



Physiological Processes of Physical Development in Athletes Regularly Engaged in Boxing

Muratov Muzaffar Shermamatovich

Teacher of Samarkand Medical University

Annotation: The article discusses the physiological processes and methods of physical development in athletes who regularly practice boxing. Physiological characteristics of physical exercises and sports were analyzed.

Key words: boxer, physiological processes, exercise, sport, physical load, combat training, heart rate, breathing, metabolism, energy, blood circulation, blood pressure.

INTRODUCTION

It is important to know the physiological laws of the human body when engaging in physical exercises and sports. Any physical work performed, muscle movements actively affect the function of all systems and organs in the body. For example, simple daily activities such as walking, running, jumping, manual labor, etc., accelerate vital activities such as heart rate, breathing, metabolism, energy, blood circulation, blood pressure, gastrointestinal system function. Such functional changes observed during heavy physical work reach the maximum level, and this condition does not remain indifferent to the body. The modern system of training athletes includes three sub-systems in the following form: including the system of competitions; sports training system; additional training and competitions, a system of factors optimizing their effect. In this case, the totality of all these listed components, their assembly as a whole system can create a positive effect in sports activities. In the system of additional training and competitions and the factors that optimize their effect, the main place is occupied by the issues of planning and organization of training and competition loads.

It is noted that their importance and role is constantly growing.

During preparation, the authors highlight the following among the main principles: including all aspects of preparation – organizational factors, training and competition processes, recovery system, scientific, medical, informational and material – technical support of functional mechanisms it is noted that the information about the unity of the whole is important.

DISCUSSION AND RESULTS

In recent years, training and competition loads have been observed to increase in size and intensity from the threshold value for the human body. Therefore, imperceptible increases can often lead to disruptions in adaptation mechanisms, including physiological fatigue and its subsequent stages – overexertion, overexertion, and overtraining. It is possible, and in turn, it is noted that these conditions can cause a decrease in sports results. The results of the practice of training individual wrestlers at the scale of different countries show that the attempt to increase sports results by increasing the volume of training work has almost lost its importance. Due to this

situation, the maximum realization of the individual sports potential and the achievement of achievements in the sports field during the last years have not directly increased the size of training and competition loads, the process of rationally drawing up and organizing is closely related to it, which has been confirmed in a large number of scientific facts and practical examples.

Those who regularly engage in the sport of boxing are getting absorbed into the lives of young people day by day, and the number of those who do boxing is increasing more and more. This is based on educational and political activities such as health and health protection, increasing labor productivity, establishing and strengthening friendly relations between peoples and states. Therefore, learning the secrets of the effects of physical exercises and muscle activity on the body system and organs in boxing is one of the main tasks of every coach in this field.

Playing the sport of boxing has a number of effects on the physiological processes of physical development of athletes, on the body's ability to work, on the exchange of substances and energy in it, and on the activity of the cardiovascular system, respiratory organs, digestive organs, nervous and muscular systems. 'causes specific changes.

These changes are not uniform during exercise, but are divided into different periods according to their characteristics, and these periods, which are described below, differ from each other from a physiological point of view. They are divided into periods of reaction, relaxation, short-term increase in work ability in the initial part of training (getting into work), steady state, exhaustion and recovery.

Pre-start reaction is a change in the normal physiological processes observed in the athlete's body before training or competition is called a pre-start reaction. It can occur immediately before physical activity or long before physical activity is performed.

Physiological changes observed during the training period of a boxer are various, they are manifested in the excitation power of nerve centers, the speed of substance and energy exchange, heart rate, gas exchange and other conditions. In the pre-start reaction observed before the start of the competition, the heart rate may increase to 100-130 beats per minute, oxygen absorption may increase by 2-3 times compared to the time of rest, and blood pressure may rise slightly. The characteristics of such changes are different for everyone and often depend on the athlete's preparation for the responsibility of the competition and other factors.

The higher the responsibility of the competition, the stronger the pre-start reaction. The mechanism of occurrence of the pre-start reaction is explained by conditioned reflexes. The appearance of the places where the competition will be held, the presence of the sports inventory of the spectators, on the basis of a conditioned reflex, accelerates the frequency of heartbeat and breathing. This situation has an important practical significance, that is, due to the pre-start reaction, the athlete's body prepares itself appropriately for the upcoming work. Reactions before the start can cause excitement or fear in the mental and emotional state of the athlete before the competition. The centers that control such emotions are located in the subcortical nuclei of the cerebral hemispheres. Their activity is subject to bark. Therefore, the athlete can use his will power to prevent situations of strong fear and panic.

In the sport of boxing, there are three types of pre-start reactions, namely, combat readiness, pre-start confusion, and pre-start indifference.

The state of combat readiness is considered to be the most convenient, purposeful and positive pre-start reaction. In this case, the central nervous system is moderately excited. As a result, movement and vegetative (internal) organs have appropriate physiological shifts that are important for the future work. In this case, the boxer fully mobilizes his strength and capabilities, so he often wins. Breathing and heart rate will be moderate, the athlete will not panic and will not be indifferent to the work that is happening at the same time. A state of combat readiness is often observed in athletes who regularly train wisely. In those who do not train regularly and cannot use time and energy wisely during training, the state of combat readiness is rarely observed and is very superficial. Physiological characteristics of warm-up – a special muscle movement activity performed before any exercise or competition is called warm-up, and it plays an important role in fully preparing the athlete's body for the upcoming work. The main reason for this is that pre-start reactions cannot prepare the body physiologically

and biochemically for physical activity. Boxing is divided into two parts, general and special parts. The general part of the warm-up is performed in order to optimally increase the exchange of substances and energy in the body, body temperature, excitability in the central nervous system, blood circulation and breathing. Therefore, this part of the workout is characterized by performing general physical exercises (slow running, general physical exercises, etc.). In the special part, the boxer should perform the actions he performs in the main work in a light manner. The purpose of this is to adapt the body to the future work characteristics, to create an organic connection between the vegetative and movement organs. The duration of the discussed parts of the bout (relative to each other) is determined by the boxer's physical fitness, weather conditions and other factors.

Due to warm-up, a number of important physiological and biochemical changes occur in the boxer's body, such as the opening of additional capillaries in the muscles, the blood circulation through them accelerates, the temperature rises, the contractility of the muscles increases, the excitability of the nerve centers, the activity of enzymes. Increases. Blood circulation and respiration increase, absorption of O₂ by tissues improves, blood flows from special depots to veins, etc.

How and how long the training lasts depends on the personal characteristics of the boxer, it should be determined with the trainer. Usually it is 10-30 min. The most important thing is that the athlete should not get tired during the workout.

Physiological characteristics of the start-up period – after the start of physical activity, the athlete's ability to work gradually increases, and this period is called the start-up period. It is a general biological law of the organism, and it is observed in any mental and physical work. In the human body, nerve centers and physiological systems are inert by nature. Therefore, the transition from rest to mental or physical work is not immediate, but it takes time for physiological and biochemical processes to pass from one state (mental or physical, for example, rest) to another state (activity), and during this period, the body all systems and organs adapt to work in a new way. Therefore, the inertness of the nerve centers and physiological systems is the main reason for the occurrence of this period.

CONCLUSION

The duration of this period depends on the personal characteristics of the boxer, the level of physical fitness, the type of sport he is engaged in, the strength of the exercises he performs and other factors.

In the period of introduction to work, the coordination of movements improves, the activity of vegetative organs increases, the work of the movement apparatus and internal organs harmonizes with each other. Internal and external organs and systems experience the start-up period at different times, for example, when the heart rate rises to the appropriate level 20-60 seconds after the start of work (start-up period), the cardiac output or Pulmonary ventilation and adequate absorption of oxygen last for 3-5 minutes. The nervous system and endocrine glands play an important role in the initiation of the period of initiation. If unconditional, conditioned reflexes are the basis of the period of initiation, certain hormones (adrenaline, no-adrenaline, etc.) released from the adrenal gland and pituitary gland determine the characteristics of this period.

REFERENCES

1. Shermamatovich, M., Yalgashevich, K., & Narkulovich, S. (2021). The development of physical preparedness of student young people. *Psychology and Education Journal*, 58(1), 2699-2704.
2. Shermamatovich, M. M., Tursunovna, H. U., Zayniddinovich, N. I., Boltayevich, A. S., & Yalgashevich, K. S. (2021). Physical education of student youth in modern conditions. *ACADEMICIA: AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL*, 11(2), 1589-1593.
3. Shermamatovich, M. M. (2023). Psychological Description Of Sport And Psychological Development Of Sportsmen. *Eurasian Research Bulletin*, 17, 7-9.
4. Shermamatovich, Muratov Muzaffar. «Psychological Description Of Sport And Psychological Development Of Sportsmen.» *Eurasian Research Bulletin* 17 (2023): 7-9.

5. Shermamatovich, M. M., Norkulovich, S. K., & Tursunovna, H. U. (2022). PLACE AND ROLE OF PSYCHOLOGICAL AND VOLITIONAL TRAININGIN THE TRAINING PROCESS OF STUDENTS-BOXERS. *World Bulletin of Management and Law*, 8, 141-144.
6. Shermamatovich, M. M., & Boltaevich, A. (2022). INTERACTIVE LEARNING METHODS IN THE PROCESS OF TEACHING PHYSICAL CULTURE. *World Bulletin of Management and Law*, 7, 99-100.
7. Shermamatovich, M. M., & Boltaevich, A. (2022). INTERACTIVE LEARNING METHODS IN THE PROCESS OF TEACHING PHYSICAL CULTURE. *World Bulletin of Management and Law*, 7, 99-100.
8. Shermamatovich, M. M., Zayniddinovich, N. I., Boltaevich, A. S., Norqulovich, S. Q., Muzaffarovich, S. A., & Abriyevich, E. Q. Endurance Formation in General Physical Training Students. *International Journal on Integrated Education*, 4(3), 356-359.
9. Yalgashevich, X. S., & Shermamatovich, M. M. Enhancing Athletes' Regained Performance Through Rational Nutrition. *International Journal of Innovations in Engineering Research and Technology*, (1), 1-6.
10. Shermamatovich, M. M., & Latif, T. (2023). DEVELOPMENT OF SPORTS IN THE REPUBLIC OF UZBEKISTAN. *Galaxy International Interdisciplinary Research Journal*, 11(3), 374-377.