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Research Article

GENERAL CHARACTERISTICS OF LOAD IN ATHLETE TRAINING

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Razzoqova Mushtariy
Master's student at the Faculty of Taekwondo and Sports Activities at the National University of Uzbekistan (UzNU), Uzbekistan

ABSTRACT

This work provides a general overview of load in athlete training. Excessive physical activity requires a certain amount of energy expenditure. The magnitude of force is dependent on the size of the load, which after a certain time leads to fatigue and the need for recovery. Training involves energy expenditure and fatigue, while also promoting recovery processes. These processes not only lead to full recovery but also ensure supercompensation, which fully restores work capacity under submaximal and maximal loads.

KEYWORDS

Training, load, strength, speed, endurance, agility, flexibility, athlete, small, medium, significant, large load, energy expenditure, full recovery, submaximal, maximal, mental tension, load magnitude, repetition of training exercises, movement speed, tempo, carried weight.

INTRODUCTION

Performing any physical exercise is associated with shifting the body to a significantly higher level of functional activity. Thus, "training load" refers to the body's additional activity.

Excessive physical activity requires a certain amount of energy expenditure, and the magnitude of this energy expenditure depends on the size of the load. Over time, this leads to fatigue and the need for recovery. The training load not only causes energy expenditure

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and fatigue but also activates recovery processes, which, along with full recovery, ensure supercompensation that fully restores work capacity under submaximal and maximal loads.

The following types of loads are distinguished:

- **Developmental load** – ensures significant positive changes of a structural nature in the athlete's body.
- **Stabilizing load** – consolidates the achieved state of adaptation.

At the same time, the concept of "training load" refers to the degree of impact the exercise has on the athlete's body, primarily determining the quantitative level of this impact. It is essential to distinguish between low, moderate, significant, and high loads.

In sports practice, the loads applied are divided by their characteristics into training and competition loads, those that are typical for a particular sport specialization, and those that are unusual. Depending on the developmental impact, they serve to develop strength, speed, endurance, agility, flexibility, and their combinations. Regarding psychological stress, they require either high or low levels of mental tension. Based on the impact on the athlete's body, loads are categorized as small, moderate, significant, or large.

It is customary to differentiate between external and internal indicators of load.

The external aspect of the load includes factors such as the duration of exercise, the number of repetitions of training exercises, the speed of movement, the tempo, the weight being lifted, and so on.

Table 1

Types and Characteristics of Load

Loads	Yuklama kattalik mezonlari	Hal etilishi lozim bo'lgan vazifalar
Small	1st phase of work capacity before actual fatigue begins, 15-20% of work performed	Maintain the achieved level of fitness; accelerate recovery processes after previous loads

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Medium	2nd phase of work capacity before actual fatigue begins, 40-60% of work performed	Maintain the achieved level of fitness; solve specific training tasks
Significant	Hidden compensated fatigue phase before actual fatigue begins, 60-70% of work performed	Increase in fitness level
Big	The onset of actual fatigue	Increase in fitness level

External indicators of the load guide the coach and athlete, determining the quantitative parameters of certain exercises and training tasks. These are used in planning and accounting for training efforts.

Internal indicators of the load refer to the degree of the body's functional capacities, such as heart rate (HR), respiratory volume, blood pressure, and other metrics.

The internal indicators of load—the indicators of functional shifts in the body—allow for an accurate assessment of the appropriate volume of training loads and the dynamics of changes in the athlete's body under the influence of training loads.

The size of the training load is determined by the result of its intensity, tension, and volume. An increase in these factors can continue to a certain point, after which an increase in intensity will lead to a decrease in volume or vice versa.

Volume refers to the duration of the load's impact and the total amount of work performed during individual or multiple exercises, training sessions, phases, stages, or cycles.

Intensity refers to the magnitude of tension and force exerted in each exercise situation, including speed, number of repetitions, etc.

The impact of the load on the athlete's body depends not only on external factors such as volume and intensity, but also on the psychological aspects—specifically, the complexity of sensations and coordination during the exercises.

In practice, several methods are used to assess the complexity of the load.

It is well known that the training process includes rest. Rest becomes an integral part of training only when it is carried out according to specific principles. Too short or too long rest periods disrupt the structure of the

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training, leading to either overtraining or insufficient training. Therefore, the organization of rest periods in sports training is crucial, creating a need for a balanced coordination of load and rest.

Rest in the training process serves two primary functions:

1. It helps restore work capacity after training loads.

2. It improves the effectiveness of the load and serves as one of the best tools for optimizing the results.

By increasing or decreasing the rest period between exercises, the overall cumulative effect of the load can be adjusted.

The interval between recovery phases in training sessions should always end before the phase of re-reduction begins, which occurs after the supercompensation phase.

The duration of recovery processes often depends on the direction of the training. For instance, after speed or coordination-focused training, as well as exercises aimed at improving speed-strength qualities or technique, recovery occurs more quickly. Typically, recovery is completed within 2-3 days after high-intensity training sessions in these areas.

If the training is endurance-focused, significant changes occur in the athlete's body, and thus the recovery process is slower, taking 5-7 days.

The speed of recovery processes also depends on the frequency of training and the athlete's level of skill. Recovery in highly specialized athletes is 1.5-3 times faster than in athletes of lower qualification (II or III ranks).

The personal characteristics of the athlete's body and the overall size of the load also influence the duration of recovery processes.

Global achievements in sports necessitate changes in the methodology and content of training processes, particularly in increasing both the volume and intensity of training loads.

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