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**Original article**

## **Special exercises to improve the execution of leg techniques in school judo**

### **Ejercicios especiales para mejorar la ejecución de técnicas de piernas en judocas escolares**

### **Exercícios especiais para melhorar a execução de técnicas de pernas em judocas escolares**

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## **ABSTRACT**

Insufficiencies detected in the performance of leg techniques of the school judokas of Pinar del Río motivated the realization of this research that has as objective: to elaborate a set of special exercises that contribute to the development of the work of the coaches with this group of techniques to improve the performance of the 14 athletes of this category. At the beginning of this study, observations were made to training sessions, control stops and preparatory competitions to obtain direct information about the way these actions are manifested. An interview with the coaches was also used to find out their knowledge, criteria and performance in working with these techniques and the survey was used to assess the athletes' knowledge about the importance of technical preparation in these actions. In addition, a measurement was made by means of a technical test to know the behavior of the execution of these in the athletes under research, in which the variables analyzed were: score obtained, total of actions and form of execution (direct, combination or as a counterattack). This study allowed the knowledge of the

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deficiencias presented by these athletes in the execution of the leg techniques, which influence in a negative way in the competitive results since these are carried out very frequently during the combat for their link with other techniques in the execution of combinations and counterattacks. This work is a valuable tool for the work of coaches, aimed at the technical preparation of judoka.

**Keywords:** Special exercises; Technical preparation; Legs techniques.

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## RESUMEN

Insuficiencias detectadas en la realización de técnicas de piernas de los judokas escolares de Pinar del Río motivaron la realización de esta investigación que tiene como objetivo: elaborar un conjunto de ejercicios especiales que contribuyan al desarrollo del trabajo de los entrenadores con este grupo de técnicas para mejorar la ejecución de los 14 atletas de esta categoría. Al inicio de este estudio, se realizaron observaciones a sesiones de entrenamiento, topes de control y competencias preparatorias para obtener información directa sobre el modo en que se manifiestan estas acciones. También se utilizó una entrevista a los entrenadores para conocer sus conocimientos, criterios y desempeño en el trabajo con estas técnicas y la encuesta para valorar el conocimiento de los atletas acerca de la importancia de la preparación técnica en estas acciones. Además, se practicó una medición mediante una prueba técnica para conocer el comportamiento de la ejecución de estas en los atletas motivo de investigación, en la cual las variables analizadas fueron: puntuación obtenida, total de acciones y forma de realización (directa, combinación o como contraataque). Este estudio permitió el conocimiento de las deficiencias presentadas por estos atletas en la ejecución de las técnicas de piernas, las cuales influyen de forma negativa en los resultados competitivos ya que estas se realizan con gran frecuencia durante el combate por su vinculación con otras técnicas en la realización de combinaciones y contraataques. Este trabajo es una herramienta valiosa para la labor de los entrenadores, dirigida a la preparación técnica del judoca.

**Palabras clave:** Ejercicios especiales; Preparación técnica; Técnicas de piernas.

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## RESUMO

As insuficiências detectadas no desempenho das técnicas de perna das judocas escolares de Pinar del Río motivaram a realização desta investigação que tem como objetivo: elaborar um conjunto de exercícios especiais que contribuam para o desenvolvimento do trabalho dos treinadores com este grupo de técnicas para melhorar o desempenho dos 14 atletas desta categoria. No início deste estudo, foram feitas observações a sessões de formação, paragens de controlo e concursos preparatórios para obter informações diretas sobre a forma como estas ações se manifestam. Uma entrevista com os treinadores foi também utilizada para descobrir os seus conhecimentos, critérios e desempenho no trabalho com estas técnicas e o inquérito foi utilizado para avaliar os conhecimentos dos atletas sobre a importância da preparação técnica nestas ações. Além disso, foi feita uma medição através de um teste técnico para conhecer o comportamento da execução destes nos atletas sob investigação, no qual as variáveis analisadas foram: pontuação obtida, total de ações e forma de execução (direta, combinada ou como contra-ataque). Este estudo permitiu o conhecimento das deficiências apresentadas por estes atletas na execução das técnicas de pernas, que influenciam de forma negativa nos resultados

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competitivos, uma vez que estes são feitos com grande frequência durante o combate pela sua implicação com outras técnicas na realização de combinações e contra-ataques. Este trabalho é um instrumento valioso para o trabalho dos treinadores, destinado à preparação técnica do judoca.

**Palavras-chave:** Exercícios especiais; Preparação técnica; Técnicas de pernas.

## INTRODUCTION

The current demands of the sport, in which judo is included, its dynamics, the daily influence of the advances of science, technique, the new rules, the improvement of the current sport results, require a fundamental step as it is the improvement of the same one, as much of the level of preparation of the sportsmen, as of all the technical, tactical and methodological system of the preparation *Hernández et al., (2018)*.

Competitive success in sports has its fundamental bases in the complex process of preparation of athletes. One of the links in the process of directing sports training is planning, since, based on this, it will be known what a coach is looking for with his or her athlete, what the particular characteristics of the athlete are, the sport in question, the place where he or she is going to train, among other factors to be taken into account, when starting a training session *Padilla, J. (2017)*.

To correctly correct the process of a sport training, one must be able to appreciate the modifications of the functional state that it determines. The control of the training process constitutes a determining factor along with other factors that intervene in this process, such as: organization, preparation contents, training and competition loads, methodology, socio-political and environmental conditions, among others *Videaux (2018)*.

The sport technique is the conscious and oriented realization of the movements and actions of the sportsman, directed to the conscience of a certain effect in the exercises related to the deployment of volitional and muscular efforts.

In the case of judo, it should contribute to solve a series of complicated tasks, increase the effectiveness, using the maximum forces, improve the economy of forces, and increase the speed and accuracy of movements under the changing conditions of sport competition.

In the case of leg techniques, they are characterized by using this part of the body in different ways, as an obstacle, reaping, sweep and hooking to one or both legs of the opponent. During the combat, they have very varied forms, both in their reiteration and in their form of manifestation, being the explosive character of the movements what is common in all the cases. So we are of the opinion that the activities related to this group of techniques in Judo trainings should be simple until the athletes have a good control in their execution and then make them more complex.



Judo as a combat sport has within its main characteristics an acyclic movement structure, with a variable intensity, a powerful aerobic-anaerobic energy behavior, where most of the decisive actions of the combat take place in fractions of seconds. Therefore, this sport demands from the athlete maximum efforts in the physical, physiological and psychological and technical-tactical fields.

This sport is characterized by the constant need to adapt to different opponents and situations while exploring the actions with which athletes obtain greater performance. This last factor forces the athletes to choose among multiple resources according to their possibilities and the limitations of the opponent, which requires the teacher to offer a variety of work situations that develop the personal abilities of the athlete.

Taking into account all these transformations, together with the new characteristics of the competitive system, more and more demanding, it has been provoked the search of solutions from all the edges of the phenomenon, with the objective of being every day more precise in the achievement of a judo athlete more prepared to obtain superior results, according to the current moments.

**Matvéev (1983)** proposes:

"the transformation of habits, which no longer contribute to the growth of brands and the formation of new habits that respond to a special brand, are primordial tasks in the technical preparation of the athlete and those that must be resolved in the first half of the training cycle".

**Copello. M. (2003),**

"When making a general classification of the movements that are executed in judo, it divides them into: offensive and defensive. The offensive ones are those that are directed to project".

In addition, it describes that the forms of projection in judo are characterized because during its main part a flexion and torsion of the trunk is executed, accompanied by an extension of the legs, others depend on a wide extension of the trunk, also they can be realized, using a leg as support while the other one realizes a reap, a hook or a sweep.

**Pardo (2016)** provides specific exercises for the technical preparation of Tashi waza in judo, where it presents a range of methods, means and organizational procedures most frequently used for the improvement of the teaching-learning process of the technical-tactical actions that contribute to the preparation of the athletes.

These authors, by means of the developed scientific results, expose actions and procedures necessary for the integral preparation of judoka, but they do not deepen as for the exercises for the execution of the techniques in judo, specifically the techniques of legs, the development of their abilities in the daily training and their application in the combat, according to the potentialities of their judokas.



The correct use of the special methods and means help during the training process to develop the skills of grabbing, adopting positions, anticipating, combining, choosing the right technical action and the right moment for the attack, conducting the situations presented in the competition, working with the defense, dodging, facing, deceiving, counterattacking and attacking at the right time, among others. It is assumed the order of complexity of the tactical exercises, supported by the theory of **Matvéev, (1983)** and the proposal of use of technical-tactical exercises of **Jiménez (1991)**.

**Jiménez (1991)** assumes as tactical exercises for each content within the groups of Judo techniques during the training, with a view to the XI Pan-American Games, Havana 91; he places them in each stage of the preparation and organizes them methodologically with the objective of guaranteeing the transit of judokas through the levels of familiarization, reproduction, application and creation, which has to strengthen predominantly the applicative and the creative as a contemporary didactic demand, allowing to specify the depth and complexity with which the cognitive activity of judokas is developed.

On the other hand, the own author refers that the use of special and specific exercises that develop the main muscles that intervene in the motor gesture, the correct execution of the technical actions of Judo and the development of abilities in the tactical actions are of great importance for the process, nevertheless, these exercises are limited in their appearance in almost all existing bibliography of Judo since the preparation is mainly a secret in its form of accomplishment by strategic questions.

In Cuba, some exercises are known by experiences acquired from experienced trainers and others from research works carried out; such is the case of **Falero, González and Viscay (2010)**, which provide a series of specific exercises for the "base actions", according to the biomechanical and functional chains of the technical action that help the development of judoka technical preparation.

"Thinking is valued as the most important process for an adequate technical-tactical execution of the athlete, which links the tasks, conditions and ways of solution. It implies planning actions, based on foresight and immediate anticipation, which have an individual and collective character; its particularity depends on the type of sport" (**Díaz 2015**).

All these works contribute to the improvement of the pedagogical practice of the trainers, as well as the treatment of the abilities associated to the movements of attack of techniques of legs and their structural changes, in correspondence with the initial conditions of the environment and the functional dynamics of the competitions where the judoka must have a coherent behavior.

Judo athletes from Pinar del Rio province have always been characterized by their high technical level, specifically by a good execution in the leg techniques; that is why a significant number of them went through the national pre-selections, both youth and adults, with relevant results in national and international competitions, counting on the territory with several Central American, Pan-American, World Championships and Olympic medalists.



However, in recent years, there has been a decline in the technical level of the athletes who represent the province in the various national competitions that are convened. This has been having a negative influence on the competitive results of the territory, with the school category being the one that has presented the most deficiencies in terms of deterioration in the technical level. There is a decrease in the level of technical performance in the execution of leg techniques, one of the main terms in the outcome of the combat in search of a victory.

In the school categories, where the technical tests are evaluated, Pinar del Río province has not been among the vanguard territories in this sense, it is considered as a criterion that the average results are below the national average. Qualifications are achieved between regular and bad, all of which brings about that the technical and competitive results of these athletes are not the most expected ones in the last five years. Due to the importance of the leg techniques in a judo combat, the variety of actions that can be executed with them and the deficiencies detected in previous observations to training sessions, limits and preparatory competitions, it is necessary to carry out this work, which has as an objective: to elaborate a set of special exercises for the improvement of the execution of the leg techniques in the school judokas of Pinar del Río.

## **MATERIAL AND METHODS**

For this research, it was worked with a population integrated by 14 judo athletes of the school category of Pinar del Río and six coaches in charge of carrying out the training process in Judo in these categories. They are between 12-15 years old. They have four or more years of experience in the practice of the sport, with a level in judo, reached between yellow belt and green belt (5th and 3rd Kyu respectively).

At the same time, six coaches were considered: four of them from the high performance in the province, Eide "Ormani Arenado" (100 % are licensed in Physical Culture and one of them is a Master). The other two coaches involved in the research work in the sports project "Roberto Amarán", (both are Graduates in Physical Culture and one of them is a Master). 100 % of the coaches have more than ten years of experience in this work.

Three sets of exercises with their specific objectives and contents were elaborated to contribute to the development of the technical preparation of these athletes. For the accomplishment of the same ones they were not needed auxiliary means, only the judogui and all will be made in the area of training (tatami).

Scientific methods of the theoretical order were used, such as: historical-logical; inductive-deductive and the analysis of documents. From the empirical order, they were employed:

The *observation* was carried out in a covert way by two teachers of this sport, with experience in the school and youth categories, which were prepared previously. It was applied in ten training sessions, two preparatory competitions and four confrontation stops, carried out by these athletes to verify the existing difficulties in the execution of the leg techniques.



In a general sense, the greatest difficulties revealed by the observation were present in the four indicators evaluated in this research, behaving as follows:

**Displacements:** most of these athletes joined or crossed their legs in this basic element, did not bend their legs correctly and looked down, when the view should always be forward in this basic element.

**Imbalances:** at the time of performing the techniques, the athletes inclined their trunks backwards (losing their balance), which prevented them from performing them correctly; on other occasions, there was too much separation between the support leg and the attack leg, and they did not work enough with their arms to unbalance the opposite.

**Moment of attack:** the main deficiencies in this element were marked in difficulty, in the placement of the attack leg, such as; leg flexion at the moment of performing the technique, leaning the knee on the mat, not placing the leg in the form of a spoon and kicking the partner's leg when they had to sweep it.

**Projection:** in this last basic element and no less important than the ones mentioned above, the greatest difficulties presented by the athletes were essentially in the final moment of the technique since in most of the opportunities the projections were not made on the whole back of the opponent.

For this purpose, a protocol was drawn up and the variables analyzed were: total actions, form of execution (direct, combination or as a counterattack) and the score obtained.

These indicators are evaluated as good (B in Spanish), when the projection is of Ippon; regular (R in Spanish), when the projection is of Wazzari and bad (M in Spanish), when no result is achieved. With these criteria, the observer issues his evaluation, according to the result achieved.

*Interview:* the six coaches were applied to find out their knowledge and criteria about the problem under investigation. This interview was structured in a questionnaire of five questions.

**Survey:** it was used to assess the mastery of the 14 athletes about the importance of technical preparation of Ashi waza actions in this sport.

**Measurement:** it was used to verify the execution of Ashi waza techniques of these athletes in different moments of their sports career, where there were more problems and where they were better, through a diagnosis. In order to compare the technical dimension, we took into account as indicators the grips, displacements, imbalances, moment of attack and projection. To measure the physical dimension, the speed of reaction, rapid strength and explosive force were taken into account. For the psychological dimension, the indicators were attention and motivation.



## RESULTS AND DISCUSSION

### Results of the observations

In the ten training sessions observed, the total number of actions performed was 4025, where 2050 (51 %) were performed in direct attacks, 1030 in combinations (26 %) and 945 in counterattacks for 23 %, which shows that these athletes use leg techniques to a greater extent in direct attacks and counterattacks are where these techniques are least used. In addition, 1006 were evaluated from B (Ippon) for 25 % of the total, 1409 reached R (Wazzari) for 35 % and 1610 were M (null) for 40 %.

In the 4 control matches observed, 2010 actions were executed in their totality, where 1306 were carried out in direct attacks for 65 %, 402 in combinations for 20 % and 302 as counterattacks for 15 %, where, of them, they were evaluated as B 442 for 22 %, 764 as R for 38 % and 804 as M for 40 %. In these matches, the athletes prefer to perform the direct attacks more frequently and the performance of these techniques as counterattacks with those less selected by them.

Finally, in the two preparatory competitions, the athletes performed 1250 actions distributed in 806 direct attacks for 64 %, 398 actions in combinations for 32 % and 46 counterattacks, counting 4 %, were evaluated as B 225 for 18 %, 487 as R for 39 % and 538 actions evaluated as M for 43 %.

**Table 1.** - Results of the carried-out observations

Actions	Evaluation									
	S. E	CP	Match	Actions	B	%	R	%	M	%
<b>Direct attacks</b>	10	2	4	1295	236	18	309	24	750	58
<b>Combinations</b>	10	2	4	893	198	22	223	25	472	53
<b>Counterattacks</b>	10	2	4	991	205	21	326	33	460	46
<b>Total</b>	10	2	4	3356	684	20	879	26	1793	54

In valuing the results from the ten observations made at the training, in the four control matches and the two competitions in the preparatory period of the school judokas of Pinar del Río, the following insufficiencies were found, in the execution of the leg techniques:

- Deficiencies in the displacements to carry out the techniques.
- Deficiency in the execution of the imbalances at the moment of attack.
- Insufficient coordination to execute the combinations.
- Limitation in detecting the moment of attack to interrelate one technique with the other.
- Inadequate positioning of the attack leg.
- Poor positioning of the support leg.
- Weakness of the support leg at the moment of attack.
- Weakness of the attack leg at the moment of attack.



- Insufficient speed of reaction and agility to make counterattacks to the techniques of leg.

### Results of the interview with the coaches

The general analysis of the coaches' responses yielded the following elements:

- All the interviewees (100 %) confirm that they attach great importance to leg techniques.
- The demonstrative-explanative method predominates mainly in the interviewed trainers (66 %) over the fractional method (34 %).
- The 83 % of those interviewed answered that they performed the exercises for everyone on the team in the same way, while the other 17 % stated that they performed them taking into account the technical and competitive level of the athletes on their team, assigning them different tasks, according to these characteristics.
- The 66 % of those interviewed stated that they were familiar with material that would guide exercises in terms of improving the execution of leg techniques for this group of athletes (PIPD), according to their age, and 34 % said they were not aware of the existence of materials that address the subject.

### Results of the survey to the athletes

Of the athletes surveyed, six (42 %) prefer Ouchi and Kouchi gari as their leg technique, four (29 %) selected Deashi barai and Sasae and the remaining four (29 %) prefer Osoto gari.

The leg techniques are most frequently used by seven (50 %) athletes in direct attacks, while in combinations, four (29 %) opt for their execution and in counterattacks they are most frequently used by three athletes for 21 %.

The 100 % of the athletes give great importance to these techniques in a combat.

The techniques that they consider to have greater difficulties are: Hiza guruma and Harai tsurikomi like this (ten athletes for 71 % of the total) and four (29 %) state that the most difficult for their execution is Kosoto gake.

The 42 %, six of the surveyed athletes, prefer the shoulder techniques; above the hip techniques four, (29 %), of legs also 4 athletes with 29 % of the total.

As an answer to the last question of this survey, six athletes (42 %) value their execution of the leg techniques as Bad, while, of the remaining eight, four (29 %) were evaluated as regular and the same number, with the same percentage, were evaluated as good.

Given the results reached in the diagnosis and after being evaluated by the coaches' group and the Provincial Technical Commission, it was decided to elaborate a proposal of varied exercises aimed at the improvement of the execution of leg techniques in the school judokas of Pinar del Río.



Related to the above, it was possible to verify, through the review of documents, when analyzing the current Integral Program of Preparation of the Judo Athlete that in none of the previous ones appear exercises to improve the execution of the different techniques in specific; in these, only the methodological orientations are referred to in a general way for the teaching of the techniques in this sport. Therefore, it reinforced us even more the need of our proposal to improve the execution of the techniques of legs in the athletes of the school category, which will allow to raise the technical level of our athletes, which will contribute, in this way, to improve the competitive results of judo in our province.

### **Special exercises to improve the performance of leg techniques in school athletes from Pinar del Rio**

The exercises listed below have their content aimed at improving the quality, in the execution of leg techniques, coordination, strengthening of different muscle levels involved in the execution of the same, as well as the proper placement of the support leg and attack in each specific technique.

For the accomplishment of these exercises, they should be kept in mind that they should be included in sessions of training of the special varied and special preparation, the forms to practice that can be in isolated or chained actions, working in couples fundamentally. These exercises will be carried out along the length or width of the tatami, according to the physical possibilities of the athletes.

#### **Special exercises**

##### **Set 1. For direct attacks**

Objective: strengthen the work of the support leg through the different placements of the attack leg, according to the different techniques.

Contents:

- Keiken or small saltos to the front and back of Ouchi gari on uke along the tatami and when arriving at this one to carry out the projection of this technique.
- Keiken in front and back of O soto gari on uke along the tatami and when arriving at the tatami to project this technique.
- Keiken in front and back of Uchi mata on uke along the tatami and projecting this technique on the tatami.
- Keiken in front and back of Kouchi gari on uke along the tatami and when he arrives to the tatami he projects this technique.
- Keiken in front and back of Ouchi and Kouchi gari on uke along the tatami and on reaching the tatami projecting the last technique.

These exercises after the first 3 weeks can be done to the sides and in circles.



## Set 2. For combinations

Objective: improve coordination in combination actions with leg techniques, taking into account the logical reaction of the opponent.

Contents:

- Uke moves semicircular right and left, Tori does Ouchi gari for one side and Kouchi gari for the other side of Uke with the same foot without stopping the movement.
- Same as above, Tori does Harai goshi for one side and Osoto gari for the other.
- Same as above, Tori does Ouchi gari for one side and Uchi kills for the other.
- Uke moves semicircular right and left, Tori does Ouchi gari for one side and Sasae tsurikomi ashi for the other side of Uke with the other foot without stopping the movement.
- Uke moves semicircular, Tori does Osoto gari-Kosoto gake.

These exercises after the first 3 weeks can be done to the sides and in circles.

## Set 3. For counterattacks

Objective: improve the speed of reaction in counterattacks of leg techniques in real combat situations.

Contents:

- Uke moves to the front making O Uchi gari, Tori makes Kosoto gake projecting at the end.
- Uke moves to the front performing Ouchi gari, Tori performs Tokui waza.
- Uke moves to the back performing Kouchi gari, Tori performs suwami gaechi and then Deashi barai.
- Uke moves to the back performing Kouchi gari, Tori performs Sasae tsurikomi ashi to the leg she attacks.
- Uke moves to the side performing Deashi barai, Tori performs suwami gaechi, and then Deashi barai.
- Uke moves to the front performing Kosoto gake, performs Ouchi gari.
- After the first 3 weeks, these exercises can be performed to the sides and in circles.

## Methods and aids

- Direct visual method.
- Verbal and sensoperceptual method.
- Standard repetition method.
- Variable standard repetition method.
- Judoguis, tatame, whistle and chronometers.

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## Methodological indications

- It should be taken into account that athletes should know how to perform the simplest variant of these exercises, before starting them, so that there is no risk of injury or muscle overload.
- In order to perform these exercises, it should be taken into account that the athletes have a level of general physical preparation that allows them to perform these actions correctly; at the slightest sign of deformity of the technique, the exercise should be stopped.
- The first 3 weeks will be performed only in 2 directions (front, back).
- These exercises should be performed in all directions (forward, backward, right and left, and in circles), always starting with the easiest directions for the athletes.
- The exercises should always begin without the resistance of the partner and increase the resistance until reaching 90 % or more of resistance, making it as close as possible to the competition.
- It is not necessary to perform all of these exercises in the training session for the goal of improving special strength to be met.

As a result of the applied scientific methods, it was proved the importance of these exercises in the improvement of the efficiency of the leg techniques in the school athletes of Pinar del Río.

All the above mentioned allowed the consolidation of the domain of leg techniques, attending to the demands and regularities with which they are evaluated in the process, as well as to the specific characteristics of judo combat at present.

## REFERENCES

Diaz, P. (2015). *BOXING and MMA. Entrenar para Ganar*. Pedro L Diaz. Recuperado de

[https://books.google.com.cu/books/about/BOXING\\_and\\_MMA\\_Entrenar\\_para\\_Ganar.html?id=U3MkjgEACAAJ&source=kp\\_book\\_description&redir\\_esc=y](https://books.google.com.cu/books/about/BOXING_and_MMA_Entrenar_para_Ganar.html?id=U3MkjgEACAAJ&source=kp_book_description&redir_esc=y)

Falero González, J. R., González Estrada, J. A., & Viscay Ruiz, G. (2010). Propuesta de Ejercicios Auxiliares para el mejoramiento del Seoi Nage en los judocas de la academia Provincial de Ciudad Habana. *EFDeportes.com, Revista Digital. Buenos Aires*, 15(144).

García Hernández, J. M., Machuat Santana, G., Fernández Jimenez, B., & Toledo Díaz, P. O. (2018). La preparación técnico-táctica de los boxeadores espirituanos. *PODIUM - Revista de Ciencia y Tecnología en la Cultura Física*, 13(2), 150-159. Recuperado de <http://podium.upr.edu.cu/index.php/podium/article/view/772>

García, Y. P. (2016). Ejercicios especiales y específicos para la preparación técnica en el tachi waza de judo. *PODIUM - Revista de Ciencia y Tecnología en la Cultura Física*, 11(3), 122-131. Recuperado de <http://podium.upr.edu.cu/index.php/podium/article/view/666>

<http://podium.upr.edu.cu/index.php/podium/article/view/961>



Janjaque, M. C. (2003). El Judo: Control del rendimiento táctico. *Lecturas: Educación física y deportes*, (60), 22. Recuperado de <https://dialnet.unirioja.es/servlet/articulo?codigo=498497>  
Jiménez Amaro, J. S. (1991). *Programa de preparación del deportista* (Tomo I y II). Ciudad de La Habana, Cuba: Comisión Nacional de Judo.

Padilla, J. (2017). *Planificación del entrenamiento deportivo*. Venezuela: Editorial Episteme.

Videaux, J. L. P. (2018). Modelo evaluativo de preparación física general y especial para boxeadores de la categoría de mayores. *EmásF: revista digital de educación física*, (51), 104-116. Recuperado de <https://dialnet.unirioja.es/servlet/articulo?codigo=6360326>

**Conflict of interests:**

The authors declare not to have any interest conflicts.

**Authors' contribution:**

The authors have participated in the writing of the work and analysis of the documents.



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