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LaCineantropometría to the Service of the Health in the Selective Process of the Cadets of the Superior Military Aviation School

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Abstract

The present work is based on the experience lived in several years of work and the deep concern to observe how each year the number of Cadets with bone injuries increases. For years the anthropometric measures have been taken and then the cineanthropometric measures, but apparently it has not been given the importance in the incidence that it presents in the performance and health of the cadets of the Military High School of Aviation "Cosme Rennella B." After making an analysis of the kin anthropometric measures of the cadets and the injuries presented, it has been determined that the percentage of bone weight in relation to the total weight of people affects the future injuries that may occur in their change of physical activity.

Keywords: *Physical Activity; Cineanthropometric Measures; Health*

Introduction

The Higher Military Aviation School "Cosme Rennella B" trains the Cadets; future pilots and technicians, to lend their personal contingent for the benefit of the homeland. The Ecuadorian Air Force, collects of the National Educational system, young bachelors who, after a rigorous selection process, decide continue and achieve a military profession as an ideal and effective means for personal and professional development and through it adopt the beautiful work of ensuring sovereignty, national security and the development of state. To achieve this purpose, sports, physical education and recreation in general are considered as powerful agents to form character, achieve good health and harmonious physical development, to develop in the human being capacities in the intellectual, socio-affective and psychomotor field, whose balance they contribute to the strengthening of the will, being this a basic necessity in the educational field and in addition, it should be sought that this preparation serve as the basis for future participation in tournaments Military Interests and South American Cadet Tournaments.

It should also be taken into account that, due to their status as pilots, they are subject to various unnatural circumstances that occur in each of the flight phases, so that physical preparation and sports training, must be basic contributions for high competitive preparation, as well as encouragement for the achievement of their professional objectives. In a traditional way the selective process has been carried out through academic exams, medical, psychological exams, physical tests, etc. With the advancement of technology and smaller spaces in cities, children and adolescents develop new skills, and are limited to the physical-sports preparation as it was naturally done in previous generations. For this reason, it is done need to take new exams in the selection process, to avoid future inconveniences of health in the future Cadets of the Ecuadorian Air Force. It has been observed that in the new generations bone type lesions have increased, especially the lesion known as "periostitis".

After a cineanthropometric analysis it has been possible to observe certain bone characteristics such as determining characteristics in the formation of the Cadets.

Theoretical framework

Cineanthropometry

Howard [1] states "Cineanthropometry has been defined as the quantitative interface between anatomy and physiology or between structure and function. This new specialty evaluates, through various measurements, the human characteristics of size, shape, proportion, composition, maturation and gross function, and study the problems related to growth, exercise, performance and nutrition" (p.277).

In this sense, the correct knowledge of cineanthropometry serves the trainer and the nutritionist in the search for health and aesthetics that people want to acquire, well; the advance of science and the technology has allowed risky surgeries to be performed in modern times to achieve aesthetics endanger the health and in some cases the death of the person. Cineanthropometry allows you to perform a monitoring and comparison of body variants, their nutritional needs and the desired improvements. "Criteria that people have about themselves together with the anthropometric changes they experience will allow raise your self-esteem" ([2], p. 96).

González and Fernández declare [3] "The body image has to be understood from a perspective multidimensional capable of grouping perceptions, thoughts, attitudes and behaviors related to one's own body and whose alteration could lead to emotional dilemmas" (p. 105). Cineanthropometry is used to analyze the parameters of musculature, fatty tissue in its correct proportions and the correct analysis of the tissue bone, in order to make corrections in training and diets according to the needs of the Athletes: Cineanthropometry is the science used to study and analyze anthropometric variations of human beings for a period of time in a certain type of work. Military training prepares soldiers for future events in which the human being is exposed to situations extreme, not natural in common life.

The armed forces enter young people who have the illusion of serving the homeland and forming a future of respect in society, however; in today's society people do not perform physical activity of on a regular basis, this puts them at risk of over-training symptoms due to the sudden change in activity: upon entering military life, physical training is carried out in the same or more demanding way as for athletes of high performance, since only then can the military be prepared for possible war clashes; but, not all the people who enter support the rigidity of the physical-military preparation "it provides information on the training of the athlete indicating if the objectives are being achieved, to through body composition and somatotype, the athlete must adapt their characteristics to those of reference for the sport you practice" ([4], p.9).

González [4] states "Proportionality can provide information on whether there are any limitations constitutional physics that prevents developing a certain technique or not achieving sports successes" (p. 9). There are physical activities that, if not done and strengthened in childhood and adolescence, people they will not be able to develop them in their adult life, but they can improve them to improve their lifestyle and prevent complications, such is the case of bone disorders. Physical activity during childhood and adolescence is essential to maintain adequate bone mass in adult life.

Pons (2009) states that "osteoporosis is a bone disease that develops slowly over the years. It may be present in some families, and it may be the result of an intake low calcium in the diet. The consequences of osteoporosis are brittle bones, risk of broken bones, shorten the height due to a collapse of the bones of the spine and an increased risk of having crooked back" (p. 51). For González and Sánchez (2008) "Osteoporosis can be prevented. There are some risk factors that cannot be changed like race, being a woman, but there are some that if we can change" (p. 81).

Calcium is considered one of the most important nutrients in the body, since its deficit is related to osteoporosis, since at the time the organism requires them, it uses the it is stored in the bones.

To maintain calcium in the bone structure it is not enough with daily intake of calcium with the food, it is necessary to do some exercise, for example, walk half an hour a day. Marqués, Salguero, Molinero [5] state that athletes have a higher bone density than normal individuals sedentary and it has been seen that those sports that produce mechanical stress on the skeleton maintain its bone mineralization (walking, running) is better, so sports where the skeleton does not support its own weight body, for example, cycling and swimming. (p. 15).

Materials and Methods

The Superior Military Aviation School is located in the city of Salinas, it has large facilities, laboratories, sports facilities, flight equipment and aircraft necessary for instruction and formation of the Cadets, in their income they count on an average of 60 cadets in each promotion; their teachers and instructors, academics and military, have third and fourth level academic training.

Although the institution has trained teachers and instructors, the sedentary background of the students do not allow physical activities to be carried out normally, since in most cases they are not you can fulfill the planning established to achieve the objectives. To carry out this work and proposed, the cineanthropometric tests performed to previous promotions have been analyzed and with these data studied the income data and the results achieved after three years of permanence in the High School Military Aviation.

Analysis of Results

According to data taken from Cadets of the LXVIII promotion it is possible to observe that those who have a weight bone less than 16.5% of body weight, have a higher incidence in lesions such as tibial periostitis which is the inflammation of the periosteum, usually caused by constant running exercises, chronic injuries or acute or trauma.

In the case of Cadets with a percentage lower than 15.5% of body weight, all have suffered the periostitis lesions.

It can also be seen that the Cadets, who have stood out as athletes in the different military competencies, upon entering the School, exceed 17.5% of body weight and those who have reached elite results exceed 20% of body weight.

No	Weight	Size	Bone Weight	%P.O.	Observation
18	63.0	160.0	8.38	13.30%	Them. Pubalgia and Periostitis
26	69.8	164.0	9.29	13.32%	Them. Periostitis
5	68.8	160.0	9.52	13.84%	Them. Periostitis
10	84.6	176.3	12.21	14.43%	Them. Periostitis
24	75.8	173.0	10.94	14.44%	Them. Periostitis
37	71.7	168.3	10.45	14.57%	Them. Periostitis
29	75.1	174.0	10.95	14.59%	Them. Periostitis
40	71.1	170.0	10.43	14.66%	Them. Periostitis
21	75.8	168.0	11.16	14.73%	Them. Periostitis
27	75.4	176.2	11.26	14.94%	Them. Periostitis
34	71.6	165.5	10.71	14.96%	Them. Periostitis
4	71.9	166.3	10.85	15.08%	Them. Periostitis
23	69.5	173.0	10.49	15.09%	Them. Periostitis
3	78.2	174.7	11.88	15.20%	Them. Periostitis
13	80.7	174.0	12.68	15.71%	Them. Periostitis
14	73.6	171.0	11.64	15.81%	Them. Periostitis
28	63.0	168.0	9.97	15.83%	Them. Periostitis
20	68.6	172.0	10.92	15.92%	Them. Periostitis
17	63.8	167.0	10.22	16.02%	Them. Periostitis
36	64.4	168.0	10.33	16.04%	Them. Periostitis
1	58.2	165.5	9.34	16.05%	Them. Periostitis
41	83.6	186.0	13.61	16.28%	Them. Periostitis
7	79.5	178.0	12.98	16.33%	Them. Periostitis
15	70.5	173.0	11.62	16.48%	
31	67.7	174.5	11.30	16.69%	Them. Periostitis
2	66.4	174.5	11.23	16.91%	Them. Periostitis
11	69.9	176.5	12.11	17.32%	
32	58.1	168.0	10.13	17.43%	
25	62.7	172.0	10.99	17.52%	DEP.
39	67.7	171.5	11.87	17.54%	DEP.
12	64.7	175.0	11.43	17.66%	Them. Periostitis
6	53.0	166.5	9.43	17.80%	
9	56.7	170.0	10.31	18.18%	Them. Periostitis
19	67.1	175.0	12.20	18.18%	
35	54.4	172.0	10.38	19.08%	DEP.
30	56.3	171.3	10.92	19.40%	
8	59.9	170.0	11.92	19.91%	
16	65.8	179.5	13.45	20.44%	DEP ELITE
33	67.7	174.0	14.13	20.87%	DEP ELITE
22	59.0	182.0	12.33	20.90%	DEP. ELITE
38	50.9	165.5	11.51	22.62%	DEP ELITE

% Oseo Weight	
Half	16.64%
Typical error	0.34%
Median	16.05%
Fashion	#N/A
Standard Deviation	2.20%
Sample Variance	0.05%
Kurtosis	28.21%
Asymmetry coefficient	82.80%
Rank	9.32%
Minimum	13.30%
Maximum	22.62%
Sum	6.82070671
Bill	41

Discussion

When entering military life, it is relevant to prefer people who reach a bone percentage greater than 17%, the verification of these aspects being necessary to avoid future injuries to personnel in military training. Cineanthropometry should be used in order to avoid future short-term injuries and chronic traumatic diseases such as periostitis and osteoporosis.

In military life it is necessary to consider Cineanthropometry as a fundamental aid, since through these data it is possible to detect the body's predisposition to present resistance to certain activities, through the manifestation of pain.

Conclusion

Cadets who on admission exceed 17.5% of body weight are less likely to suffer injuries Bone and those who exceed 20% of body weight, achieve sports results at the level of elite athletes. Health and aesthetics are parameters that are developed in parallel according to training and food control.

In addition to the physical health that the study of Cineanthropometry can provide, it also allows people improve their physical appearance and logically improve their self-esteem, without resorting to surgeries expensive and with a lot of risk to health. Taking cineanthropometric measurements allows to detect the possibility of future injuries that may occur in military life.

Bibliography

1. Howard J Green. "Physiological evaluation of the sportsman". Editorial Paidotribo (2005).
2. Schilder Paul. "Image and appearance of the human body: studies on the constructive energies of the psyche". Paidós (1983).
3. González-Calvo Gustavo and Francisco Javier Fernández-Río. "Qualitative and quantitative perspective of physical self-concept and body image of the different professionals of physical activity and sport". *Journal of Sports Psychology* 26.2 (2017): 105-111.
4. González Haro C. "Cineanthropometry". Madrid, Spain (Editorial Funiber) (2009).
5. Márquez Rosa., *et al*. "Contextualization of physical activity and exercise in the Health framework". Madrid, Spain (Editorial Funiber) (2011).

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