

THE IMPACT OF HEALTH-CONSCIOUS EATING IN IMPROVING PHYSICAL PERFORMANCE IN MILITARY PHYSICAL TRAINING

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Abstract: Military conflicts throughout history, as well as in recent times have demanded fighters to possess a complex set of physical and mental skills meant to ensure the foundation of efficiency and functionality, an objective to be attained through a process of intensive training, which many times exerts the body to the extreme. In order to meet these requirements, the military have to adopt a proper sports lifestyle characterized by a health-conscious eating.

Keywords: skills, body, psychic, objectives, efficiency

1. Introduction

Modern warfare requires combatants to have intellectual and technical knowledge, skills and abilities to fight in the most diverse conditions, extreme physical and psychological efforts, an exceptional moral state and a winning mentality. A multitude of factors contribute to the formation of a powerful, creative fighter who would cope with the intense demands imposed by the modern battlefield. Besides the intellectual, technical and tactical knowledge he/she must have a psychic and physical training that will they ensure their determination, energy and trust in their weaponry and technology, adaptation to a controlled, rigorous work and life style, the habit of acting under stress and prolonged physical effort, increased mobility in the tactical field, as well as a winning mentality. Unpredictable situations with a high psychological impact that may occur during combat, if not properly managed, can have a devastating effect. The fighter must be prepared to behave and act effectively in difficult situations, in the enemy's line-up

or in isolation and hostile environment [1]. The success in conducting combat activities in a space characterized by the use of high-tech and highly performing armaments and techniques involves the training of fighters with special physical qualities, who can make the most of the physiological and physical possibilities necessary for the accomplishment of the missions [2]. It becomes imperative to prepare the fighter so that he acquires a physical potential as required to adapt the body to the functional efforts required by the struggle. The fighter must have a body that is resistant to prolonged physical effort and must have the necessary force to carry out fighting where individual fire can not be used and to demonstrate skill and mobility to overcome existing obstacles and to have an extraordinary psychological potential. For the successful encounter with fights, the fighter will have to demonstrate flexibility, mobility and efficiency, and a great ability to adapt to a rough lifestyle, training and preparation as close to reality as possible. Among the contributing elements

substantially to the formation of an exceptional psycho-physical, the type of lifestyle to be respected during training plays a special role.

2. Impact of rational nutrition on physical performance

2.1. The right lifestyle, an essential condition for maximizing effort

Field specialists clearly highlight the fact that observing a proper lifestyle always leads to superior performance because the body is not overcharged and physical and mental stresses, irrespective of their duration or intensity, do not produce adverse effects, such as stressful states of fatigue or psychological discomfort. Ensuring a physical and mental potential to deliver missions can be achieved through a systematic, scientifically-conducted training process in which efforts can often exceed physiological limits of the body, but which require a perfect state of health, and of course, a lifestyle without temptations of all kinds, rigorous and with great daily sacrifices.

Failure to comply with such rules can lead to chronic fatigue and over-training, reducing the body's ability to exercise, affecting health, and the ability to form and strengthen skills and combat skills to ensure success. A correct lifestyle implies a rational alternation between effort and rest, high energy consumption, and assurance of body recovery, giving up on alcohol, cigarettes or other harmful substances for health, avoiding lost nights and the abandonment of excesses of all kinds. An important role for the body to function at superior parameters is the setting-up exercises which should take about 20 minutes and which are done a few minutes after waking-up. Their role is to activate the central nervous system and the important functions of the body in order to speed the transition from the state of inhibition that occurs during sleep to daytime activities. The invigorating gym should not be

confused with actual training because the body is not ready but its content can be designed to ensure the development of insufficiently developed physical skills such as resistance and strength. Sleep is another feature of a proper lifestyle because it is the only natural way to restore the central nervous system and to relieve fatigue. Sleep has to be at least eight hours a day, preferably between 10-11 at night and 7-8 in the morning, because during these hours sleep is the most restful. The position of the body should be lying on the right or in ventral decubitus, as the abdominal organs move in front and compress the diaphragm, thus relieving the expiration and reducing inspiration which, during sleep, should be slower. Another important component of the lifestyle is the conditioning of the body that provides a general resistance to illness and the unfavorable influences of the environment. By using the natural factors (air, water, sun), according to certain rules, the body's resistance to the abrupt variations of the external physical environment is increased, and the body is able to react appropriately to these conditions without adversely inflicting the most important physiological functions, such as circulation or breathing. Recovery after effort is also an indispensable component of a proper lifestyle. It is also a natural process for which the human body has its own capabilities but which, given the long-term efforts required by a fight, requires the speeding of the process through various helping methods. We can thus talk about drug rehabilitation, hydro-physiotherapeutic measures, or active rest. Giving up on harmful habits such as smoking or excessive alcohol consumption should be a basic rule in ensuring a proper lifestyle. Smoking, extremely harmful to the body, involves inhalation of nicotine that attacks nervous centers and reduces reflexes, often eliminating even some conditioned reflexes. It also produces a series of

neurodegenerative disorders, because it excites the adrenaline secretion which is manifested by increased blood pressure in the arteries (arrhythmia), acceleration of the pulse and decreased appetite. Besides the negative effects on the cardiovascular system, smoking has harmful effects on the respiratory apparatus, analyzers, digestive system and generally on the physical and psychological development. It is therefore understandable why it plays such a damaging in achieving physical performance. Alcohol produces disorders of the body, having only harmful effects. It has been shown experimentally that it does not relax the body but creates states of depression, does not remove fatigue and has harmful effects on the digestive system. The amount of alcohol decreases performance in effort and increases energy consumption, overloading the body and creating favorable conditions for muscle, joint or cardiovascular accidents. Of course, a great importance in ensuring a proper lifestyle is rational nutrition, which contributes to the achievement of better performance and which, if not correctly done, may compromise their achievement.

2.2 Ensuring the caloric and energy support necessary to obtain the physical potential of the military

A military is permanently in close competition with the demands imposed by the missions that he has to fulfill but also with him. We can say that he is like a professional athlete whose training takes place during the entire period of the competition and consequently must be subject to strict regulations that ensure performance. In addition, providing the caloric and energy support required to maximize performance is an essential condition of life. When talking about a rational diet, we are of course mindful of the exchange of matter that the human body carries with the environment and which is called the metabolism. All the functions of the body such as breathing, circulation,

digestion or secretion are made on the basis of the energy consumptions provided by consumed foods that represent any product introduced into the body that serves its vital processes and which ensures the growth and recovery of the cells without being harmful to health, but which at the same time provides the energy needed for all kinds of efforts. Since efforts call for energy consumption, it is understandable that, as these are more intense, the energy consumption is higher and consequently the nutrition must provide the caloric and energetic support necessary for the functioning at the normal parameters of the organism. It should be mentioned that the nutritional balance is ensured by the balanced character of the diet of a concordance between the content of calories and the nutrients present in food that, if not respected, can lead to certain imbalances in the body. A rational diet involves the consumption of foods containing all the nutrients necessary for the body and we are talking here about peptides carbohydrates and lipids, water, mineral salts and vitamins.

Water is an essential nutritional factor because it is the main constituent of living matter. If the body can withstand without food 40-50 days, in 4-5 days without water major disorders may occur or even death [3]. Water enters the contents of each cell, so it is necessary to know the fact that all the chemical reactions and all the fermentative processes are produced in the aqueous environment. It is the main solvent of all organic and inorganic substances that enter into the composition of the internal environment and because it can easily cross the capillaries and cell membranes it is the main carrier of nutritional substances distributed in the body. Water is also the one that, if dissolved, carries the remains to be eliminated and contributes very much to the thermoregulation of the body. It is known that during the great efforts in the military activities, much water is lost in the

body by intensifying oxidation and sweating processes. The body's losses can be even of a few liters, so the body's water balance must be maintained as constantly as possible by drinking water, tea, milk, soups, stocks, syrups, compotes, fruits or vegetables.

Peptides or proteins are essential substances to life, being the main constituents of living matter and participate in all functions of the living cell. They facilitate some body reactions by joining them with some of the enzymes that are protean. They are often great energy suppliers releasing in the body, by burning, an amount of heat of about 4,1 calories per gram [3]. Also, peptides play an important role in the immune processes of the body because they contribute to increasing the body's resistance to infections. Due to the fact that they contain a lot of phosphorus, they stimulate the upper nervous activity, and they play an essential role due to the transformation of the chemical energy into mechanical work. Peptides can be of animal or vegetal origin and among the foods that contain peptides, the most important ones are: meat and meat products, eggs, fish, milk, cheese, pasta, fruit, legumes (soy, beans, peas, lentil). In order to ensure a balance, it should be mentioned that the peptides of animal origin should be consumed in a proportion of 60% and those of vegetal origin in a proportion of 40%. It should also be known that if the protein intake exceeds the maximum tolerable quantity of the body, muscle performance decreases due to intoxication, which is why achieving a food balance is absolutely necessary.

Lipids are nutrients that play an essential role in providing energy for the body. They are derived from animal food (milk and derived products, brain, liver, fat and fat meat, egg yolk, fish eggs or lard), or of plant origin (hazelnuts, nuts, almonds, corn soy, pumpkin seeds or sunflower seeds) and also support many vitamins required for normal body function. Lipids also play a

protection role of internal organs and help to regulate the temperature of the body. Since they are only metabolized in the catalytic presence of carbohydrates and peptides, it is imperative to take this into account when setting up food menus. It should be noted that when performing missions in low-temperature environments it is necessary to consume larger amounts of lipids to provide about 2-2.5 grams per kg body weight at 24 hours, compared to normal requirements that is 1.5 grams per kg body weight. It should also be noted that of the 30 percent of calories to be delivered by lipids, those of animal origin should be 70 percent and those of vegetable origin 30 percent of the food consumed.

Carbohydrates are nutrients that provide energy to the body releasing, by burning, 4.1 high calories for each gram, providing about 60% of the caloric requirement of the body. They are absolutely necessary for the body because it is the support of muscle contraction and have an essential role in the normal functioning of the central nervous system and the myocardium, which, in their absence do not give the expected performance. As we have shown, they have a role in the realization of the metabolism of lipids, help the thermoregulation of the body and contribute very importantly to the detoxification of the body after effort. Food intake can ensure the necessary carbohydrates through cereals, pasta, dried fruits (plums, raisins, apricots, dates) dried legumes (lentils, peas, soybeans, beans), fresh fruits, potatoes, bread or vegetables. Moreover, the use of honey, other sweets and sugar, milk, liver or oysters ensure the need for carbohydrates. Hot sugar liquids are indicated to provide the need for carbohydrates, are easily assimilated by the body and no longer consume calories for their heating in the digestive tract.

Mineral salts have a catalytic and plastic role in the body and are indispensable for its proper functionality. They are generally provided by the consumption of various

foods but can also be provided in the form of medication. Among these are the following: iron- found in the blood and has the role of transporting oxygen from the lungs to tissues and cells. The amount of iron that is found in the body is 2 to 5 grams and can be obtained from meat, liver, eggs, nuts, plums, spinach, nettles or brown bread, but soldiers who perform missions especially in mountain areas, the iron requirement increases to about 15 mg in 24 hours, due to the increase in pulmonary ventilation (calcium, ensures the formation of bones and teeth in a proportion of 99%, intervenes in coagulation of the blood and it plays a role in the braking of neuromuscular excitability. The amount required under stress is double than the normal and can be assured by consuming milk, yoghurt, cheese, parsley, cabbage, soybean, peanuts, almonds etc. Magnesium, phosphorus, sodium, potassium, sulphur and iodine are mineral salts necessary for the body under constant effort and are mainly ensured by the consumption of food and only in pathological cases are administered through medication.

Vitamins, contribute especially to reducing fatigue by shortening the recovery time of the body after exercise and increasing immunity to disease [4]. The most important vitamins needed by an athlete's the body are: vitamin B1- with a special role in the metabolism of carbohydrates, the reduction of nerve fatigue, the metabolism of water and the increase of effort. It is found in wheat or rye flour, potatoes, pork, brain, liver, kidney, cabbage or carrots. Vitamin B2 interferes with lipids' metabolism and favors in this way the synthesis of fat, lowers blood glucose and helps the cellular respiration. It is found in green fruits, beef, liver, beef kidney, green vegetables, milk and eggs. Vitamin B12 stimulates the formation of white and red blood cells, provides protection of the liver and nerve cell regeneration and has a role in the recovery of glycogen consumed during

effort. It can be found in milk, eggs, liver, meat, beer yeast. Vitamin B6 plays a role in the metabolism of carbohydrates, improves myocardial activity and muscle metabolism and plays a major role in producing energy reserves during the effort. Vitamin C hinders fatigue, increases immunity to diseases, increases liver's antitoxic action and increases the body's resistance to exercise. Since it does not accumulate in the body in the form of reserves it has to be administered during effort-bearing activities. In case of specific activities fighters can be given 500mg of vitamin C every 24 hours, but no more because it can cause disorders of the body like insomnia, nervous state of excitement or muscle cramps. The foods rich in vitamin C are: citrus fruits, strawberries, apples, currants, green peppers, onions, cabbage, tomatoes, spinach, carrots, potatoes, horseradish or fir syrup. Vitamin A favors growth, is an anti-inflammatory and maintains the integrity of teguments. It can be found both in food of animal and plant origins such as: milk, butter, eggs, liver, roe, vegetables and fruits such as peppers, tomatoes, cabbage, eggplant, peaches, apricots or cherries. Vitamin E favors growth and reproduction, reduces consumption of oxygen, increases the functional capacity of the muscles and improves the capillary circulation. It is found in foods such as eggs, liver, butter, spinach, cabbage, carrots, brown bread.

Vitamins are essential for the body when efforts of any type are made and should be administered in the form of vitamin complexes but in the natural form, by the foods containing them.

3. Conclusions

The physically and psychologically trained fighter will be able to carry out his tasks precisely, in a timely manner and with the expected effectiveness, an advantage that must be used by a continuous improvement of training, so that physical and mental performance are the support of the

preparation for the fight. In order to ensure this potential, respect for a healthy lifestyle is essential and can also be achieved by providing a rich and diversified diet that

provides the calories and energy reserves specific to the types of effort required by the fight.

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