

## Modelo de planificación para acentuar la resistencia aerobia en los futbolistas juveniles

### Planning model to accentuate aerobic resistance in youth footballers

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#### RESUMEN

La presente investigación está dirigida desde la Universidad Estatal de Milagros en Ecuador and responde a la necesidad de mejorar la resistencia aerobia en los futbolistas juveniles a partir de un modelo de planificación que permita dosificar sin and con pesas ejercicios adaptados al deporte objeto de estudio, se trabajan otras capacidades físicas que complementan la preparación de los atletas. Su objetivo consiste en elaborar un modelo de planificación para acentuar la resistencia aerobia en los futbolistas juveniles a partir de ejercicios alternativos para lograr resultados satisfactorios en competencias. En el desarrollo de la misma se utilizaron métodos del nivel empírico and teórico que permitieron interpretar los datos necesarios para elaborar la propuesta and corroborar la factibilidad del modelo propuesto.

**Palabras clave:** Resistencia aerobia; Capacidades físicas; Modelos de planificación; Preparación física; Ejercicios alternativos

#### ABSTRACT

This research is directed from the State University of Milagros in Ecuador and it responds to the need to improve the aerobic resistance in youth soccer players based on a planning model that allows dosing without and with weights adapted exercises to the sport object of study, other physical abilities that complement the preparation of athletes are worked. Its objective is to elaborate a planning model to

accentuate aerobic resistance in youth soccer players from alternative exercises to achieve satisfactory results in competitions. In its development, empirical and theoretical level methods were used that allowed interpreting the necessary data to prepare the proposal and corroborate the feasibility of the proposed model.

**Key words:** Aerobic resistance; Physical abilities; Planning models; Physical preparation; Alternative exercises

## INTRODUCTION

The current demands of training in soccer field have needed to model training models to satisfy the improvement of conditional capacities in order to obtain excellent results in the competition scenario, in this case aerobic resistance, accompanied by new forms of training and supported in resources of exercises with weights to start their physical and technical state in the field of competition.

In correspondence with these requirements, taken from the authors (Puygnaire, Sánchez, & Cabezón, 2003), state that aerobic resistance is a concept widely discussed in the literature. Some of the most conclusive definitions have been postulated by well-known authors. For Zintl (1991), resistance is “the ability to physically and physically resist a load for a long time” (Álvarez, 1983) considers it as “the ability to make an effort of greater or lesser intensity during the greater possible time.”

These same authors state that “Physical exercise requires muscular functioning and this in turn needs an energy contribution. Depending on the type of the exercise itself, the agency will manage the implementation of different routes that will provide us with the necessary energy means to meet the demands demanded. These energy pathways are: the aerobic and anaerobic pathways.” (Puygnaire, Sánchez, & Cabezón, 2003)

Anaerobic metabolism Its fundamental characteristic is the absence of oxygen in all the processes that are carried out to provide energy to the organism. In this metabolism, depending on the duration and intensity of the exercise itself, two different forms are revealed: lactic and lactic anaerobic, the study of which is not the subject of this article. (Puygnaire, Sánchez, & Cabezón, 2003)

Aerobic metabolism It is made up of the processes managed by the body to obtain ATP in the presence of oxygen. Chronologically it would go after the previous forms. Aerobic energy processes are in the range of those exercises that require energy for a long period of time. For this they can use either fats or glucose aerobically. Fats as a substrate have practically unlimited reserves and is of considerable importance in football since its metabolism acts as the basis of activity and as a recovery support for anaerobic actions. The aerobic route is more energy efficient, does not cause negative terminal products, but requires time to put into action, so it is typical of these long-lasting and low intensity efforts. Although the performance relative to time is lower, the absolute energy amount is considerable, being used for those efforts that need a lot of energy without haste over time. (Puygnaire, Sánchez, & Cabezón, 2003)

However, in order for these characteristics to be functional, it is necessary to model other forms of training that conform to current realities and with the help of other frequent exercises with and without weights to accentuate the preparation towards the competition to obtain excellent results.

## **METHODS**

**Historical-logical:** this allowed contextualizing the object and its antecedents regarding the use of aerobic resistance in soccer players.

**Analysis - Synthesis:** contributed with precision the extensive study of the bibliography used for this research

**Systemic-structural-functional:** it determined the relationships, structure and hierarchy between the different aspects proposed in the training planning model for soccer players.

### **Empirical methods and techniques**

**Unstructured observation:** allowed to verify the quality in the execution and application of the exercises, together with the proposed model

**Mathematical-statistical:** by means of descriptive statistics, a set of data was ordered, analyzed and represented, in order to describe its characteristics; the study is complemented with inferential statistics, with methods and procedures.

Techniques

**Survey:** it was applied to soccer athletes with the objective of knowing the different ways to plan aerobic resistance.

**Document analysis:** it was used with the objective of having a clear position of the most up-to-date theoretical references in correspondence with aerobic resistance and planning models: articles were reviewed in scientific journals, doctoral and master's thesis, manuals, curricula and comprehensive athlete preparation programs.

**User criteria:** its purpose was directed to evaluate the feasibility of the model and the proposed exercises, and to characterize the initial and final state of the object of investigation.

## RESULTS

The model for planning the aerobic resistance is the result of the experience of the authors of this research, joined with the criteria of different authors such as: (Villar, 1983); (Astrand and Rodahl, 1985); (Román, 1986); (Brandet, 1988); (Bosco, 1991); (Cuadrado, 1992); (González, 1992); (Cuervo, Fernández and Valdés, 2003); (Figueredo, 2015); (López C. 1994); (López, J. 1994) and (Paredes, 1994). En cuanto a la planificación del entrenamiento se tomaron como referencia autores como: (Ozolin, 1983); (Seirul-lo, 1987); (Ranzola and Platonov, 1993); (Fernández, 1993); (Gorostiaga, 1993); (López, 1993); (Zeeb, 1994); (García, Navarro and Ruiz, 1996); (Bangsbo, 1997) and (Benítez, and Aisterán, 2001). The contributions of the mentioned authors made possible a correct conception and structuring of the proposed mode

The planning model consists of several facets that allow coaches to identify with it and to have constancy of methodological aspects that are oriented according to the work directions.

Age	Body Weight	Size	
<b>Results by exercises</b>			
Prom or lying strength	Standing strength	Deep squat	Pull with slight flexion
100 Lb o kg	60 Lb o kg	140 Lb o kg	150 Lb o kg

Example: 60x the value chosen in the work area or intensity 52 and its result is the weight on the lever. But if you observe the amount of repetitions that are offered on those trained by the weightlifters.

TOTAL	REPT	WEIGHT MÁX	AREAS OF INTENSITIES				
			Zone-1	Zone-2	Zone-3	Zone-4	Zone-5
			Strength resistance		Fast Strength	Explosive Strength	Maximum Strength
			Charge accumulation		Increased muscle mass		Total Performance
EJERCICIOS	Ranks %		50-59,9	60-69,9	70-79,9	80-89,9	90-100
	% Value to use		52	63	75	83	90
	Batches /Series		1-8	2-8	3-6	2-6	1-3
	Repetitions		6-12	6-10	6-10	4-6	1-3
ARM .( until 8)							
Standing strength	60 Kg		31 2/10				
lying strength							
BICEPS							
TRICEPS							
ROWING							
PULLOWER							
Subtotal							
TRUNK (until 8)							
Pull							
HIPEREXT.							
Subtotal							
LEGS ( until 8)							
KNIFE P.							
JUMPING							
Subtotal							
COMBINED ( until 8)							
BÍCEPS reverse							



TRÍCEPS reverse							
Subtotal							
Totals							

**Note:** at the end of jumping 2 series or batches of / 10 reptiles, and run a speed race 3/30 meters:

### **Conceptual apparatus of the methodological alternative**

The model for the planning of aerobic resistance combined with exercises without and with weights is based on the historical-dialectical foundations when conceiving the object of study in its constant progress and transformation allows having an integrating structure of a creative nature and humanizes the trainers to plan objectively.

### **Instrumental body of the methodological alternative**

The exercises respond to the needs categories that are manifested in the research and its constant systematity and although by relation of the dialectical processes they are allowed to vary their approaches according to their needs.

### **Presentation of the exercises**

The exercises can be increased, no more than 8 per body parts, that is, on the day you should not go over 8 exercises for arms, trunk, and leg and combined.

How to do it: multiply the maximum result x any value of the work area  
That is,  $80 \times 50 = 40$   $80 \times 60 = 48$  is rounded up to 50  $80 \times 70 = 56$  is rounded up to 55, which is the closest.

### **CONCLUSIONS**

In the consulted bibliography for this research, limitations were found in the ways and means to solve the subject under study, which joined to the diagnosis applied, revealed the need to develop a planning model that allow, from alternative exercises, to accentuate aerobic resistance in the youth soccer players of Ecuador. The results obtained after applying the proposal allowed to confirm its feasibility.

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