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# ANALYSIS OF PHYSICAL STRESS OF ATHLETES

***Zokirova Fazila Boltaevna***
*Bukhara State Medical Institute*

**Abstract:** One of the main stages of managing the development of physical culture and sports involves monitoring the external situation in order to identify and use its favorable opportunities to achieve certain goals and prevent the threat of obstacles. This is achieved by studying the external environment and compiling a list of opportunities and threats, which in the future will allow the use of favorable opportunities for the development of the industry. This process is called environmental factor analysis.

**Key words:** Physical development, medical and social significance, social hygiene and physiology, extragenital pathology.

In the process of regular training, the functional capabilities of the athlete's body expand, and a gradual formation and development of fitness occurs. At the root of the development of fitness - a state determined by biological, pedagogical and psychological factors - lies the process of adaptation of the body to the action of repeatedly repeated stimuli - physical and mental stress. The level of training determines the athlete's well-being, his performance, reaction to load, and readiness to achieve high results in his chosen sport. The rate of increase in fitness and its manifestation are determined by the direction of the training process, the characteristics of the sport, the age and the initial level of preparedness of the athlete.

If the training is structured incorrectly and the load does not correspond to the athlete's capabilities (especially against the backdrop of previous illnesses, an irrational regimen and other factors that weaken the body), the normal course of development of training is disrupted, the athlete's well-being and performance deteriorate, various pathological conditions develop, among which the coach needs to be able to determine first of all overwork, overtraining and overexertion.

Overfatigue occurs when the phenomena of fatigue are layered, when the athlete's body does not recover from one activity or competition to another for a certain time. Overwork manifests itself in a longer-than-usual persistence of a feeling of fatigue after exercise, deterioration in well-being, sleep, increased fatigue, and unstable mood. Sports performance may generally remain without significant changes or decrease slightly. But difficulties in developing new motor skills and solving complex tactical problems become noticeable, and technical defects appear. Objectively, it is possible to determine a decrease in strength indicators, deterioration in coordination, and reaction to stress (extension of the recovery period). To eliminate overfatigue, it is usually enough to make short-term (over several days) adjustments to the training: introduce additional days of rest, reduce the load, change external conditions, exclude competitions, diversify rest, increase recovery measures (vitaminization, good nutrition, massage, etc.) .), normalize sleep and routine.

Overfatigue is a borderline state between the physiological phenomena of fatigue caused by physical activity and pathology. If the necessary measures are not taken in time, overwork can turn into overtraining.

Overtraining is a pathological condition, a manifestation of disadaptation , a violation of the level of functional readiness achieved during training, regulation of the activity of body systems, the optimal relationship between the cerebral cortex and the underlying parts of the nervous system, the motor system and internal organs.

Leading signs of overtraining: deterioration in well-being, increased fatigue, unstable mood (apathy or, on the contrary, irritability, aggressiveness), sleep and appetite disturbances, headaches, heaviness in the legs, etc., decreased performance and athletic performance, loss of interest in training and competitions. , lack of self-confidence, suspicion, obsessive states. In a state of overtraining, motor skills and habitual movement techniques, mutual understanding with partners are disrupted, body weight and muscle strength decrease, immunity, resistance to diseases, injuries, the effects of various stress factors, and increased sweating decrease.

Causes of overtraining.

Overtraining occurs only in highly qualified athletes, usually in the process of long, difficult and monotonous preparation for the main competitions of the sports season.

The cause of overtraining may be a violation of the principles of sports training: the principle of gradually increasing training loads, when their volume or intensity increases sharply, and other pedagogical and biological principles. That is, violations in the methodology of the training process, in the dosage of loads and rest pauses can be either one of the reasons or factors for the occurrence of this condition in an athlete.

The occurrence of overtraining is also facilitated by the monotony of methods, when only interval training is used for a long time, in which a certain muscle group is constantly loaded . Muscles adapt to specific training loads, usually within three weeks, reaching maximum adaptability . Further repetition of the same exercises does not increase adaptability . Moreover, after three weeks of such training, there is a risk of injury to muscles , ligaments, tendons, as well as a risk of psychosomatic disorder. Therefore, each training cycle should last no more than 3 weeks, and then, for 1 week, low-intensity and recovery-oriented training is carried out.

The training plan should include varying light, medium and heavy loads. This allows the body to recover and eliminates the monotony of the training process. Neglect of such variation results in severe consequences for the athlete’s body.

There are no pathological forms in the development and course of which the autonomic nervous system does not participate. In some cases, it is a significant factor in the pathogenesis of various diseases, in others it occurs secondary, in response to damage to any systems and tissues. Violations of the autonomic regulation of the functioning of the cardiovascular and other systems are the main component of overtraining and a factor in its occurrence. These are, in particular, atypical reactions to excessive training load, too tight competition schedule, with insufficient time intervals for recovery, frequent changes of time zones and climatic zones, when moving, trace asthenia after injuries, acute or chronic infection, etc.

That is, all these are stressors, the impact of which can be aggravated by the influence of other stressors (mutual aggravation syndrome): conflict with a coach, friends, family or household circumstances, problems with studies among student athletes, financial difficulties, etc.

Factors contributing to the occurrence of overtraining are previous or concomitant fatigue, lack of recovery , acute and chronic overexertion, colds associated with adenovirus infection, alcohol and nicotine intoxication.

Genetically determined individual characteristics of the athlete’s nervous and endocrine systems play a significant role in the rapidity of development of overtraining and are manifested by the severity of

symptoms and the effectiveness of its treatment. It is quite possible that the roots of this pathology can be found in the athlete's crippled childhood, where parental alcoholism or an incomplete family, psychological trauma (acute or chronic), educational defects, neurotic, constitutional personality traits are found.

In particular, vegetative dystonia is familial and manifests itself from an early age. It is characterized by unstable vegetative parameters: rapid change of skin color, sweating, pain and dyskinesia in the gastrointestinal tract, tendency to low-grade fever, nausea, poor tolerance of physical and mental stress, dependence on meteorological factors.

Such people are figuratively defined as "disabled autonomic system." They are not yet sick, but they are prone to intensifying all of these manifestations under the adverse influence of the external environment, for example, in the case of excessive training and competitive loads.

At the 1st stage of overtraining, there is a lack of growth in athletic performance, namely irritability, sometimes minimal disturbances in falling asleep or quality of sleep, apathy, reluctance to train, increased fatigue, and a feeling of under-recovery after a night's sleep. Impaired attention, memory, and migrating muscle pain may occur.

Overtraining, at the first stage, is short-term in nature, since adequate recovery measures quickly give the necessary effect.

At the 2nd stage of overtraining, which is often formed due to neglect of the symptoms of the first stage and the lack of necessary recovery measures, new symptoms are added to the above symptoms.

Sports results become unstable when an athlete's successful performances alternate with obvious failures. There is a decrease in physical performance during testing.

Irritability becomes obvious, noticeable by others. The athlete quarrels with his friends, becomes suspicious and aggressive. In other cases, on the contrary, there is a decrease in susceptibility, manifested by general lethargy, lethargy, indifference and lack of will, pathological daytime sleepiness, and depression.

The feeling of indifference to what is happening in similar situations is well known to professional athletes. This feeling may appear in the morning, after waking up or before training, competition, or may collapse during training or competition. Often, an athlete is not ready to fight this and loses without even consulting a doctor.

Some time later, after the completion of the competition, in the process of analyzing the unsuccessful performance, he realizes that it is all to blame for this very indifference. In addition, usually (with the help of a doctor or on his own) the athlete begins to understand that indifference is not the only alarming sign (asthenia) to which he did not attach importance.

In addition to the above-mentioned manifestations of overtraining, the athlete develops a painful suspicion. He suspects the coaches of wanting to remove him from the team; he suspects his teammates of wanting to interfere with effective competitive activity and discredit him. The athlete develops a feeling of insecurity in his abilities, signs of depression and, in connection with this, he begins to avoid participating in competitions under far-fetched pretexts.

Sleep disturbances are more pronounced than in the first stage of overtraining and pathological daytime sleepiness may be observed. Sometimes athletes complain of headaches, discomfort in the heart, heaviness in the legs and loss of sharpness of muscle-joint sensation.

At stage 3 of overtraining, athletic performance deteriorates sharply. Physical performance continues to deteriorate. Irritability takes extreme forms when an athlete violently and publicly quarrels with his comrades or coach, leaves the team, commits hooligan acts, etc. The symptoms listed above, inherent in the

second stage of overtraining, become more pronounced and severe. Pathological changes in the structure of soft tissues lead to frequent injuries that literally haunt the athlete.

Characteristic for this stage is a decrease in immunity and frequent, severe colds: sore throat, laryngitis, pharyngitis, tracheitis, bronchitis, etc.

Treatment is necessary only in the second and third stages of overtraining. Its first stage, according to most experts, is not a disease, in this case there is no need for treatment.

You don't even have to stop training, but you should "switch" the athlete to another type of sports activity. The volume and intensity of training loads can be somewhat reduced, but the participation of an athlete in competitions is completely unacceptable. The daily dose of multivitamins, microelements, mineral compounds should be increased, nutrition should be improved, additional massage sessions should be prescribed, and the athlete's rest conditions should be optimized.

At the 2nd stage of the disease, training stops and the athlete is treated for several weeks. After completing the course of treatment, according to the written opinion of the attending physician, the athlete is allowed to train.

Involvement in the training process should be carried out gradually, over 1-2 months, with regular objective monitoring.

At the 3rd stage of overtraining, treatment can last up to 2-3 months or more. In some cases, inpatient treatment is carried out. Getting involved in training is even slower - two or three months.

**Conclusion.** Prevention of overtraining consists in eliminating its causes and contributing factors. One of the main factors in the occurrence of overtraining, according to many experts, is the monotony of the training means and methods used, the monotony of enormous loads, the monotony and insufficiency of recovery measures, the monotony of the entire lifestyle of athletes. This monotony needs to be eliminated.

The occurrence of overtraining is facilitated by stressful situations in a sports team, family or financial circumstances, lack of sleep, frequent travel and associated changes in time zones and climate zones, low level of medical support for the training process and recovery and rehabilitation measures. Coaches and sports managers should have a clear understanding of the role of these factors and work to eliminate them together with doctors.

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