Body Weight Control and Physical Fitness of Military Persons in the Brazilian Air Force.

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RÉSUMÉ

Maîtrise du poids et condition physique des militaires de l'Armée de l'Air brésilienne.

Le but de cette étude était d'examiner l'influence de l'activité physique sur la maîtrise de la masse corporelle et d'analyser les procédures d'évaluation de la condition physique du personnel des Forces Aériennes Brésiliennes (FAB). La revue de la littérature fait apparaître comme une évidence que l'obésité, la sédentarité et un mauvais état cardio-respiratoire sont des facteurs prédictifs de maladie et de mortalité. Le test d'évaluation de la condition physique ("Teste de Avaliação do Condicionamento Fisico –TACF") appliqué à l'état-major des FAB permet de détecter les excès de poids et d'évaluer la condition physique des individus. La littérature montre clairement que l'activité physique entraîne une perte de poids et cet article propose de mettre en application un programme de maîtrise de la masse corporelle incluant à la fois activité physique et conseils diététiques visant à améliorer la santé du personne des FAB chaque fois que des anomalies pondérales sont détectées par le TACF. Des études ultérieures seront nécessaires, ciblées sur des échantillons représentatifs des différents grades et fonctions au sein des FAB.

KEYWORDS: Excess weight, Obesity, Physical activity, Fitness of military personnel.

MOTS-CLÉS : *Surcharge pondérale, Obésité, Activité physique, Santé des militaires.*

INTRODUCTION

To know the health and physical fitness status of military personnel is a priority in the Armed Forces. According to the Brazilian Air Force Command (COMAER), the Air Force Health Board (DIRSA) and the Sports Commission (CDA) are responsible for evaluating the health and fitness of the Air Force personnel, as well as for taking corrective measures when necessary, seeking to qualify their staff members for better exercising their tasks and assignments. These aims correspond to the ideal image of a military troop, composed by healthy, physically fit professionals with an adequate anthropometric profile.

Body weight control is a major concern not only among medical societies, but also among civil and military public institutions. Obesity is a pandemic in the contemporary world, and its prevalence is increasing at an alarming rate, with relevant consequences for public health and the economy. The cornerstone of the treatment of obesity continues to be a comprehensive change in lifestyle, with emphasis on a balanced diet and physical activity. Significant health benefits may be obtained, even with relatively modest weight loss[1].

The objectives of this study are as follows: to review the influence of physical activity on the maintenance of proper weight and/or weight loss, and to analyze the actions and procedures adopted by CDA and DIRSA for evaluating the physical fitness of military personnel from the Brazilian Air Force.

Bibliographic and documentary reviews were undertaken[2] and a brief review of some of the concepts related to obesity and physical exercise is included here in order to contextualize the question.

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BODY WEIGH CONTROL AND PHYSICAL ACTIVITY

The energy balance can be altered by increasing calorie consumption, by reducing energy expenditure, or both. The daily energy expenditure is determined by the basal metabolic rate (60-70%), by the thermal effect of foods (10%), and by the energy spent on physical activity, the latter being the most important variable component, which in adults, corresponds to 20-30% the total energy spent[3].

Obesity is a chronic disease associated with other comorbidities, such as cardiovascular conditions, metabolic, osteomuscular and neoplastic diseases, with a direct and/or indirect effect on the morbidity and mortality of populations, worldwide[4]. Another important finding refers to the quasi-linear correlation between weight increases and increased risk of different medical conditions. A BMI higher than or equal to 25 kg/m^2 may be associated with different health risks[5].

The waist circumference should be considered a "vital sign"[6] and noted on the medical chart of each patient, as abdominal obesity is an easy-to-measure variable that best identifies the risk of metabolic complications, which in turn are risk factors for coronary artery disease and other cardiovascular conditions.

It is estimated that physical inactivity is associated with 10-16% of the cases of breast and colon-rectal cancer and diabetes *mellitus*, worldwide, and to 22% of ischemic heart diseases, with 1.9 million deaths per year being attributed to sedentarism worldwide. A healthy and regular diet and adequate physical activity constitute the main factors in promoting and maintaining good health throughout life[7].

In 2004, a study used multivariate analysis to evaluate nine risk factors (among these: Abdominal obesity, psychosocial factors, such as stress at work and depression; and absence of regular physical activity), which were shown to be significantly associated with acute myocardial infarction (AMI). This study analyzed data from a large, population-based sample of 15,152 cases of AMI and matched controls. Among individuals without previous cardiovascular disease, moderate intensity level exercise was found to be associated with a decreased risk of AMI[8].

Data from individuals that have succeeded in maintaining weight loss are also relevant. Studies have shown that three factors are associated with sustained and substantial weight loss: 1) adequate physical activity (an average of 450 minutes of physical activity per week, with periods of moderate intensity activity several times a week); 2) avoidance of with high calorie foods, rich in fats and simple carbohydrates; 3) use of multiple strategies such as social and family support, self-monitoring of weight, to reinforce and maintain physical activity and the desired nutritional pattern[9, 10].

The total energy expenditure of the physical activity program is a fundamental dimension. Continuous aerobic activities involving large muscle groups determine a moderate to high calorie expenditure, such as, for example: running, walking, cycling among other activities.

To lose weight or maintain weight loss, 60 to 90 minutes of physical activity are necessary daily, in accordance with the recommendations of the American College of Sports Medicine, issued in 2007[11]. These recommendations apply to healthy adults under the age of 65 years.

The Canadian Armed Forces have adopted the BMI to monitor the excess weight of their personnel, and found that soldiers with increased BMI are less physically fit than those with a lower BMI[12]. In a research conducted among members of the American Air Force, Robbins *et al.*[13] demonstrated that obesity and overweight, in their inverse relationship with the frequency of aerobic exercise, were the factors of greatest impact on determining less than optimal physical fitness (evaluated by the ergometric test).

A study enrolled and examined 50,523 male soldiers and officials from the Brazilian Army in 2001. Male soldiers and officials, aged 25.8+/-6.6 years, had an waist circumference of 83.0+/-6.2 cm. The authors evaluated the correlation of anthropometric measurements and cardiorespiratory fitness, concluding that those individuals with the best cardiorespiratory fitness had smaller abdominal circumferences when compared with less fit subjects, for the same BMI[14].

PHYSICAL CONDITIONING AND ANTHROPOMETRY IN FAB

In accordance with the *Doctrine of Military Logistics*, MD42-M-02[15], health-related logistic function is defined as: "the set of activities related to the conservation of human resources, in suitable conditions of physical and psychic fitness, by means of sanitary measures of prevention and recovery."

Resolution No. 413/GM3, of April 19, 1995, which instituted the Air Force Physical Education and Sports System ("Sistema de Educação Física e Desportos da Aeronáutica – SISEFIDA"), has the purpose to plan, coordinate and control the activities of physical education and sports, within the scope of COMAER, with CDA as the central agency.

Among the legislations of SISEFIDA, there are the Air Force Command Instructions ("Comando da Aeronáutica - ICA) as follows:

- ICA 54-1: Physical Fitness Evaluation Test (TACF) in COMAER, re-edited by the Air Force Education Department ("Departamento de Ensino da Aeronáutica - DEPENS) Resolution No. 186/DE-6, of October 14, 2008[16] – it defines and regulates the minimum physical fitness demanded for each military person.
- ICA 54-2: Application of TACF for COMAER entry and selection exams, re-edited by DEPENS Regulation No. 172/DE-6, of September 22,[17] – it establishes the criteria for evaluating the physical fitness of candidates for service at the FAB.
- ICA 54-3: Physical-Professional Military Training in COMAER, edited by the Air Force Education Department

(DEPENS) Regulation No. 138/DE-6, of May 3, 2007[18] – with the object of offering guidance as regards to physical conditioning programs at the COMAER.

It is important to mention some of the concepts, according to ICA 54-1[16], which concern the physical fitness and conditioning test:

- physical conditioning associated with health (CFAS): Is the minimum component of physical fitness a military must present, irrespective of the function such individual performs, to be evaluated by means of specific tests, which are associated with well-being and health promotion, considering the gender and age group of each individual.

- physical-professional conditioning (CFP): Is a component of physical fitness of a military, developed by means of specific training, which provides the individual with professional performance without loss of quality during the entire working day.

- physical-professional military training (TFPM): Is the military physical activity, systematically organized, continually practiced and controlled by a pedagogic process (physical conditioning program), with the goal of obtaining CFP.

It is emphasized here that the military person must comply with the above-mentioned requisites of ICA 54-1. The TACF itself – mandatory and performed periodically twice per year by military persons – classifies the individuals as regards to his/her physical fitness.

It is the military person's individual responsibility to take care of his/her own physical fitness, bearing in mind the fulfillment of the common mission, in accordance with the provision in Title II of the obligations and duties, Article 28, item VI, of the *Statute of Military Persons*[19].

It is also the responsibility of the commanders, chiefs and directors of military organizations of the Air Force to maintain and encourage the practice of physical educational instruction by military professional physical training, in accordance with ICA 54-1[16].

Physical conditioning comprises the concept of shared responsibility in which the commander, chief or director and the military person him/herself are responsible for the TFPM, and consequently, for the acquisition of CFAS and CFP.

The DEPENS, in charge of the education and improvement of the Air Force personnel, through the CDA, has improved the evaluation and physical conditioning criteria and training methods with the object of better preparing military persons for performing their work activities. The institution guarantees the proper conditions for performing physical exercises, and the military person must be aware of the importance of practicing it continuously. The document called ICA 54-1/2008[16] deals with the condition *sine qua non* of any man/woman in the Air Force to attain a level of physical fitness, directly related to his/her health and quality of life, with optimal levels being defined after the different work and operational activities to be performed by each individual.

For evaluating the physical fitness of military persons, the standard applied in FAB is adopted, through the CDA, which on October 14, 2008 re-edited ICA 54-1 that regulates the TACF, based on authors such as Pollock and Wilmore[20]. This standard has been applied to the entire staff of COMAER.

ICA 54-1 divides the TACF into two stages, according to the following chart:

Chart 1: Stages and steps of the TACF. Source: ICA 54-1[16].

FIRST STAGE	SECOND STAGE
1. Cardiac frequency at rest. 2. Circumference measurements. 3. Body Composition. 4. Flexibility. 5. Body weight. 6. Stature.	7. Push-up exercise in which the body is alternately raised from and lowered to the floor by the arms only, the trunk being kept straight with the toes and hands resting on the floor. 8. Flexing the trunk onto the thighs. 9. A 12 minute run or march.

Both stages (according to Chart 1) may be performed on the same day. However, when scheduled on different days, the maximum time interval of two weeks between them must be respected.

As seen in Chart 1, the TACF comprises the evaluation of various components, such as weight, stature, waist circumference, body composition and 12-minute run (Cooper test).

The TACF monitors or evaluators undergo a course to qualify them for applying the test, in a period of 5 school days, which is given by CDA instructors.

After performing the TACF, the military persons receive the results, which show their BMI, degree of physical fitness, with recommendations to follow an Individualized Physical Training Program of CDA, which recommends exercising a minimum of 3 times a week, performing push-ups, abdominal and flexibility exercises, aerobic training (walking, trotting or running) and others. In addition, in the same report, there is nutritional guidance, including the Food pyramid showing the distribution of portions of nutrient categories.

ICA 160-1 provides the Regulatory Instructions of Health Inspections ("Instruções Reguladoras das Inspeções de Saúde-IRIS"), as of October 13, 2003[21] and defines the fitness requisites for the Air Force military person: the combination of a minimum standard of health, compatible with the satisfactory performance of the attributes of the military person inspected. In the Air Force, these requisites are classified into physical and psychic aspects, and physical aspects comprise adequate stature and weight.

ICA 160-1[21] states various morbidities that may cause incapacity in Air Force health inspections; among them are the following: Accentuated obesity, cardiopathies, arterial hypertension, and diabetes *mellitus*. All of these diseases are related to excess weight and sedentarism.

Encounter smoke victims, suspect cyanide[1,2,3,4]

- First choice for suspected and confirmed cases of cyanide poisoning[5]
- Binds directly to cyanide for rapid detoxification[6,7]
- Now 5 g single vial for easier reconstitution and administration*

[1] Richard Alcorta, MD. F.A.C.E.P 2004, Smoke Inhalation & Acute Cyanide Poisoning, [editorial], JEMS emergency medical communications:13-14. [2] Eckstein M, Maniscalco P. Focus on smoke inhalation – the most common cause of acute cyanide poisoning. Prehospital Disaster Med 2006; 21(2 Suppl 2):49-55. [3] Koschel MJ. Where there's smoke, there may be cyanide. Am J Nurs. 2002;102:39-42. [4] Alarie Y. Toxicity of Fire Smoke. Crit Rev Toxicol 2002. [5] A. Dueñas-Laita, G. Burillo Putze Bases et al. del manejo clínico de la intoxicación por humo de incendios, Medicina Intensiva 2010, 34-9; 609-619 [6] Toffis V. Importance de l'intoxication cyanhydrique au cours de l'inhalation de fumées d'incendie. Intérêt de l'action antidotique de l'hydroxocobalamine. DEA de Toxicologie Fondamentale et Appliquée, Créteil 1989 [7] Houeto P. Relation of blood cyanide to plasma cyanocobalamin concentration after a fixed dose of hydroxocobalamin in cyanide poisoning The Lancet, Volume 346, Issue 8975, Pages 605-608.

* When compared to the previous 2 vial presentation

CYANOKIT 5 g powder for solution for infusion. PHARMACEUTICAL FORM: Dark red crystalline *powder for solution for infusion (IV)*; 1 vial (containing 5 g of hydroxocobalamin) + 1 sterile transfer device + 1 sterile intravenous infusion set + 1 sterile short catheter for administration to children. **COMPOSITION*:** After reconstitution with 200 ml of diluent, each ml of the reconstituted solution contains 25 mg of hydroxocobalamin. **INDICATIONS:** Treatment of known or suspected cyanide poisoning in all age ranges. Cyanokit is to be administered together with appropriate decontamination and supportive measures. **POSOLOGY AND METHOD OF ADMINISTRATION*: Initial dose:** *Adults:* 5 g. *Paediatric population:* 70 mg/kg body weight not exceeding 5 g.

Body weight in kg	5	10	20	30	40	50	60
Initial dosage in g	0.35	0.70	1.40	2.10	2.80	3.50	4.20
in ml	14	28	56	84	112	140	168

Subsequent dose: Depending upon the severity of the poisoning and the clinical response, a second dose may be administered. *Adults:* 5 g. *Paediatric population:* 70 mg/kg body weight not exceeding 5 g. **Maximum dose:** *Adults:* 10 g. *Paediatric population:* 140 mg/kg not exceeding 10 g. **Renal and hepatic impairment:** Cyanokit is administered as emergency therapy in an acute, life-threatening situation only and no dose adjustment is required in these patients. **Method of administration:** Initial dose of Cyanokit is administered as an intravenous infusion over 15 minutes. The rate of intravenous infusion for the second dose ranges from 15 minutes (for patients extremely unstable) to 2 hours based on patient condition. **CONTRAINDICATIONS:** None. **SPECIAL WARNINGS AND PRECAUTIONS FOR USE*: Treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of seizures. Treatment decisions must be made on the basis of clinical history and/or signs and symptoms of cyanide intoxication.** Smoke inhalation: Before Cyanokit is administered, it is recommended to check affected persons for the presence of exposure to fire smoke in an enclosed area, soot present around mouth, nose and/or oropharynx, altered mental status. Hypotension and/or a plasma lactate concentration ≥ 10 mmol/l are highly suggestive of cyanide poisoning. In the presence of the above signs, treatment with Cyanokit must not be delayed to obtain a plasma lactate concentration. Known hypersensitivity to hydroxocobalamin or vitamin B_{12} must be taken into benefit-risk consideration before administration of Cyanokit. Transient, generally asymptomatic, increase in blood pressure may occur with a maximal increase toward the end of infusion. Effects on blood cyanide assay: Draw the blood sample before initiation of treatment with Cyanokit. Interference with burn assessment due to red colouration of the skin: skin lesions, oedema, and pain are highly suggestive of burns. Interference with laboratory tests because of hydroxocobalamin's deep red colour: Caution is required when reporting and interpreting laboratory results. Interference with haemodialysis: Hydroxocobalamin may cause haemodialysis machines to shut down due to an erroneous detection of a 'blood leak'. This should be considered before haemodialysis is initiated in patients treated with hydroxocobalamin. Use with other cyanide antidotes: has not been established; they must not be administered concurrently in the same intravenous line. **INTERACTION*, FERTILITY, PREGNANCY AND LACTATION*:** *Pregnancy:* There are no adequate data from the use of hydroxocobalamin in pregnant women and the potential risk for humans is unknown. However, taken into account that no more than two injections of hydroxocobalamin are to be administered, the potentially life threatening condition, the lack of alternative treatment, hydroxocobalamin may be given to a pregnant woman. Health care professionals are requested to promptly report the exposure during pregnancy to the Marketing Authorisation Holder and to carefully follow-up on the pregnancy and its outcome. *Breast-feeding:* Because hydroxocobalamin will be administered in potentially life-threatening situations, breast-feeding is not a contraindication to its use. In the absence of data in breast-fed infants, breast-feeding discontinuation is recommended after receiving Cyanokit. **UNDESIRABLE EFFECTS*:** *The most frequents:* reversible red colouration of the skin and mucous membranes, marked dark red colouration of the urine. *Reported in association with Cyanokit use, without frequency estimations:* Decrease in the percentage of lymphocytes; allergic reactions including angioneurotic oedema, skin eruption, urticaria and pruritus; restlessness; memory impairment; dizziness; eye disorders such as swelling, irritation, redness; ventricular extrasystoles; transient increase in blood pressure, hot flush; pleural effusion, dyspnoea, throat tightness, dry throat, chest discomfort; abdominal discomfort, dyspepsia, diarrhoea, vomiting, nausea, dysphagia; pustular rashes (face and neck); headache; injection site reaction; peripheral oedema; artificial elevation or reduction in the levels of certain laboratory parameters. **OVERDOSE*:** Treatment is directed to the management of symptoms. **PHARMACODYNAMIC PROPERTIES*:** Antidotes, ATC code: V03AB33. *Mechanism of action:* Each hydroxocobalamin molecule can bind one cyanide ion by substituting the hydroxo ligand linked to the trivalent cobalt ion to form cyanocobalamin, a stable, non toxic compound that is excreted in the urine. **PHARMACOKINETIC PROPERTIES*, PRECLINICAL SAFETY DATA*, INCOMPATIBILITIES*:** Cyanokit must not be mixed with other medicinal products except the recommended diluant. No simultaneous administration of hydroxocobalamin through the same intravenous line with the following drugs: diazepam, dobutamine, dopamine, Fentanyl, nitroglycerin, pentobarbital, phenytoin sodium, propofol, thiopental, epinephrine, lidocaine hydrochloride, adenosine, atropine, midazolam, ketamin, succinylcholine chloride, amiodarone hydrochloride, sodium bicarbonate, sodium thiosulfate, sodium nitrite, ascorbic acid. Simultaneous administration of hydroxocobalamin and blood products through the same intravenous line is not recommended. **SPECAIL PRECAUTIONS FOR STORAGE*:** Do not store above 25°C. The reconstituted solution has to be used immediately. **SPECIAL PRECAUTIONS FOR DISPOSAL AND OTHER HANDLING*:** The vial is to be reconstituted with 200 ml of diluent (sodium chloride 9 mg/ml (0.9 %) solution for injection) using the supplied sterile transfer device. The intravenous infusion set provided in the kit must then be used. **MARKETING AUTHORISATION HOLDER:** Merck Santé s.a.s., Lyon, France. **MARKETING AUTHORISATION NUMBER:** EU/1/07/420/002

*For more information, please refer to the SmPC on the EMA website.
Please always refer to full prescribing information applicable in your country, which may vary. This prescription only medicine may not be available in your country.
Production Date: March 2011.

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ICA 160-6/2009[22] sets out the physical requisites as regards to stature and weight, using the BMI, in accordance with the following Chart, and defines that in initial health inspections candidates who present BMI values higher than 24.9 – combined with increased abdominal circumference and body fat percentage –, which characterizes overweight and the different degrees of obesity, shall be considered "incapable for the purpose for which they are destined". In the periodic health inspections performed by the health boards, the stature and weight requisites are evaluated according to the BMI, abdominal circumference and body fat percentage.

DIRSA, concerned about the obesity and overweight indices found in military persons in the Air Force[23], launched in 2006 a survey on the prevalence of obesity in its personnel, with the regional hospitals throughout Brazil being responsible for coordinating it. In April 2007, the Technical Advisory Board of DIRSA, with the aim of analyzing the data and establishing the guidelines for the control of overweight and obesity in COMAER, created the Technical Council on Obesity, to which the first author of this article is affiliated. During the course of that year, the group composed of a multidisciplinary team, with the participation of medical, endocrinology, psychology and nutrition experts convened in order to analyze the data and to define a standard. The council issued the Technical Order No. 007/DIRSA, of May 15, 2008, "*Standardizing the measures for the prevention and control of conditions of overweight and obesity*", which discusses prevention and control of weight in the COMAER. The taskforce approved the full adoption of the World Health Organization guidelines, and issued specific rules, related for instance to supervising the menu of the military personnel.

DISCUSSION

In spite of enormous scientific and technological progress, human beings continue to be the decisive element in the battlefield. Thus, the need is observed for maintaining health and physical fitness as essential aspects for the success of military operations. Therefore, the recommendations contained in the FAB documents on health and physical fitness need to be observed. Keep oneself in good condition for one's specific age group, with adequate weight and anthropometric measurements, means not only a better health but operational capacity of the military person to perform his/her duties and to be prepared for combat.

Military air activity, especially that of the combat pilot, demands excellent physical capacity from the individual, enabling the pilot to move easily and quickly to the aircraft in a state of alert, and to move freely within the aircraft cockpit.

Military persons must be trained to be ready for operation under the most adverse conditions. Cardiovascular and osteomuscular diseases, diabetes, arterial hypertension, among other conditions may compromise some tasks, such as missions of survival in the jungle or sea, rescues and firearm operations under a wide variety of situations.

The CDA issues individuals with a report on their physical conditioning that has the purpose of diagnosing their current health status and physical fitness and encouraging the practice of regular exercise, aiming to protect and promote their health. DIRSA, by means of health inspections and preventive campaigns, provides military persons with diagnoses and guidance on weight control and associated medical conditions.

The abdominal circumference measurement varies in the adult population according to gender (male vs. female) and the different ethnic groups, and in spite of being easily measured and its low cost, it is rarely used and/or disseminated in clinical practice, despite its relevance in the context of TACF evaluations.

The American College of Sports Medicine[24] recommends that a regular physical exercise program comprises at least three components: aerobics, muscle overload and flexibility, varying the emphasis on each of these, according to the clinical condition and objectives of each individual. This is in line with the CDA guidance and scheduling.

When combined with diminished energy ingestion, exercise increases the amount of weight loss to over that achieved by diet alone, in addition to preserving muscle mass[25].

The physical conditioning programs with the goal of weight loss, are generally associated with a hypocaloric diet, and are performed with a minimum frequency of 3 to 5 times per week. The recommendations of the American College of Sports Medicine of 2007[11] refer exactly to this question: frequency and time of physical activity, in case the intention is to lose weight.

The National Health Promotion Policy proposes that society and its institutions commit themselves to the adoption of healthier lifestyles[26]. In this case, it means the choice of the subject of physical activities-body practices as one of the priorities of the Brazilian Ministry of Health.

One understands that a weight control and physical conditioning campaign, initiated by the leaders, chiefs and commanders will bear a great deal of positive fruit. The first to benefit will be the military person him/herself, by gaining health and quality of life, followed by setting an example to his/her peers and subordinates, finally transmitting this goal to the entire troop in an altruistic manner.

According to DCA 1-1[27], "wars will increasingly be won or lost by logistic factors. Effective logistics do not necessarily signify the wealth of means, but their conscious and intelligent administration." COMAER, through the CDA and DIRSA, combine these means and human resources for achieving the goal of controlling

excess weight and altered anthropometric measurements, as well as the ideal physical conditioning of the military person.

CONCLUSION

According to Clausewitz[28], "war is the domain of physical exertion and suffering. In order to resist a certain physical and moral force is required, either innate or acquired, which makes us indifferent to these sufferings." Health and physical conditioning are the bases of the human factor for resisting and achieving victory.

Within military scope, health and physical fitness are factors of the utmost importance for full operational ability, both in times of peace and in times of war. Obesity and sedentarism must be combated and overcome.

The main contributions of this article are:

1) To show that excess weight can be controlled with the practice of physical activity and dietary guidance, according to the studies reviewed and discussed.

2) TACF and the physical conditioning program indicated by the CDA are tools for the diagnosis and control of obesity, and well as for combating sedentarism, as the literature has shown.

3) It brings to light the guidance and recommendations that DIRSA has published for excess weight control.

Further investigations are necessary in FAB to increase knowledge about physical activity and the maintenance and control of body weight.

ABSTRACT

The aim of this study was to review the influence of physical activity on the control of weight and to analyze actions and procedures used in the evaluation of physical fitness of military personnel from the Brazilian Air Force (FAB). The literature review made evident that obesity, sedentarism and low cardiorespiratory fitness are predictors of disease and mortality. The Physical Fitness Evaluation Test ("Teste de Avaliação do Condicionamento Físico – TACF") applied to the staff of the Brazilian Air Force (FAB) is capable of revealing evidence of excess weight and evaluating the physical fitness of individuals. The literature clearly shows that physical activity exerts a positive influence on weight loss and the paper advances a proposal to implement a weight control program, comprising physical activity and dietary counseling, in order to improve the health of the military personnel from FAB, whether relevant alterations in the Body Mass Index (BMI) are identified in the TACF. Further studies should representative samples from different ranks and exerting different functions at FAB.

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