needs sports have their own training foundations, and the coach who uses the correct sports training foundations and sets the special foundations according to individual differences through special cases with each type of disability will succeed." (9). Since the element of strength and speed is of great importance to the 100m runner, this is what (Mohamed Karim Abis) points out in their study on the importance of the special physical elements for runners with special needs, and the focus on the healthy and injured limbs according to the specificity of each event and its requirements. (7). (Halim Al-Jabali) also points out that "the competitor's good performance is evidence that he" improved the elements of the event and reduced the difference between the right

and left leg, that is, between the injured and healthy limbs, especially with the disability category (CP37), which needs to reduce the difference between the limbs, which contributed to the development of special physical elements. "And supportive of effectiveness," which contributed to developing achievement. (5). where these theories considered the most popular and common in the field of leader and will be discussed by this work (16)

As it is mentioned in the similar studies (17) , (18)

Conclusions:
According to research objectives, within the limits of the sample used, and through the statistical treatments and results that were reached, it was possible to draw the following conclusions:
- Developing training according to the five stresses using artificial intelligence technology using (a polar tracking device) had a noticeable positive effect on some special physical abilities and the achievement of the 100m event for people with special needs, category (CP) 37.
- Where the technique of rationing physical load using artificial intelligence technology was developed, the experimental group used (the (polar) tracking device), and there was a clear difference between the pre-test and the post-test for the experimental group, and it was in favor of the post-measurement.
- The experimental group outperformed the control group in the post-test in specific physical variables and achievement.
- The ability to use artificial intelligence technology devices using (polar tracking device) to regulate the load and save time, effort and high accuracy for the trainer.

Recommendations:
- Interest in using artificial intelligence techniques (polar tracking device) and using its various mechanisms in training.
- Conduct more research using modern technological means in the process and training in track and field sports.
- Applying different artificial intelligence techniques to regulate pregnancy at different age stages.

Name of the statistician: Prof. Hossam Abdel Zaid Al-Fadhli, College of Administration and Economics, Department of Statistics, Al-Qadisiyah University.

The beneficiary of the research: the special needs category in the field of track and field events in the field of local and international championships.

References:

1- Badr Ahmed. 1978, Principles of Scientific Research and Its Methods, 4th edition, Kuwait, Publications Agency, pp. 12-40.

2- Al-Janabi Akram Hussein Jabr. 2019, Technical and biomechanical analysis of the men's decathlon and women's sevens games and their training methods, Al-Diwaniyah, Niebuhr Printing and Publishing House, p. 112.

3- Al-Janabi, Akram Hussein Jabr Al-Janabi, Ali Abdul Amir Al-Hasnawi. 2016, Facilitation of muscle sensory receptors (P.N.F) between rehabilitation and training, Germany, Al-Nour Printing, 2016, p. 23.

4- Al-Kaabi , abbar Rahima. 2007: Physiological and chemical foundations of sports training, Doha, Qatar National Press, p. 23.

5- Halim Al-Jabali. 2002: Disabled Sports Classification in Athletics, Bulletin of the National Center for Sports Medicine, p. 31.

6- Dhari Touma, Hamid Abdel Nabi. BT: Sports and programs for people with special needs and their medical classifications, National Library, 1st edition, pp. 11-15.

7- Mohamed Karim Abis. 2019, Medical and Functional Classification of Athletics for the Disabled, Al-Nour Library, Baghdad, p. 65.

8- Hossam El-Din Talha, Wafaa Salah El-Din, Mustafa Kamel Saeed. 1997, The Scientific Encyclopedia of Sports Training (Strength, Ability, Flexibility), Cairo, Al-Kitab Publishing Center, p. 34.

9- Mathkoor , Fadel Kamel, Amer Fakher Shaghati. 2008, Modern trends in training (endurance - strength - stretching - cool-down), Baghdad, Al-Nour Office, p. 81.

10- Al-Mandalawi Al-Mandalawi. 1998, Tests and Measurement in Physical Education, Mosul, Higher Education Press, 76 p.

11- Mahjoub Wajih. 1988, Scientific Research Methods and Curricula, University of Mosul, Dar Al-Kutub for Printing and Publishing, p. 162.

12- Bell & james . 2007 , Advanced fitness assessment muscular balance international professionals association , P 5 .

13- cory 2007 , peen state mont alto

14- Wisotzk,MD, Victor Tseng , 2015 . Eric POCKET EMG , demos medical, New York, **15** , DO, Dane Pohlman, P 66 Sport coach.

15- George Dintiman & Rob ward .2003 :sports speed (third edition) human kinetic , P 43 .

16- Hayder Nazar Jawoosh, Hatem, A. D. H., ABDUL RAZAK, M., & MAZIN HADI KZAR. (2021). Leadership theories in management and psychologist educational filed. *Modern Sport*, *20*(2), 0109-0120. https://doi.org/10.54702/msj.2021.20.2.0109

17- Mahammed, R. F., & Kadhum, S. R. (2023). Disability-Related Self-Attendance Fear among Tennis and Table Tennis Players. Revista iberoamericana de psicología del ejercicio y el deporte, 18(3), 245-247. https://www.scopus.com/record/display.uri?eid=2-s2.0-85166321608&origin=resultslist

18- Ameer Abbas, R. A., Nasif, N. A., & Alwan, N. M. (2019). Analytical Study of Strategic Watch at Paralympic Committee Members in Iraq. Indian Journal of Public Health Research & Development, 10(8). http://dx.doi.org/10.5958/0976-5506.2019.02032.1

تقنين التدريب وفق مستويات الشدة الخمسة بتقنية الذكاء الاصطناعي (Polar Gps) واثرها في بعض القدرات البدنية الخاصة والانجاز عدو 100م (CP37) ذو الاحتياجات الخاصة

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أصبحت عملية التدريب الرياضي في العصر الحديث تخضع للتخطيط العلمي المسبق على أسس علمية لإعداد الفرد الرياضي ووصولاً بـه الى أعلى مستويات الفورمة الرياضية اثناء المنافسات وان رياضة العاب القوى لذو الاحتياجات الخاصة لا تختلف عنها للأسوياء والتي تتطلب قدرات بدنية عالية حيث ان هذه المسابقات وخصوصا فعاليات السرعة منها تتطلب القدرات البدنية بشكل كبير لحسم السباق وهذا يتطلب من المدربين الالمام بأعلم التدريب الرياضي وما تتطلبة كل فعالية من عناصر بدنية خاصة ترتبط بالإنجاز بشكل كبير وان معرفة تقنين الحمل باستخدام الأجهزة الذكية ومتابعة تأثير الحمل الخارجي على الحمل الداخلي من خلال متابعة نبض المتسابقين اثناء التدريب . ويهدف البحث الى تقنين التدريب وفق مستويات الشدة الخمسة باستخدام الاجهزة الحديثة وتسخير الذكاء الصناعي في ضبط الاحمال التدريبية لهذه العناصر الخاصة بفعالية 100م عدو لذو الاحتياجات الخاصة فئة 37 (CP) بواسطة جهاز (GPS) (polar) واحد من الاجهزة التقنية الحديثة . واستخدم الباحثان المنهج التجريبي بالأسلوب المجموعتين المتكافئتين (الضابطة والتجريبية) ، تم تحديد مجتمع البحث من اندية العراقية المشاركة فعلا في بطولة الأندية العراقية في اللجنة البارلمبية العراقية ذو الاحتياجات الخاصة فئة 37 (CP) وتم اختيار عينة البحث بالطريقة العشوائية البسيطة (القرعة) من لاعبي اللجنة الفرعية لمحافظ الديوانية بواقع (6 لاعبين) تم تقسيمهم الى مجموعتين (3لاعبين) حيث قام الباحثان بإعطاء محاولتين لكل اختبار لكي يكون حجم العينة (6 محاولات لكل مجموعة لتجنب المشاكل الإحصائية وقام اللاعبين بارتداء جهاز (GPS) نوع (polar) اثناء التدريب وتقنين الاحمال التدريبية الانية للعناصر اللياقة البدينة الخاصة بالفعالية . وتوصل الباحثان الى تطور وفروق معنوية بين الاختبار القبلي والبعدي في المتغيرات قيد الدراسة وهي تزايد السرعة والسرعة القصوى والقوة السريعة للذراعين والرجلين وكذلك تحمل السرعة الخاصة الانجاز وصالح الاختبار البعدي .وقد حقق البحث واحد من اهداف التنمية المستدامة وهي خدمة شريحة الاحتياجات الخاصة فئة الشلل cp 37 وهم جزء مهم من المجتمع .

الكلمات المفتاحية	فئة العوق (CP37)