

## SPECIAL PHYSICAL PREPARATION OF ATHLETES IN MOTOR SPORT DURING TESTING METHODS BASIC TRAINING LEVEL OF PREPAREDNESS FOR COMPETITIVE ATHLETE LOAD

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**Annotation.** *Purpose:* to establish the reasons for the high fatigue pilots during passage race course. *Material:* the study involved athletes and race car drivers depending on the rank of the competition. The total number surveyed was 140 people. *Results:* in vitro studies have established a pattern of growth of errors in the evaluation of the available jobs at different levels of fatigue. This asymmetry observed in the haptic display and reflex mean arterial pressure when simultaneous registration on the left and right side body. After the competition and training at a special physical training were examined 36 athletes. Comparison of the results display asymmetry haptic reflex and mean arterial pressure showed reliable changes in the resistance of the organism to a specific exertion racers. *Conclusions:* the optimal load is characterized by indicators of coordination and reflex reaction haptic mean arterial pressure. These indicators do not go beyond the norms of its symmetrical appearance. This characterizes a uniform and sufficient blood supply body during the execution of competitive and training load.

**Keywords:** motorists - riders, haptics, blood supply, specific, load.

### Introduction

At present time technical and field events in sports are especially popular. Among all their variety auto racings take rather noticeable place; they are presented by very different variants both by conditions of distance and by weather conditions. All kinds of auto racings form racings in conditions of hot deserts to distances, covered by ice are equally extreme that requires from sportsmen high level of fitness to competitions [12, 13].

Naturally, the most important is the quality of technique and experience of driving. Physical fitness is of secondary importance, because all difficulties of passing distance influences on machinery. Physical load of auto racer has certain specificity, which is connected with constant static load, with variable tensions, depending on changes of accelerations, practically in all directions [7, 8]. These oscillations are determined by relief of distance and speed of movement. Main preparation to such kinds of physical load is realized in conditions of distance's passing and practically is a non standard occasional process, which varies within certain terms, limits of strength, space position of pilot and speed of this process [15, 9].

Just specificity of physical load determines the problem of organization of sportsmen-pilots' physical training in auto racing.

### Purpose, tasks of the work, material and methods

*The purpose* of our research is determination of reasons of pilots' high tiredness during passing of competition distance.

*Material and methods.* The researches were conducted in conditions of competition functioning and trainings in preparatory period at stage of basic training of auto racers.

*The tested* were sportsmen of all levels of fitness, depending on level of competition. Total quantity of the tested was 140 participants of competitions.

*The methods of the research:* questioning, interviewing, analysis of medical records of all participants, video-recording and its processing for biochemical analysis of dynamic characteristics, which influence on sportsman's organism on distance, measurement of cardio vascular system's indicators before and after passing distance, ortho-static test "sitting-standing" by N.Ye. Teslenko; analysis of participants' complaints just after racings, BP and haptic reflex's measurements, statistic processing of the results.

### Results of the researches

With the help of general training means usually endurance, speed, power, coordination abilities of pilots are stimulated, arsenal of their driving skills in extreme conditions of competition functioning is expanded. With it, supporting motor system is strengthened as well as functioning of internal organs and other organism's systems are improved [8]. Like in any kind of sports, in auto racing general physical training increases organism's resistance to high physical loads both at trainings and at competitions. The base of general physical training permits, on its base, to increase effectiveness of special physical training, which shall perfect depending on those mistakes and disadvantages, which are still frequent in competition functioning. In physical perfection, at the stage of basic training, it is especially important to ensure specialized differentiated training of appropriate functional systems and components of training process [10, 15].

To-day in general structure of training process's organization great attention is paid to technical preparation and rather insignificant attention is paid to psychological component; sportsmen's complaints, expressed by them after competitions or intensive trainings, are not responded.

The carried out questioning, oriented on determination of reasons of main complaints for bad self-feeling as well as on analysis of the most frequent professional traumas, permitted to specify the most characteristic de-stabilizations of physical condition, marked by sportsmen after competitions and big scopes of training loads. Considering kind of auto

racing and qualification level of sportsmen, we oriented classification of “complaints” and professional traumas on determination of similar kinds of professional and labor functioning, which, by their ideology, would completely coincide with analogous professional diseases and traumas, characteristic for auto racings [1].

As it was found from analysis of questioning, one of such accents is feeling of high tiredness of upper limbs, backbone, knee joints and shins.

The conducted analysis of special scientific literature did not permit to find scientifically grounded approach to prophylaxis of such symptoms of auto racers.

Similar symptoms is observed in a number of cases as characteristics of professional diseases in labor activity, connected with different vibrations and shock loads, for example among professional drivers, people, working with gravitational loads [11, 17].

Works in this direction to large extent deal with processes of overtiredness of upper and lower limbs’ muscles, oriented on rehabilitation of morphological functional changes, which appear under influence of professional loads [3, 16].

The reasons of such symptoms are overtiredness of certain morphological structures, followed by disordering of blood circulation, which results in chronic insufficiency of metabolic processes, ensuring complete recreation [14].

The fulfilled analysis of physical load, which is characteristic for auto-racers, shows that it belongs to category of long-lasting static effort, against the background of which different dynamic loads, connected with driving sport vehicle, take place. Static tension of working muscle results in reducing of its blood supply and increased tiredness. The most characteristic result of this process is bad accuracy of driving functioning and, finally, appearance of rough mistakes in driving of car. Such effect is accumulated by the end of distance [2].

In special laboratory researches, which implied evaluation of time interval, set value of effort or movement with specified amplitude of different statistic tensions, growth of evaluation mistakes was determined. It is especially clearly noticed in asymmetry of haptic reflex and mean BP with their simultaneous registration at left and right sides of body. The value of this error was connected with both duration of static force and its strength [4].

In physiology of labor and building of working actions such kinds of mutually conditioned processes between intensity of muscular work and worsening of coordination have been studied sufficiently profoundly. Then, such regularities were determined in physiology of sports, but concerning field events’ kinds, in particular auto racings< there have been no such researches.

In the whole, the existing physical training in auto racing does not pay sufficient attention to peculiarities of targeted development of trophic processes, ensuring enduring of physical load in conditions of long-lasting static tension. This process passes as natural as a result of executing of main motion function by schema “request results in development of appropriate vitally important systems”, but optimal mode of such interactions has been still insufficiently studied. Practically there has not been paid any attention to differentiated training of functioning of motion energy supply systems [6].

At the same time there exists a number of health related gymnastics, using systems of exercises, targeted on development of vessel system, regulation of vessels’ tonus, development of different sectors of respiratory system – external breathing, oxygen capacity, fermentative activity of gas metabolism at level of tissue breathing.

Such orientation of physical training increases not only total resistivity of organism, against the background of which organism’s adaptation abilities to specific professional loads significantly increases as well as strengthens resistivity to static loads. In system of special physical training the process of targeted development of energy supply in auto racing has not exists.

Considering this disadvantage we worked out special complexes of physical exercises, oriented on increasing of sportsmen’s workability in conditions of long lasting static loads. They include breathing exercises with certain effort, which is regulated by changes of partial oxygen and carbon dioxide pressures and a number of other specialized loads on systems, which endure significant share loads in period of main work.

In structure of worked out by us specialized differentiated training of functional systems the main condition is complete absence of total physical load during training. The second peculiarity of this process is strong individualization of mode of total volume of specialized exercises.

Comparison of results of haptic reflex’s and mean BB asymmetry, which were received from 140 sportsmen after competitions and the, from 36 sportsmen, which were examined after special physical training, showed that there are confident progress in organism’s resistivity to specific physical load of auto-racers.

The sense of these changes is that coordination response, manifested in haptic reflex, does not exceed norms of its symmetric manifestation. Response of mean BP also remains to be symmetric that characterizes uniform and sufficient blood circulation in body under competition or training loads.

#### **Conclusions:**

One of the most substantial reasons of auto-racers’ tiredness is static load at distance. Main reason of this phenomenon is connected with insufficient strength of unstriated muscles of arterial vessels that does not permit to completely ensure transport function of blood under static load, with keeping sportsman’s working position.

Application of differentiated training of functional systems in period of special physical training permits to substantially increase total organism’s resistivity and, in particular, endurance of long- lasted static loads, which are frequent in competition functioning.

Effective method of control over current state and readiness to physical loads is control of symmetry level of mean BP in left and right parts of body, which characterizes sufficiency of blood circulation.

Further researches will be oriented on improvement of system of special differentiation of physical training with the help of special physical exercises, oriented on development of cardio-vascular and respiratory systems, will permit to significantly influence on auto-racers' special endurance.

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