



## TRX AND BATTLE ROPE TRAINING AND ITS EFFECT TO DEVELOP CERTAIN PHYSICAL ABILITIES AND LUNGE SKILL FOR YOUNG FENCERS

**Sajjad Nasser Owaid**

University of Kut,  
IRAQ

Corresponding Author: [sajjad.nasser@uokut.edu.iq](mailto:sajjad.nasser@uokut.edu.iq)

**Recieved:** August 19, 2025 **Accepted:** November 01, 2025

### ABSTRACT

**Background.** Fencing is a sport that has recently been characterized by progress and development in all its aspects, especially in developing its players and their technical and skill levels, and the aspects related to the physical, tactical, skill and psychological training process, as the various modern training methods and techniques have multiplied in accordance with the physical and skill characteristics of this sport and aimed at achieving progress over the competitor and winning. **Objectives.** The researcher conducted this current study to prepare a special training program that uses suspension ropes. TRX and Battle Rope training exercises were used to identify their impact to develop certain physical attributes and fencing skills among young players. **Method.** The researcher conducted this current study to prepare a special training program that uses suspension ropes. TRX and Battle Rope training exercises were used to identify their impact to develop certain physical attributes and fencing skills among young players. **Results** Results showed that training program prepared by the researcher using TRX, Battle Rope has a clear effect on some specific physical attributes selected for purpose of current research, there are statistically significant differences between pre-tests and post-tests for physical attributes power of arms and flexibility in favor of post-tests, training program prepared by the researcher using TRX, Battle Rope has a clear effect on raising performance level of the thrusting skill in fencing game. **Conclusion.** Based on these findings, the researcher recommends training program developed by this study was used to prepare young players and other categories in fencing to develop their physical and technical abilities, this training program can also be used to develop and improve specific physical abilities and technical skills of other sports.

**Keywords;** trx training, battle rope, physical abilities, lunge skill, fence.



## INTRODUCTION

Fencing is a sport that has recently been characterized by progress and development in all its aspects, especially in developing its players and their technical and skill levels, and the aspects related to the physical, tactical, skill and psychological training process, as the various modern training methods and techniques have multiplied in accordance with the physical and skill characteristics of this sport and aimed at achieving progress over the competitor and winning (Fairbairn & Bliven, 2019; Ji & Yu, 2023). The concept of modern tools and methods used in the training process has become broad to include modern and different methods and means than what is known in form and performance.

The presence of these means has become one of the reasons for the success of training programs in achieving their goals due to their positive effects. Through results that appear in various forums and championships, we find that one of the most prominent reasons for the rise and development of the level of players is the use of modern training tools and methods by coaches and knowledge of how to employ these methods and means in developing the game and players. Indeed, Many scientists are interested in developing methods and foundations to achieve training goals, because it is the basis and origin of all motor skills in the sports activities that are practiced (Mardiana et al., 2022; Sterkowicz-Przybycień, 2009).

Goal that training programs strive to achieve is to select the best methods that work to develop the player's level to achieve accomplishments during competitive matches. Leger points out that TRX exercises are a type of exercise that uses weight against gravity to build strength, balance, coordination, flexibility, develop muscle capabilities, agility, and endurance. Its performance depends on the abdominal and back muscles using different exercises, and it can be used by everyone in different ways without discrimination of age or gender, depending on the individual differences between practitioners (Hariyanto et al., 2021).

One of the basic rules in sports training is that it is not possible to train the player only on the basic skills of the game, but rather it must go beyond that by training him to develop and improve these skills and maintain the highest level of skill performance throughout the player's practice of the game in order to ensure that he possesses the highest level of skills (Haidar et al., 2024; Hardinata et al., 2024; Hariyanto et al., 2023). Ehab points to the utmost importance of the elements of strength, speed and agility in the sport of fencing, as the motor performance of the skills of throwing the spears cannot be accomplished well unless the muscles involved in the muscular action have a strong foundation of the muscular strength necessary for the strong and rapid contraction to accomplish the motor duty. Hence lies the importance of the research, as the researcher sees the need to identify the effect of some modern methods in training, including TRX, Battie Rope training, on developing some physical abilities in fencing players.

Progress and achievement in sports field has become purely scientific in nature, relying on studies and research and exploiting the overlap between sciences, using more theories and information that ultimately aim to develop sports levels and achievements in various sports. Through the work of the two researchers as teachers and coaches of the fencing game, they found that there is a slowdown in the training process and the use of modern methods

to develop general and game-specific physical abilities. Therefore, the research decided to investigate the effect of one of the modern training methods on some physical abilities that play an important role in developing the fencing player and his performance of the game-specific skills.

Research objectives are developing a training program using suspension ropes TRX, Battle Rob for the youth players of Karbala Fencing Club. Identifying impact of TRX and Battle Robe training on developing certain physical abilities of young fencing players in Karbala Club. Identifying impact of TRX and Battle Robe training on developing certain physical abilities of young fencing players in Karbala Club. Research hypothesis there are statistically significant differences between pre-test and post-tests in level of some physical abilities of young fencing players, in favor of post-tests.

### *Terms Definition*

TRX, Battle Rope Training: This is a group of exercises that use body weight against gravity to build strength, balance, coordination, and flexibility. Equipment is divided into suspension training TRX and strength rope training Battle Rope. These exercises are among the latest tools that help develop specific physical abilities and thus raise level of skill performance in athletes. (Abdul-Mu'ti: 2016: 45) Physical abilities: A set of physical qualities and functional capabilities in adapting to incentives that appear with presence of permanent motivations and determining them according to level after maintaining balance of functional systems, i.e., complete preparation of body and mind to achieve best results. (Hassanein: 1997: 89) Lunge skill: It is one of basic skills in fencing. Lunge movement is one of the most important movements in fencing and one of offensive movements that are executed on opponent. It is a forward-directed movement performed with front foot from ready anticipation stand, as well as when advancing forward or retreating backward. Back foot contributes to push in it. It is considered a basic movement for attack with aim of reaching opponent's leg target with tip of player's weapon.

## **A. METHOD**

### *Research Methodology*

Choosing the right methodology is usually a precise and objective way to reach a solution to problem. Subject of this study was effect of training program on developing physical aspect. Methodology is defined as the method used by the researcher in studying problem to discover facts and find solutions. Therefore, the researchers used experimental method with a single group and pre- and post-tests in their current study, as it was suitable for research objectives and sample. Due to limited number of young players in this game, research community was deliberately chosen by the researcher, and they are players of Karbala Youth Club in game of fencing, whose total number was 7 players, and they represent community in full with a percentage of 100%.

### *Prepared training program*

Training program, which involves hanging from ropes TRX, Battle Rope, includes a set of standardized exercises aimed at developing some of physical abilities of young fencing players, namely power of arms, movement speed, and flexibility, which have a direct impact on their skill performance. Undoubtedly, this program, which is one of the most important basic means followed by the researcher, was developed to achieve desired research objectives. Period for implementing proposed training program was determined by the researcher in cooperation with a group of experts and specialists. Period was set at 6 weeks for every three training sessions, meaning that total number of training units would be 18 sessions.

### *Physical Tests*

**Flexibility test:** Purpose of test: Measuring flexibility of arm and thigh in forward bending movements from a standing position. Tools: Wooden graduated scale graded ruler 30 cm high. A bench or chair that can bear the weight of the laboratory, on which the ruler is mounted so that the zero mark is at the highest level of the chair's edge. Performance description: subject takes a standing position on the edge of the bench so that the feet are touching the sides of the scale. The subject bends the torso forwards and downwards so that the fingers are in front of the scale. From this position, the subject tries to bend the torso as far as possible with force and slowness, noting that the fingers of the hands are at one level and move downwards parallel to the scale.

**Speed-strength test for the arms:** Purpose of the test: Measuring the speed-strength of the arms. Tools: Swedish bench for weights 10 kg. Performance description: When starting, the arms are in full support, lifting a weight of (10 kg). The player is asked to lower the bar and raise it upwards along the length of the arm support like this. Registration: number of times the action is performed is calculated within (20 seconds).

Testing kinetic speed of lunge movement for fencing players proposed. Test objective: Measuring the kinetic speed of the stabbing motion. Test application requirements: test application requires the presence of four people, one of whom is the (test manager), another is the (timer), another is the (recorder of the number of correct touches), and the last is an evaluator of the correct tackling action. line of preparation and the line of appeal: These lines are drawn with a piece of chalk after the tester takes the ready position (provocation) in front of the wall target and extends his used arm so that his thumb touches the target, then the tester extends his hind leg until he reaches the stabbing position. Test director marks the lunge line by drawing a line 20 cm long.

The test subject then stabilizes the hind foot and moves the front leg backward until it reaches the ready position. The test director then marks the ready line for the front foot by drawing a line 20 cm long. Test description: test subject stands in the ready position in front of the wall target, and a mark is placed on the ground to determine the position of the feet in the ready position so that the test subject can touch the target with the thumb after performing the stabbing motion, which was determined by the test director, as well as the stabbing line of this test subject who is ready to perform the test. The fingers should be held together in a position similar to the grip of a fencing weapon, and the thumb should be used to touch the wall target. When the test subject hears the start signal, the test subject performs

as many correct consecutive touches as possible within ten seconds and at the highest possible speed, noting that the thumb touches the target, as the touch is considered nullified if the thumb does not reach the wall target. The tester must keep his back foot steady during the performance.

The tester must move his front foot from the ready line to the thrust line when performing each thrust and then return to the ready line. The tester must return his used arm to a bent position. The player is given two attempts, and the best attempt is taken. Registration method: The number of correct touches to the target within (10) seconds.

**Table 1.** Normal distribution, using Pearson's skewness coefficient, represents physical and skill level of research sample.

No.	Tests	Mean	Standard deviation	Loom	Torsion coefficient
1	Flexibility	52.075	2.006	48	0.522
2	Arms power	12,378	1.468	11	0.269
3	Lunge skill	5.438	0.8	6	0.354

Skewness coefficient ranged between (- + 1) for tests, indicating homogeneity of the sample.

#### *Methods of collecting information*

Scientific sources. The World Wide Web (Internet). Personal interviews. Equipment and tools: A wall target with a single circle drawn on it with a diameter of (20) cm. Registration form. Stopwatch. Marks:

#### *Exploratory Experiment*

The researcher conducted a pilot study on two players from Karbala Fencing Club team on Sunday, August 20, 2023. Ten days later, the researcher repeated tests on same players. Aim was to verify validity of physical and skill tests used, as well as to determine time required to perform those tests.

**Table 2.** Validity and reliability coefficient of tests

No.	Test	Validity coefficient	Stability coefficient
1	Flexibility	0.87	0.85
2	Arms power	0.83	0.80
3	Lunge skill	0.77	0.82

#### *Pre-tests*

The researcher conducted pre-tests on the research sample on Tuesday, August 22, 2023, and they ended on Thursday, August 24, 2023.

#### *Implementing prepared training program*

The researcher began implementing training program used. Regarding suspension ropes TRX, Battle Robe mentioned previously on Saturday, 8/26/2023, program lasted for six weeks from above date until Tuesday, 10/10/2023. The researcher took into account and

prepared all appropriate conditions for its application in order to obtain positive results from it.

*Post-tests*

On Wednesday, October 11, 2023, the researcher conducted post-tests on research sample and obtained data on players' levels with respect to variables under current study.

*Statistical methods*

Mean. Standard deviation. Torsion coefficient. Pearson's simple correlation coefficient. t-test for correlated samples.

**B. RESULTS AND DISCUSSION**

*Presentation, analysis, and discussion of physical test results*

**Table 3.** Shows means, standard deviations, and calculated and tabulated t-values for physical tests.

No.	Physical tests	Pre		Post		(t) value		Sig. level
		M.	St.d	M.	St.d	Calculated	Tabular	
1	Flexibility	52.075	2.06	60.34	1.22	5.503		Sig.
2	Arms power	12,378	1.46	15.23	1.17	7.214	3.111	Sig.

Table (3) shows that mean value of flexibility in the pre-test reached (52.075) While it was (60.34) in the post-test, and with a standard deviation in the pre-test that reached a value of (2.006), and the post-test that reached a value of (1.22), the table also indicated that the values of the arithmetic mean for the speed-strength arm test reached (12.378) in the pre-test, and in the post-test that it reached a value of (15.23), and the standard deviation reached a value of (1.46) in the pre-test and in the post-test that it reached a value of (1.17). Through these data, the table showed that the calculated value of (t) for flexibility was (5.503), and for speed-strength arm it reached (7.214), and they are greater than the tabulated value of (t) of (3.111), which indicates that the level of significance is significant and in favor of the post-tests.

The researchers attribute this development to the suitability of their designed exercises and their clear impact on overall physical performance, particularly on flexibility and speed-strength. Speed-strength characteristics do not develop spontaneously. They can only be achieved through systematic and regular training according to scientific formulas and the selection of appropriate exercises. Furthermore, developing hand-strength characteristics requires regular and repeated training. This physical attribute requires consistent increases and repetitions.

This is what they found in the training program they developed, which utilized suspension ropes. Flexibility characteristics improved significantly. This is because the rope exercises, correctly designed by the researchers, helped stretch the muscles and ligaments to the required degree. Mr. Hara describes how this occurred: "Flexibility and strength training must be combined. Athletes often fail to achieve wide ranges of motion due to a lack of strength in the muscles responsible for movement." (Al-Bayati, 1983: 88)

**Table 4.** Means, standard deviations, and calculated and tabulated t-values for lunge skill test

No.	Test	Pre		Post		(t) value		Sig. level
		M.	St.d	M.	St.d	Calculated	Tabular	
1	Lunge skill	5.438	0.8	6.222	1.18	4.402	3.111	Sig.

Table 4. shows mean scores for the tackling skill in the pre-test (5.438) and the post-test (6.222). The standard deviation was (0.8) in the pre-test and (1.18) in the post-test. Therefore, the calculated t-value was (4.402), which is greater than the critical t-value of (3.111), indicating a statistically significant level of improvement in favor of the post-test results. The researchers attribute this to the positive results of their training program, which demonstrated an improvement in the players' tackling skills. This aligns with the opinions of many experts and coaches who believe that "training improves both physical attributes and skill performance" (Alawi, 1986:12).

### C. CONCLUSION AND RECOMMENDATIONS

Based on data obtained from conducting tests and after processing it statistically, the researcher reached following conclusions. Training program prepared by the researcher using TRX, Battle Rope has a clear effect on some specific physical attributes selected for purpose of current research. There are statistically significant differences between pre-tests and post-tests for physical attributes power of arms and flexibility in favor of post-tests. Training program prepared by the researcher using TRX, Battle Rope has a clear effect on raising performance level of lunge skill in fencing game. There are statistically significant differences between pre-test for skill of stabbing and in favor of post-test. Based on conclusions drawn by the researcher from this current study recommended that training program prepared in this study is used for purpose of preparing young players and other categories in game of fencing to develop their physical and skill abilities. This training program will help develop and enhance specific physical abilities and technical skills for other sports.

### D. REFERENCE

- Fairbairn, J. R., & Bliven, K. C. H. (2019). Incidence of shoulder injury in elite wheelchair athletes differ between sports: A critically appraised topic. *Journal of Sport Rehabilitation*. <https://doi.org/10.1123/jsr.2017-0360>
- Haidar, M. D., Dewantara, J., Eken, Ö., Stojanović, S., & Agustina, D. (2024). Proprioceptive neuromuscular facilitation (PNF) stretching in futsal sport: How does it affect recovery pulse rate after high intensity interval training? *Tanjungpura Journal of Coaching Research*, 2(1), 23–30. <https://doi.org/10.26418/tajor.v2i1.77617>
- Hardinata, R., Rinto, R., Deski, D., Hartikasari, H., Nofita, T., Hendra, H., Pardi, P., & Cadiente, D. S. A. (2024). Physical fitness analysis of elementary school students: a study to design an exercise program. *Tanjungpura Journal of Coaching Research*, 2(1), 13–22. <https://doi.org/10.26418/tajor.v2i1.76118>

- Harianto, E., Gustian, U., Supriatna, E., Shalaby, M. N., & Taiar, R. (2023). Stimulating game performance skills in students: experimental studies using net games. *Tanjungpura Journal of Coaching Research*, 1(2), 63–70. <https://doi.org/10.26418/tajor.v1i2.65009>
- Hariyanto, A., Prakosa, M. W. B., & Sholikhah, A. M. (2021). Optimalization of reaction time through imagery and concentration training in fencing. *MEDIKORA*, 20(1), 36–43. <https://doi.org/10.21831/medikora.v20i1.36962>
- Ji, H., & Yu, L. (2023). Comprehensive Physical and Psychological Training of Modern Pentathlon Athletes. *Revista Brasileira de Medicina Do Esporte*, 29. [https://doi.org/10.1590/1517-8692202329012022\\_0308](https://doi.org/10.1590/1517-8692202329012022_0308)
- Mardiana, M., Lestari, Y. N., & Prameswari, G. N. (2022). Quality of Diet and Nutritional Status on Male Young Athletes in Central Java. *Jurnal Kesehatan Masyarakat*. <https://doi.org/10.15294/kemas.v17i3.33771>
- Sterkowicz-Przybycień, K. (2009). Body composition and somatotype of the elite of Polish fencers. *Collegium Antropologicum*.