27 - ASSESSMENT OF BIOLOGICAL AGE AND SENSITIVE PERIODS AS ONE INFLUENCE IN THE FITNESS OF SOCCER ATHLETES IN JUVENILE AND CHILDREN

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INTRODUCTION

Soccer is a sport that fascinates more and more young and adolescents people, because the widespread diffusion of the performance of athletes, especially the Brazilians, and also for high wages that the press releases especially the athletes who play in Europe, and thus becomes one of professions most desired by the young male population. Many of them are candidates. For ideal player for Bangsbo (2006), the ideal soccer player must have good understanding of tactics, be technically proficient, mentally strong, to relate well with teammates and have high physical ability, in this last item, athletes that since early years receive appropriate training and the possible responses of the body at every stage of their preparation, will be able to achieve better organizational adjustments and reach optimal levels in relation to motor capacity.

According to Carvalho (1994, cited in Denis Conception, 2001) motor skills can be classified as follows: conditional (endurance, strength and speed), and coordinative (determined by the processes of organization, control and regulation of the movement).

Yet for Meinel (1971, cited in Denis Conceição, 2001) "[...] in the sporting gesture, the thing is a predominance of one over the other, when referenced to a goal of the work done "as well as motor capacity can be developed along the desired goal, and we add that to Lev Pavlovich Matveev (cited Stefane Dias, 2008) "only 1 out of 1,000,000 people have the talent to manage the unique and creative form the 5 physical, skills, and then will be able to be a sporty SE PHENOMENON and develop their potential in IDEAL SPORT. "

According to Carvalho (1994, cited in Denis Conceição, 2001) the development of motor capacity resulting from the interaction between endogenous, determined primarily by the growth and maturation, and exogenous factors relating to the stimuli from the environment, and that this development does not proceed continuously, but for periods, these periods of development are mentioned by Carvalho as the sensitive stages "are certain times of the process of human development on which it was submitted to certain stimuli, adapting to react with more intensity than any other period. "

Therefore, the biological features of each age group and individual differences should be the basis for the distribution of training loads do not exceed the limit of physiological adaptation of young athletes. In addition, the more prematurely begin the specific training (fitness-specific mode), the less chance the young one will have in terms of motor experience (in other sports), resulting in low quantity and poor quality of movement. (Filin and Volkov, 1998 apud magazine digital.Año7.N ° 37 | Buenos Aires, Juniode2001 © 1997-2001 Derechos reservados).

Thus, the early specialization, if on the one hand takes the athlete to achieve good results in the lower categories (children and young people), on the other hand limits the sports career of it, thus the specific loads applied before the appropriate time generate physical and emotional stress sharp, moving young athletes away from training and competitions (Filin and Volkov, 1998 apud magazine digital.Año 7.n 37 | Buenos Aires, Junio de 2001 © 1997-2001 Derechos reservados). The coach, therefore, is responsible for the correct programming of the training (coherent distribution of general and specific cargo,of the volume and intensity, compliance with the biological features, efficiency of teaching influences corresponding to more favorable stages of each age group, etc. .),the motor education, intellectual and moral development of young people, not allowing the abuse of malicious leaders or uninformed leaders put talent to lose. (Filin and Volkov, 1998; FILIN, 1996; SCHMOLYNSKI, 1992, MAGILL, 1984; FERNANDES, 1979).

MATERIALS AND METHODS

1 - SAMPLE

The sample was characterized by 33 soccer male athletes (n=33) football men, linked to the Toledo Colônia Work from Toledo city, state of Paraná, in Brazil, 18 (n=18) athletes from the juvenile category (16 and 17 years old), with an average age of 16.2 and 15 (= 15) athletes from the children's category (14 and 15 years old), with an average age of 14.7.

2 - STANDARDS AND CRITERIA FOR INCLUSION AND EXCLUSION

The assessment of biological age was performed on a single date for each category, and were excluded from the athletes who have the habit to wax.

3 - PROTOCOL TO THE BIOLOGICAL AGE EVALUATION

For the assessment of biological age, we used the of Dorokhova's protocol(1970), determined through self-assessment of secondary sexual characteristics, in this case for boys (pubic hair, axillary hair and nipple), which are classified according to the stage and grades, and score the sum of tables 1, 2and 3, are compared to assessment table of agreement between biological and chronological age for boys, table 4, which will result in corresponding biological age, as you can see below:

Signal	*Stage*	*Level*	*Feature*
Puble Hair	P0	0	Obsence of hair
	P1	1	Isoled in Center part
	P2	2	Significant layer of hair
	P3	3	Hair through out the pubis

Table 1 - Characteristics of pubic hair.

Signal	stage	Level	Feature
Axillary hair	Ax0	0	Obsence of hair
	Ax1	1	Isolates and thin hair
	Ax2	2	Significant layer of hair
	Ax3	3	Long hair all over the armpit

Table 2 - Characteristics of axillary hair.

Signal	Stage	Level	Feature
nipple	C0	0	Nipple small nipple without pigmentation
	C1	1	swell
	C2	2	Dark pigmentation, some hair around the nipple

Table 3 - Characteristic of the nipples.

	Age	pubic	Axillary	nipple	Points
I	10	0	0	0	0
	11	0-1	0	0	1
	12	0-1	0-1	0	2
II	13	1	1	1	3
	14	2	1-2	1	4-5
	15	2-3	2	1-2	5-7
III	16	3	3	2	8
	17	3	3	2	8
	18	3	3	2	8
	19	3	3	2	8

Table No. 4 - Consistency between chronological age and biological age

4 - PROTOCOL FOR THE ASSESSMENT OF BODY COMPOSITION

We determined the following variables for each athlete: measured the skin fold with compass “cescorf” with an accuracy of 1mm, and the protocol proposed by Faulkner, 1968, where F% = [(TR + SI + SB + AB) x 0.153 + 5, 783].

Total weight, measured in a Filizola scale with accurate to 100g.

Total height by vertical metric scale with an accuracy of 1mm.

RESULTS AND DISCUSSION

In the juvenile and child categories, respectively was observed, the average biological age of 14 (±0.51) and 14.6 (±0.69) and the average chronological age was 14.7 (±0.45) and 16.2 (±0.74) see tables 01 and 02. You can then detect that despite the two categories have different average chronological age, the assessment of, average biological age had a minimum difference (0.6) between them.

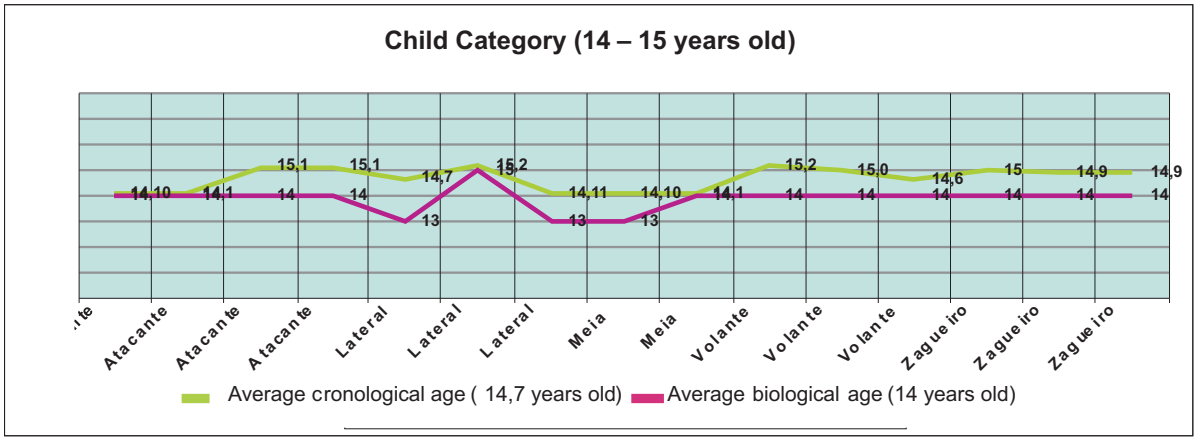

Table 01 - Chronological Age and Biological Age Relationship of Child Category.

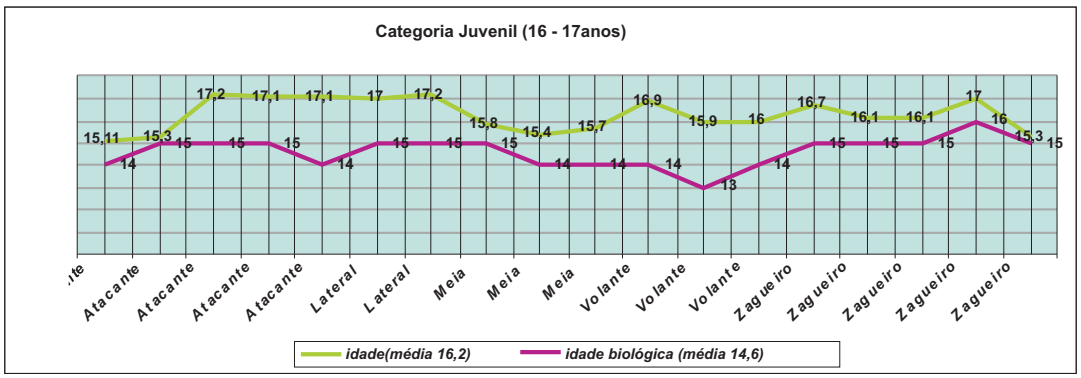

Table 02 - Chronological Age and Biological Age Relationship of Juvenile Category.

The priority capacity of training according to the sensitive periods (Table 03), in both categories are: endurance, coordination, speed / strength and flexibility.

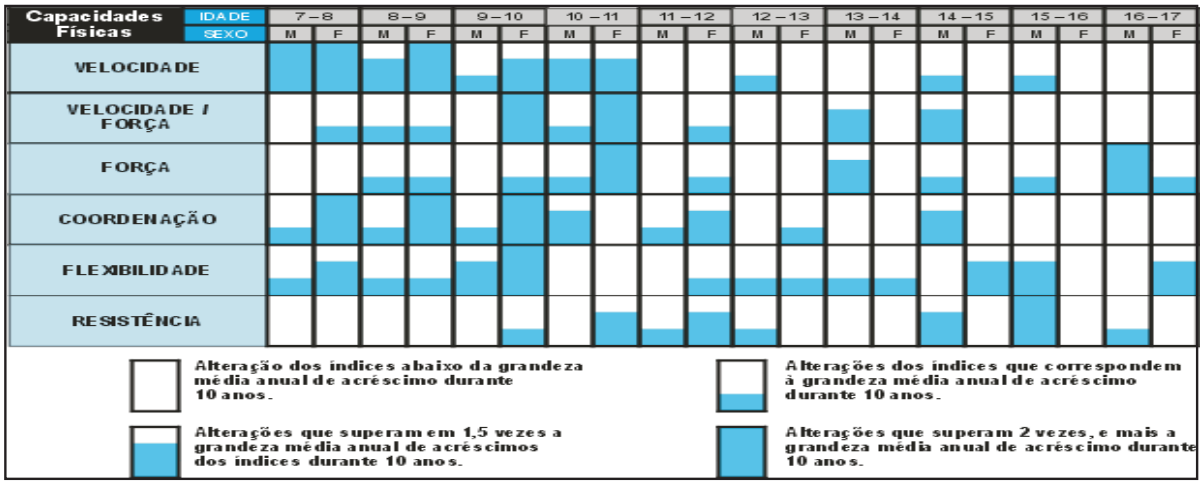

Table 03 - Sensitive Periods

In Table 04 and 05 is related to the height of athletes, the maximum height (97%) for biological age, and the maximum height (97%) for chronological age, data from the table of "physical growth curves of boys used as normative references associated with the measures of height for age derived from studies by the CDC, "(Guedes & Guedes, 2006, p. 66), to compare the age, height of athletes in both categories, which the better one that identified.

We can see that the children's category, a total sample of 15 athletes (n=15), 7 (n=7) is close to the height related to biological age. In the juvenile category with the total sample of 18 athletes (n=18), 10 (n=10) athletes have the next height related to biological age.

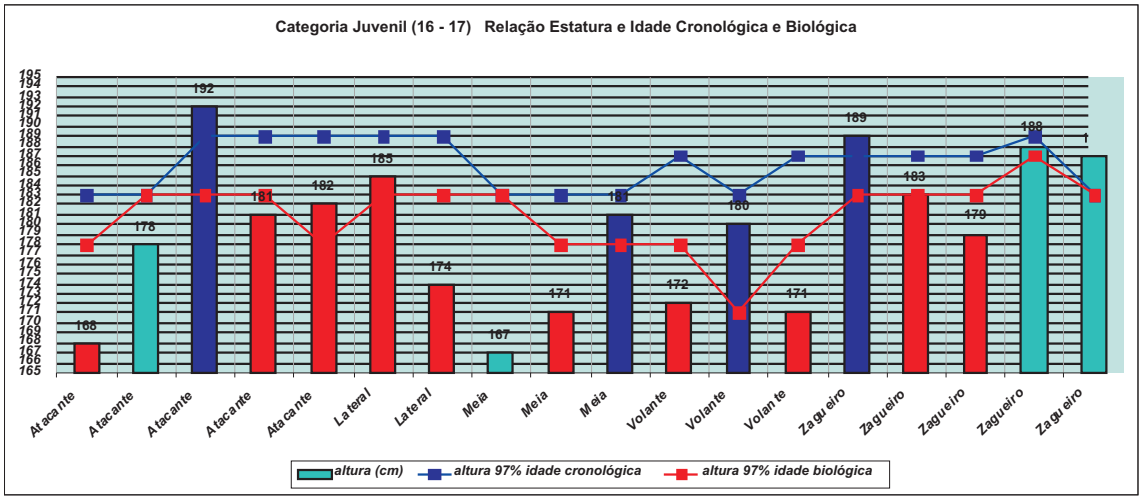

Table 05 – Height relation and Biological and Chronological Age of Juvenile Category. * The columns in light blue are neutral. * The columns in dark blue indicate height closer to chronological age and the columns in * red indicates height closer to biological age.

As can be seen in Table 01, the children team's no significant difference was found between chronological and biological age, but in table 04 we can see how the maximum height (97%) of the athletes is most identified with the biological age (14±0,51). Thus we can say that in the children category motor skills: strength / speed, coordination and endurance (Table 03), can be prioritized in general.

In table 02 we see that the difference of the average biological age in the juvenile is delayed in 1year and eight months in relation to average chronological ages. And, in Table 05 one sees that it is confirmed the delay in biological maturation, with more than half the athletes have with height closer to the biological age, and motor skills training in priority are: speed / strength, coordination, endurance and flexibility (Table 03).

The force is a capacity that the athlete when 16 years old has changes twice and more the annual average greatness of increasing for 10 years (7 to 17) according with the table 03 of Filin and Volkov (1998), and should not be a priority in training, therefore only 1 (n = 1) young athlete who was observed for biological age (Table 02).

CONCLUSION

From the obtained data, the present study shows the need to determine the biological age in child and juvenile categories of soccer, to be considered in the planning and the application of training of motor capacity, prioritizing those which are in their sensitive period.

KEY WORDS: soccer, biological age, sensitive periods, motor capacity.

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ASSESSMENT OF BIOLOGICAL AGE AND SENSITIVE PERIODS AS ONE INFLUENCE IN THE FITNESS OF SOCCER ATHLETES IN JUVENILE AND CHILDREN

ABSTRACT

This article aims to ascertain the biological age of soccer athletes in child and juvenile categories, using Dorokhov's protocol (1970), and to relate it to the sensitive periods for training capacities, using Filin's and Volkv's table (1998).

The sample was characterized by 33 make soccer athletes, tied to Toledo Colônia Work from Toledo city, state of Paraná, in Brazil; being 15 athletes of the child category (14 and 15 years old), and 18 athletes of the juvenile category (16 and 17 years old). In child and juvenile categories, was observed respectively, the average biological age of 14 (±0,51) and 14,6 (±0,69) and the average chronological age was 14,7 (±0,45) and 16,2 (±0,74), this the capacities with priority for training, according to the schedule of sensitive periods in the both categories would be: strength, coordination, speed/force and flexibility. Then, we can detect that despite the two categories have distinct average biological age, the assessment of the average biological age presented a minimum different average (0.6) between them. From the obtained data this study points out the need to determine the biological age in the child and youth categories of soccer for being considered in planning and implementing the training of motor capacities, prioritizing those that are on their sensitive period.

KEY WORDS: soccer, biological age, sensitive periods, motor capacity.

ÉVALUATION DE L'ÂGE BIOLOGIQUE ET DES PÉRIODES SENSIBLES COMME UNE D'INFLUENCE DANS LA PRÉPARATION DE ATHLÉTES DE FOOTBALL DANS LES CATÉGORIES JEUNES ET ENFANTS

SOMMARIE

Cet article vise à connaître la biologique age, des athlètes de soccer des catégories des enfants et des jeunes, en utilisant le protocole Dorokhova (1970), et relacion a lespériodes sensibles das capacités motrices de formation, en utilisant la table Filin et Volkov (1998). L'échantillon a été caractérisé par 33 joueurs de soccer masculin, connecté au Club Toledo Colônia Work de Tolède / PR, 15 athlètes de la catégorie des enfants (14 et 15 ans) et 18 athlètes de la catégorie des jeunes (16 et 17 ans). Dans les catégories des jeunes et des enfants, respectivement, l'âge biologique moyenne de 14 (± 0,51) et 14,6 (± 0,69), chronologique et l'âge moyen de 14,7 (± 0,45) et , 16.2 (± 0.74), donc les capacites prioritaires de formation à l'échelle de périodes sensibles dans les deux catégories sont: resistens, coordination, vitesse / force et souplesse. Vous pouvez alors détecter que malgré les deux catégories ont différents moyenne d'âge chronologique, de l'évaluation de l'âge biologique avait une différence minimale moyenne (0,6) entre eux. À partir des données tirées de cette étude montre la nécessité de déterminer les catégories d'âge biologique de l'enfant et le football des jeunes et enfants, à considérer dans la planification de La formation de la capacites motricites, la priorité ceux qui sont dans leur période sensíbles.

MOTS-CLÉS: football, l'âge biologique, les périodes sensibles, les capacités motrices.

EVALUACIÓN DE LA EDAD BIOLÓGICA E DE LOS PERÍODOS SENSIBLES COMO FATOR DE INFLUENCIA EM LA PREPARACIÓN FÍSICA DE LOS ATLETAS DE FUTBOL DE LAS CATEGORIAS JUVENIS E INFANTIS

RESUMEN

Este artículo tiene como objetivo conocer la edad biológica de los jugadores de fútbol de las categorias juvenil y infantil, utilizando el protocolo Dorokhova (1970), y relacionarle a los períodos sensibles para el entrenamiento de las

capacidad , utilizando la tabla de Filin y Volkov (1998). La muestra se caracterizó por 33 jugadores de fútbol masculino, Del Club Toledo Colônia Work, de la ciudad de Toledo, estado Paraná, Brazil, sendo 15 atletas de la categoría infantil (14 y 15 años) y 18 atletas de la categoría juvenil (16 y 17 años) . En las categorías juvenil y infantil, observousse respectivamente, la edad biológica promedio de 14 (± 0,51) y 14,6 (± 0,69), y la media de edad cronológica de 14,7 (± 0,45) y la , 16,2 (± 0,74), por lo que la formación de habilidades de prioridad en la escala de los períodos sensibles en ambas categorías son: resistência, coordinación, velocidad / fuerza y flexibilidad. Se puede detectar que a pesar de las dos categorías tieniren diferentes edad cronológica media, la evaluación de la edad biológica había una diferencia mínima media (0,6) entre ellos. Partindo de los datos obtenidos, este estudio muestran la necesidad de determinar la edad biológica em las categorias infantil y juvenil de fútbol, para ser considerado en la planificación y ejecución del entrenamiento de las capacidad motoras, dando prioridad a aquellos que están en su período sensibles.

PALABRAS CLAVES: fútbol, la edad biológica, los períodos sensibles, las habilidades motoras.

AVALIAÇÃO DA IDADE BIOLÓGICA E PERÍODOS SENSÍVEIS COMO FATOR DE INFLUÊNCIA NA PREPARAÇÃO FÍSICA DE ATLETAS DE FUTEBOL JUVENIS E INFANTIS

RESUMO

O presente artigo visa conhecer a idade biológica de atletas de futebol das categorias infantil e juvenil, utilizando o protocolo de Dorokhov (1970), e relacioná-la aos períodos sensíveis para treinamento das capacidades, utilizando a tabela de Filin e Volkov (1998). A amostra foi caracterizada por 33 atletas de futebol do sexo masculino, vinculados ao Toledo Colônia Work da cidade de Toledo/PR, sendo 15 atletas da categoria infantil (14 e 15 anos), e 18 atletas da categoria juvenil (16 e 17 anos). Nas categorias infantil e juvenil, observou-se respectivamente, a idade biológica média de 14 (± 0,51), e 14,6 (± 0,69), e a idade cronológica média de 14,7 (± 0,45) e, 16,2 (± 0,74), assim, as capacidades com prioridade de treinamento segundo a tabela de períodos sensíveis, em ambas as categorias seriam: resistência, coordenação, velocidade/força e flexibilidade. Pode-se detectar então que apesar das duas categorias terem idades cronológicas média distintas, a avaliação da idade biológica média apresentou uma diferença mínima (0,6) entre elas. A partir dos dados obtidos o presente estudo aponta a necessidade de determinar a idade biológica nas categorias infantil e juvenil de futebol, para que seja considerada na planificação e na aplicação do treinamento das capacidades motoras, priorizando aquelas que se encontram no seu período sensível.

PALAVRAS-CHAVE: futebol, idade biológica, períodos sensíveis, capacidades motoras.

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