

STUDYING OF INDICATORS OF NEUROMUSCULAR SYSTEM OF THE MAIN PROFESSIONAL GROUP OF WORKERS OF THE PHARMACEUTICAL PRODUCTION

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ИЗУЧЕНИЕ ПОКАЗАТЕЛЕЙ НЕРВНО-МЫШЕЧНОЙ СИСТЕМЫ У РАБОТНИКОВ ОСНОВНЫХ ПРОФЕССИОНАЛЬНЫХ ГРУПП ФАРМАЦЕВТИЧЕСКОГО ПРОИЗВОДСТВА

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Abstract: *in the article, it is specified that the labor process which is carried out by workers of the main professional groups of pharmaceutical production is led to the expressed depression of indicators neuromuscular by system (force of hands and muscular endurance) that testifies to the developing production fatigue which is considerably aggravated at the increased air temperatures in workplaces, and exceeds physiological standards of maximum-permissible size of a physical strain of an organism at work.*

Аннотация: *в статье указано, что трудовой процесс, выполняемый работниками основных профессиональных групп фармацевтического производства, приводит к выраженному снижению показателей нервно-мышечной система (силы кистей рук и мышечной выносливости), что свидетельствует о развивающемся производственном утомлении, которое значительно усугубляется при повышенных температурах воздуха на рабочих места, и превышает физиологические нормативы предельно-допустимой величины физического напряжения организма при труде.*

Keywords: *occupational health and labor protection, pharmaceutical production, workers, working conditions, dynamics of the working day, neuromuscular system, an animal force, muscular endurance, a brush tremor, physiological norms, a production fatigue.*

Ключевые слова: *гигиена и охрана труда, фармацевтическое производство, работающие, условия труда, динамика рабочего дня, нервно-мышечной система, мышечная сила, мышечная выносливость, тремор кисти, физиологические нормы, производственное утомление.*

It is established that muscles at long activity pass two states: pretiresome period of work and period of fatigue. At the expressed fatigue there is not only a sharp falling of muscular working capacity, but also retardation of its recovery rate, i.e. muscular working capacity can be used as the indicator characterizing the processes arising in a cortex of larger cerebral hemispheres in connection with any kind of work [2, p. 105]. At the same time depression of muscular endurance is result of working capacity depression, mainly, of cortical cells, at the same time protective inhibition plays an important role here [1, p. 21; 4, p. 104]. It is known that working conditions, including the heating microclimate, exert a certain impact on efficiency of the person, in particular, on the indicators characterizing a functional condition of neuromuscular system [3, p. 15; 5, p. 12].

The nature of labor process of workers of the main professional groups of pharmaceutical production is defined by the fact that all of them work by standing, ensured trouble-free operation and at the same time during the larger period of work at their static stress of muscles of the back and the top extremities takes place. For studying of dynamics of the indicators characterizing nervously - muscular system force of hands by the dynametric method, muscular endurance – method of the dynamography and fastness of coordination function – a tremometric method is studied. According to physiological norms of a strain of an organism at physical work, change of indicators of functional systems shouldn't exceed 20% of background level. Endurance to a static stress is determined by duration of the period during which surveyed keeps the effort peer of 75% of the maximum force.

According to the obtained data from the workers, through beginning to the end of the shift, there is a decrease of force of the brush of the right arm from $29,1 \pm 0,4$ to $21,6 \pm 0,4$ kg, the left arm from $25,8 \pm 0,3$ to $19,6 \pm 0,3$ kg, muscular endurance – from $49,2 \pm 0,5$ to $40,5 \pm 0,6$ seconds is observed. Depression of muscular endurance with a certain degree of probability indicates the production fatigue developing at them. The quantity of contacts when performing tasks on a tremometer increased from $13,9 \pm 0,7$ up to $17,4 \pm 0,2$ contacts (drawing), at the same time also time of performance of the task from $11,5 \pm 0,2$ to $16,8 \pm 0,1$ seconds was enlarged. At the same time during the warm period of year the taped shifts exceeded admissible sizes more than for 18-20%.

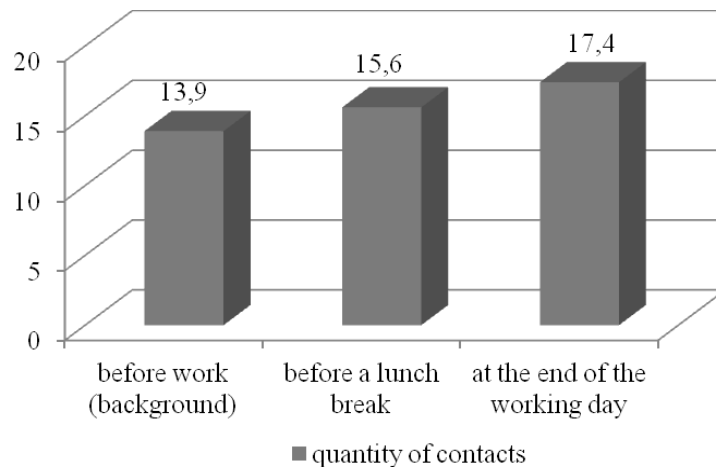


Fig. 1. Drawing. Dynamics of changes of indicators of a tremometriya in dynamics of the working day

Depression of workers of fastness of coordination function can be bound to disturbance of a normal ratio of the main nervous processes at various levels of the central nervous system, in particular, of a motor analyzer, as a result of the developing production fatigue. Intensifying of a tremor of arms to the extremity of the working day can be explained with existence in process of work at them a physical overstrain of the hands caused by the nature of the carried-out production operations.

Thus, the work performed by workers of the main professional groups of pharmaceutical production leads to the expressed depression of force of hands and muscular endurance that testifies to the developing production fatigue which is considerably aggravated at the increased air temperatures in workplaces, and exceeds physiological standards of maximum-permissible size of a physical strain of an organism at work.

References

1. Lvov S. E., Nikonova M. V. Influence of professional activity on function of a brush at weavers // Prophylaxis of diseases and strengthening of health of Prophylaxis of diseases and strengthening of health women of textile workers. Collection of scientific works. Ivanovo, 1988. P. 21-22.
2. Maryanovich A. T., Balandin V. S., Bekuzarov A. K. Specific features of reactions of an organism to the combined thermal and exercise stress // Human physiology. M., 1984. T. 10. № 11. P. 104-111.
3. Muratova A. K. Influence of static loads on an organism of working mechanical shops of mechanical engineering industry and prophylaxis of their adverse effect. L., 1996. P. 15.
4. Stoma M. F., Kovalenko T. A. Methods of assessment of a functional condition of the neuromuscular device // In book: Topical issues of prophylaxis impact of hum, vibration, ultrasound in the conditions of modern production. M., 1988. Issue 33. P. 104.
5. Shardakova E. F., Matuyhin V. V., Elizarova V. V. etc. Prophylaxis of a muscular overstrain at physical activity // Medicine of work and an industrial bionomics. M., 1999. № 7. P. 12-15.