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THE IMPORTANCE OF PHYSICAL FITNESS IN THE CONTEXT OF MILITARY OPERATIONS

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Abstract: The physical fitness of military personnel is a key factor in the success of military operations. Military units face various challenges and conditions on the ground, which require high endurance, strength, speed, and psychological resilience. In this context, physical fitness not only improves the effectiveness of soldiers but also enhances their ability to cope with the stressful and physical demands of military operations. Training principles, the specificity of training, and adaptation to various climatic and terrain conditions are some of the key aspects that define the importance of physical fitness. This paper explores the theoretical foundation of physical fitness in the military, confirming that well-trained soldiers, with high physical fitness, have a greater ability to quickly execute tasks, as well as increased safety and optimal team coordination. Additionally, effective methods for improving physical fitness are crucial, including strength training, endurance exercises, functional training, and high-intensity interval training (HIIT). These methods are tailored to meet the specific demands of military tasks and ensure that soldiers are physically prepared for the diverse conditions they may face during operations.

Keywords: physical fitness, military operations, endurance, strength, speed, psychological resilience, training principles, strength training, functional training, HIIT

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Introduction

Physical fitness represents one of the most important components for the success of modern armed forces. Physical fitness is emphasized as a key element for the success of military operations. (Dubik & Fullerton, 1987; Marshall, 1950; Marti, Vader, Minder, & Abelin, 1988; Nye, 1986). The modern warfighter is expected to have a wide range of physical capabilities because the tasks faced during combat require high levels of muscular strength and power, anaerobic performance, and aerobic fitness (Kraemer & Ratamess, 2004; Kraemer & Szivak, 2012).

Soldiers face numerous challenges – from endurance marches with loads, through performing tactical maneuvers in different terrains, to coping with stressful and unpredictable situations. All of this requires a high level of physical and psychological capacities. In military operations, physical fitness is not only a matter of individual strength or endurance, but also of operational efficiency, safety, and coordination within the unit. Insufficient physical fitness can result in reduced ability to perform tasks, increased risk of injuries, and decreased combat readiness.

Modern research indicates that the combination of traditional training methods and modern approaches, such as functional training and high-intensity interval training (HIIT), enables optimal development of all necessary capabilities. Likewise, adaptation to climatic conditions and diverse terrains is of key importance to maintain efficiency in everyday military practice.

Physical training also has its downside: as the amount of physical activity increases, so do injury rates (Jones, Cowan, & Knapik, 1994; Koplan, Powell, Sikes, Shirley, & Campbell, 1982; Koplan, Rothenberg, & Jones, 1995; Powell, Kohl, Caspersen, & Blair, 1986; Trank, Ryman, Minagawa, Trone, & Shaffer, 2001). Injuries can result in physical limitations and disability, which compromise military readiness. A critical goal of military physical training is balancing the need to improve and maintain a high fitness level while minimizing injury risk.

The aim of this paper is to emphasize the importance of physical fitness in the military context, to present the key requirements and principles of training, as well as to analyze the methods that ensure the highest level of readiness of military personnel.

Theoretical basis of military physical fitness

Physical fitness represents a set of physical and psychological abilities that enable an individual to respond effectively to the demands of various tasks. In military settings, it has even greater significance because the success of operations depends on the sol-

ders' readiness to endure effort, react quickly, and function under conditions of increased stress.

Physical fitness has always been one of the most crucial factors in winning battles for armies and has maintained its importance throughout history without losing its significance. Those who have won wars are those who were trained and ready (D'Eliscu, 1944).

According to basic kinesiological principles, physical fitness consists of multiple components: endurance, strength, speed, agility, coordination, balance, and flexibility. Each of these components is critical in military conditions. For example, endurance is key for long marches and operations that require continuous physical engagement, while strength enables overcoming physical barriers and carrying heavy equipment. Speed and agility are associated with rapid reactions in combat situations, and coordination and balance are important when performing tasks in unpredictable terrains.

The theory of physical fitness in military practice also emphasizes the importance of psychological resilience. A soldier's ability to cope with stress, fatigue, uncertainty, and high risks is necessary to maintain concentration and discipline under pressure. Research shows that an integrated approach – developing both physical and mental capacities – results in the highest level of operational efficiency. Another key aspect of the theoretical framework is adaptation to environmental conditions. Soldiers often perform tasks in extreme climatic conditions – high temperatures, cold, humidity, as well as in diverse terrains (mountains, forests, deserts). Preparation in such conditions is not only a physical challenge but also a physiological process of acclimatization, which allows the body to adapt and maintain efficiency in various situations.

Modern theories also emphasize the role of functional fitness, which differs from classical physical fitness. While traditional training focuses on the development of individual abilities (strength or endurance), the functional approach creates a synergy of all abilities through simulation of real tasks that soldiers perform in the field. The theoretical basis of physical fitness in the military represents an interdisciplinary concept that includes physiology, psychology, biomechanics, and sports science. Systematically developed physical fitness not only ensures higher individual efficiency but also increases operational capability, safety, and cohesion of the entire military unit.

Training principles and adaptation

Effective physical preparation of military personnel cannot be imagined without the application of basic training principles. These principles represent scientifically validated guidelines that ensure the systematic development of physical abilities and the prevention of injuries or overexertion. In the military context, their application is cru-

cial for creating a balanced and resilient force capable of functioning in a wide range of conditions.

- Principle of Progression

Progress is achieved through the gradual increase of load – whether it is an increase in weight, duration, or intensity of exercises. For soldiers, this means gradually introducing more intensive training such as marching with a load, sprints, or simulation of combat conditions.

- Principle of Specificity

Training must align with the demands of military service. If tasks involve carrying equipment of 20–30 kilograms, training must include activities that simulate such conditions. In this way, the body develops specific abilities that are directly applicable in operations.

- Principle of Variability

Monotonous training can lead to stagnation and decreased motivation. Therefore, it is important to use different methods – a combination of strength, endurance, HIIT, functional training, and outdoor activities. Variability not only stimulates progress but also improves the ability to adapt to new conditions.

- Principle of Individualization

Although the military functions as a collective, each soldier has a different level of physical fitness and psychological resilience. An individual approach in determining the intensity and volume of training is necessary to achieve optimal results and avoid injuries.

- Principle of Recovery

The high demands of military training can cause chronic fatigue if periods of rest and regeneration are not included. Active and passive recovery, proper nutrition, and sleep are key to maintaining physical efficiency.

Adaptation represents the process of adjusting the body to various stresses – physical, psychological, and environmental. Military operations often take place in extreme conditions: high temperatures, cold, high humidity, mountainous or desert terrains. Appropriate preparation allows soldiers to maintain efficiency even in such environments.

- Climatic adaptation – training in hot or cold conditions to increase the body's tolerance.

- Terrain adaptation – exercises and training on different surfaces (sand, snow, mud, uneven terrain) for better stability and functionality.
- Psychophysiological adaptation – exposure to controlled stressors (sleep deprivation, fatigue, limited nutrition) to develop mental toughness and psychological resilience.

Through the combination of these principles and adaptation strategies, an integrated training system is created that not only increases physical fitness but also prepares the soldier to operate with maximum efficiency in unpredictable and high-risk situations. Soldiers who maintain high levels of physical fitness are more resilient to operational stress, demonstrate greater task efficiency, and exhibit lower rates of injury during military operations (U.S. Army, 2020).

Methods for improving military fitness

Physical fitness of military personnel is developed through the systematic application of various training methods. These methods are selected and adapted according to the specific demands of military service, so that soldiers can endure high levels of physical effort, be psychologically resilient, and respond to operational challenges.

Strength Training

Strength represents the foundation for performing a large number of military tasks – carrying heavy equipment, climbing, overcoming physical barriers, as well as engaging with the enemy in close combat.

- Methods: free weight exercises (squats, deadlifts, presses), bodyweight exercises (push-ups, pull-ups, parachute push-ups), and functional movements.
- Benefits: increased muscle mass, improved explosive strength, and reduced risk of injury.

Endurance Training

Endurance is essential for tasks that require prolonged physical activity: marching, patrolling, operations in mountainous or urban environments.

- Methods: middle- and long-distance running, swimming, cycling, marching with a load (ruck marching).
- Benefits: improved cardiorespiratory capacity, increased oxygen transport efficiency, and greater resistance to fatigue.

Functional Training

Functional training simulates real movement in military conditions and enhances the ability to perform everyday military tasks efficiently.

- Methods: exercises with boxes, rope pulls, kettlebells, medicine balls, as well as combined movements (carrying loads, climbing, dragging a partner).
- Benefits: improved coordination, balance, mobility, and stability, which is especially important in uneven and unpredictable terrains.

High-Intensity Interval Training (HIIT)

HIIT combines short periods of intense effort with intervals of rest or low-intensity activity. In military settings, this method increases the ability to perform explosive movements and recover quickly. High-Intensity Functional Training programs are especially effective for military populations as they combine strength, endurance, and functional movements in a time-efficient manner. (Haddock, 2016).

- Methods: sprints with short intervals, circuit training with strength and cardio exercises, combination of jumps, running, and bodyweight exercises.
- Benefits: increased anaerobic and aerobic endurance, rapid calorie burning, improved reaction time.

Combined Programs

Modern training systems in armies most often use a combination of all methods. This creates a balanced soldier profile capable of enduring prolonged operations while also reacting explosively in short combat situations.

In practice, methods are adapted according to the type of unit and the tasks it performs. For example, special forces practice high-intensity training with an emphasis on functionality, while mechanized units focus more on endurance and strength stability. It is important to emphasize that methods for improving fitness are not directed only at the individual but also at the entire unit. Group training increases motivation, team spirit, and coordination – factors that are essential for the success of any military operation.

Conclusions

Physical fitness represents a fundamental factor for the success of military operations. The theoretical analysis shows that the development of strength, endurance, speed, flexibility, and psychological resilience significantly improves soldiers' ability to cope with physical and operational challenges. The application of training principles such as

overload, progression, specificity, and variability ensures optimal adaptation of the body to different conditions of terrain, climate, and stress. Effective methods for improving physical fitness, including strength training, endurance, functional training, and HIIT, enable the development of abilities directly related to the demands of military tasks. The combined application of these principles and methods allows for increased performance, reduced risk of injuries, and better team coordination.

Maintaining a high level of physical readiness not only improves the operational efficiency of soldiers but also increases their safety and ability to cope with the complex challenges of modern military operations.

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