

Strength, coordination, and ball exercises to improve muscle strength in baseball pitchers.

Ejercicios de fuerza, coordinación, y con pelotas para mejorar la fuerza muscular en los lanzadores de béisbol.

Alberto Ramírez-Arévalo¹, Luis Manuel Arias-Martínez²

¹ Ms. Sc. Assistant Professor. Granma University. Cuba.

² Ms. Sc. Auxiliary Professor. Granma University. Cuba.

Email:

aramireza@udg.co.cu

lariasm@udg.co.cu

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ABSTRACT

These transformations must generate a dynamic that is open to all agents and actors that interact in the local environment, in order to guide and define coherent and viable development strategies that allow physical and mental well-being in accordance with the real conditions of the population. . The objective of this proposed methodology is to increase the quick strength and muscular strength of the pitchers of the provincial baseball academy of Granma. For them, several exercises and several author criteria were used to form this methodology that is aimed at performing exercises that are closely related to the usual exercise performed by the thrower, only it will be performed with weights.

RESUMEN

Estas transformaciones deben generar una dinámica que esté abierta a todos los agentes y actores que interactúan en el entorno local, con el fin de orientar y definir estrategias de desarrollo coherente y viable que permitan un bienestar físico y mental acorde con las condiciones reales de la población. Esta metodología propuesta tiene como objetivo lograr incrementar la fuerza rápida y la fuerza muscular de los lanzadores de la academia provincial de beisbol de Granma para ellos se utilizaron varios ejercicios y varios criterios de autores para conformar esta metodología que va encaminada a la realización de ejercicios que guarden estrecha relación con la habitual que realiza el lanzador solo que se realizara con pesas.

Keywords

Baseball; Fast Strength; Muscular Strength; Methodology; Special exercises; Pitcher.

Palabras clave

Béisbol; Fuerza Rápida; Fuerza Muscular; Metodología; Ejercicios especiales; Lanzador.

INTRODUCTION

Baseball is a collective, team sport, of variable character and contextualized among the group of "ball sports", and according to Yañez, J. it is classified as a sport with a tactical purpose. Cited by (Fung, T., 1999:61). Their game, in a general sense, in our country, is distinguished by the use of force on offense and the little use of speed in tactical combinations between the batter and the runners, offensive and defensive plays supported by traditional tactical schemes, among Other features.

In this regard, Castro, F. (2009) stated "(...) we must apply more technical and scientific methods in the development of our athletes, we must revolutionize the preparation and development methods of our athletes, not only in the ball, but in all sporting disciplines.”

DEVELOPMENT.

How to increase the muscular strength of the pitchers at the Granma Baseball academy?

Characteristics of the exercises, methodology.

The semi-squats will be performed with the feet placed at the approximate width where each thrower performs the usual landing when completing the throwing movement, the hands will be placed along the entire bar so that the arms are in a position which is usually used by pitchers at the end of power or as it is known as the cross position

Pivot leg curls:

This exercise will be performed starting from the relatively stable balance position as it is known, the thrower will have support of one of his legs on the ground, that is, the pivot leg and foot, since the pendulum leg goes to be found flexed with an angle of approximately 90 degrees in relation to the thigh.

Assaults:

The rounds will be carried out, starting from the balance position described above, and taking an opening approximately to that which each thrower performs in the fall with the foot of the pendulum leg; It will be emphasized that the throwers work on this exercise leaving their trunk as erect as possible.

Bows to the pendulum leg, after landing, with pivot foot rotation:

This exercise will be similar to the previous exercise, with the only difference that the bow will be performed towards the front or pendulum leg with flexion of the trunk and rotation of the foot of the pivot leg.

Movement of the active upper limb and passive upper limb:

This exercise will be performed starting from the position known as the cross, where both the active and passive upper arms will perform the work corresponding to each of them, taking care at all times to align the shoulders when performing the throwing movement.

Coordinated work of the arms and legs in the vertical:

This exercise will start from the side position and the thrower will work on the movement by raising the pendulum leg with flexion of the pivot leg, in addition to the work of raising the arms until reaching the position known as the cross.

These exercises will be worked with weights of ten percent of maximum strength. For all exercises, work in such a way that no errors are made in the execution of the technique so that this results in better use of strength and coordination of movements.

Description of the strength exercises performed.

“...Standing strength

Standing, the bar rests on the shoulders, the arms are raised upward until they are fully extended. Normal or open grip and medium grip are used. High supports are used as a medium. The athlete must remain straight, without leaning the trunk backwards or using his legs to help him. This exercise develops the muscular strength of the triceps, deltoids, upper fibers of the trapezius, coracobrachialis, pectoralis and latissimus dorsi among other muscles of the shoulder girdle.

Most common mistakes

- a) Push with your legs.
- b) Uneven extension of the arms.
- c) Do not bring your elbows out.
- d) Bring the trunk back.

Half squat from behind

The bar is located behind the head supported on the shoulders, the legs are bent to an angle of more or less 90 degrees between the legs and the thighs, it is performed behind the head and a large weight is used, therefore generally more than 100% of the maximum result in the back squat. The grip is normal or open and the grip is medium. The quadriceps and glutes are mainly developed, as well as the biceps femoris.

Most common mistakes

- a) Rest on the balls of your feet.
- b) Do not open your knees.

c) Loosen your back.

d) When recovering, do so on tiptoe. Fuerza acostado.

It is performed in a horizontal plane, lying on a lying bench or something similar and with the bar on the chest or on the supports of the bench. With a small load the extensors of the arms, the pectoralis major and minor muscles and those mentioned above develop very well. The grip is normal, open or inverted and the grip is medium.

Most common mistakes

a) Do not finish extending your arms.

b) Hit the chest with the bar (rebound).

c) Lower the bar with your elbows in front.

d) Perform trunk arching.

Strength preparation – quick in the gym:

Ejercicios	%	Tandas	Rpt.	Esfuerzo	Duración del estímulo	Frecuencia
Fuerza parado	70 – 80	3 – 5	5 – 10	Máx. veloc.	13 semanas 35 semanas	3 PP 2 PC
Media cuclilla	70 – 80	3 – 5	5 – 10	Máx. veloc.	13 semanas 35 semanas	3 PP 2 PC
Fuerza acostado	70 – 80	3 – 5	5 – 10	Máx. veloc.	13 semanas 35 semanas	3 PP 2 PC

Throwing balls of various weights and sizes:

1. Throwing the ball with a low step in the pitcher's front position but without pendulum at 30, 60, 90 and 120 feet from home plate.
2. Throwing the ball sideways in the main phase of the throw with both feet placed 30 and 60 feet from home plate.
3. Throwing the ball from the front with full movement of the pitcher at 30 and 60 feet from home plate.
4. Throwing the ball from the wild noup zero side position at 30 and 60 feet from home plate.
5. Throwing the ball from the middle wild noup position at 30 and 60 feet from home plate.
6. Throwing the ball from the kneeling position 30 and 60 feet from home plate.
7. Throwing the ball from the kneeling position 30 and 60 feet from home plate.
8. Throwing the heavy rubber ball against the wall 30 and 40 feet from home plate.

Special exercises to perfect the mechanics of movements:

Assaults to the front with arm movements above the head, with hands intertwined, when performing the assault, the hands are raised to the head and when executing the next assault, they are lowered to the level of the navel.

Pendulum with assaults in front of both legs.

Assault forward with the opposite leg to the one throwing, reaching the main phase of the throw t flexed.

Assaults forward with the opposite leg to the one throwing, with a pendulum reaching the flexed t.

Assaults forward with the opposite leg to the one throwing, with a pendulum reaching the flexed t passing the arm.

Exercises with the athletic bullet or pellets.

Impulsion of bullets facing the area in the form of a step (left leg in front) this exercise will be executed as follows. The bullet will be placed in the right hand at the height of the right shoulder, the feet in step shape, the opposite hand to the one throwing with the palm facing the area, a vigorous extension of the arm in which the bullet is located will be carried out., with the aim of making an impulse that is as distant as possible.

Muscles that are strengthened: thigh, leg and foot flexors, deltoids, trapezius, supraspinatus, infraspinatus, pectorals, dorsal, intercostals, serratus of the hand and wrist among others.

Propulsion of the bullet from the normal position to throw: this exercise will be performed from the normal position that the thrower performs the throw, emphasizing the coordination of movement, the bullet will be in the throwing hand, the feet in the traditional guainot form.

Muscles that are strengthened: flexors of the thigh, leg and foot, deltoids, trapezius, supraspinatus, infraspinatus, pectorals, dorsal, intercostals, serratus of the hand and wrist, anconeus, posterior ulnar, anterior ulnar, finger extensors, abductor of the little finger, opponens pollicis, deep flexors of the fingers and others.

All exercises where the bullet is worked will be performed in the most comfortable position in which no muscles or joints are affected.

All exercises with balls will be performed in the general and special preparation stage as follows. In the general, work will be done every day in which the pitcher makes 100 pitches in a distribution according to the coach, and in the special preparation stage 120 pitches.

Anthropometric profiles.

Height, Weight, Fat %, AKS index.

These indicators were taken into account to know the results obtained in the tests by the athletes after applying the methodology for rapid strength training.

General characteristics of the sample studied

From a population of 25 athletes, 100 percent, the 12 athletes, 55 percent, who participated in the aforementioned series, of them five left-handed, 13 percent, were intentionally selected for the application of this instrument who were athletes from the throwing area of the Granma academy baseball team, some variables were taken into account at the time of beginning the application of the methodology whose state would make it difficult to achieve the objectives or simply determine that the results could be different, the cases They were characterized according to the following aspects:

INDICATORS TO ASSESS

Anthropometric profiles, physical and technical directions of training and control and effectiveness indicators.

Pedagogical tests will be carried out, which are: anthropometric profiles (height, body weight, fat percentage and AKS index): physical direction (standing strength, lying strength, semi-squat and maintenance of speed in throws): technical direction (coordination of the mechanics of throwing from the front and to the side, work on the pivot leg, work on the trunk muscles and work on two supports when releasing the ball with emphasis on the foot of center) : control and effectiveness indicators (bases per game average (PBJ), (walks average per batters faced (PBBE), earned runs per game average (PCL) and (hitting average per game (AVE).

CONCLUSIONS

1. A methodology was developed for the preparation of Rapid strength in the pitchers of the Granma Baseball academy, based on a theoretical-methodological conception with a multilateral, integrative and systemic approach that assumes anthropometric profiles, physical directions and training techniques. and the control and effectiveness indicators for the training of the muscular planes that intervene in the action of throwing, reveals the particularities of the treatment of this capacity and is structured from a theoretical-cognitive apparatus that bases the methodological-instrumental and functional apparatuses , with the precision of its specific objective, and that defines its components, the phases for its application and the general indications for its application.

2. In the research, consultation with experts shows that the methodology has adequate practical applicability and responds to the needs of Rapid strength planning for high-performance Baseball, since their evaluation criteria in 95% are between very suitable and appropriate.

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