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Assessment of the Functional and Psychophysiological Condition of the Dental Health of Workers at Mechanical Engineering Enterprises

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Relevance of the study. Modern manufacturing processes in mechanical engineering are affected by a number of negative factors - metal aerosols, vibration, heat and noise, and organic compounds-which significantly negatively affect the organs and tissues of the oral cavity. These include inflammatory and destructive periodont diseases, as well as a high incidence of functional disorders of the chewing system, which work in this area. The inefficiency of traditional methods of treatment requires an integrated approach that combines dentistry, hygiene and rehabilitation. One of the most important indicators of Public Health, defined as the state of mental and social well-being in modern production workers in mechanical engineering, is the health of the working population. Modern production workers in Mechanical Engineering are characterized by a high degree of morbidity, including somatic diseases, occupational and work-related diseases, as well as a significant decrease or loss of labor capacity due to inconveniences in temporary and permanent work ravines, as well as a high mortality rate, especially among men of working age. The proportion of elderly people in the working population is increasing, which also reduces the level of working capacity. It is known that the socio-economic development of the country largely depends on the health and working capacity of workers[1.3.5.7.9.11.13].

One of the main tasks of ensuring the medical and dental health of modern production workers in Mechanical Engineering is maintaining the Labor potential, the quality of life and health of workers, reducing the consequences of industrial injuries, accidents, occupational diseases, timely provision of preventive and therapeutic services, availability and effectiveness of medical care. Providing dental care to workers of industrial enterprises is one of the most important principles for organizing medical and preventive care for the population, which significantly affects the health of the working contingent. At the same time, the absence of a single scheme for providing dental assistance to workers in industrial enterprises leads to a sharp decrease in the effectiveness and quality of preliminary and periodic dental examinations, which are the main link of the system for the Prevention of dental diseases in workers affected by harmful and dangerous professional factors. One of the main problems of providing medical care to workers of industrial enterprises in the modern health and health system remains one of the urgent tasks waiting for a solution in medical practice in the absence of structural-functional interaction between medical specialists and ensuring continuity of treatment and preventive measures within the framework of periodic medical examinations and subsequent stages of The need to continue experimental and hygienic research on this problem, taking into account the evidence presented, has not lost its relevance.

A comprehensive, multi-year study of the dental health of workers at Mechanical Engineering Enterprises was carried out using modern clinical, instrumental and laboratory methods. As a result of professional injuries, the patterns of development of dental diseases are determined depending on the length of work and the intensity of the influence of professional factors. In this population, criteria for early diagnosis and prognosis of dental pathology have been developed. An integrated system of prevention and rehabilitation has been developed and tested, which includes step-by-step diagnosis and treatment of dental diseases, normalization of local biochemical indicators and functional restoration.

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A complex of occupational factors contributes to the development of chronic diseases of the oral cavity, such as hypertrophy of the palatine tonsils, subatrophic diseases of the oral mucosa, inflammation of periodontal tissues, carious and non—carious lesions of the hard tissues of the teeth. Studies of the epidemiology of dental diseases conducted in many countries of the world indicate significant differences in the prevalence and intensity of dental caries, periodontal diseases and oral mucosa, and the determining role of natural, social, domestic, cultural, and occupational factors in the development of these processes [2.4.6.8.10.12.14].

The main influence of production factors is manifested through air pollution of the work area, work clothes, skin and mucous membranes, which occurs as a result of imperfect technological processes or non-compliance with safety regulations. Research data from chemical workers showed that the damage to the hard tissues of the teeth of workers in these industries was more than 90%, the CPI index, depending on work experience, age, body condition and saliva properties, ranged from 2.0 to 24.0 units. The influence of gas pollution in the workplace, mechanical and thermal stresses, temperature fluctuations, conditions! The impact on the pH and buffering capacity of workers' saliva, the macro - and microscopic composition of dental hard tissues, and the resistance of enamel to adverse factors contributed to the appearance of cracks and necrosis of enamel. A high level of non-carious lesions, the prevalence of periodontal diseases with a predominance of severe forms of lesions and diseases of the oral mucosa, mainly with hyperkeratosis and suppression of all types of taste sensitivity. Under the influence of these harmful substances, suppression of local immunity was noted, which manifested itself in a decrease in the level of sIgA and lysozyme, and the dependence of the prevalence of lesions of the oral cavity on the length of service and age was revealed.

When studying the dental morbidity of workers in the fuel production of an oil refinery, a high frequency of keratoses of the oral mucosa was determined, which occurred in workers of the enterprise 16 times more often than in workers of the control group. The direct dependence of the prevalence of these diseases on production conditions has also been revealed. These data confirm the data obtained during the survey of workers in the oil refining industry in Germany. Occupational pathology of oral tissues of workers in the oil refining industry, keratosis of the mucous membrane of the cheeks, corners of the mouth and hard palate. When studying the dental morbidity of workers employed in chemical production, the prevalence of carious lesions of teeth was 100% with an average CP of 21.0±0.24; in 24%, the presence of a wedge-shaped defect and in 64%, a combination of pathological erasure with a wedge-shaped defect.; in 18% - leukoplakia, the intensity of dental diseases increased with increasing length of service.

Conclusion. A scientifically based and specific complex system of prevention, treatment and dental rehabilitation was created, including specialized preventive measures, differential methods of dental treatment and rehabilitation programs using physiotherapeutic and balneological factors. The developed system significantly reduces the prevalence and severity of dental diseases, improves the dental health and quality of life of workers, reduces temporary disability and increases labor productivity. The proposed diagnostic, treatment and rehabilitation algorithms can be carried out in dental clinics at industrial enterprises and specialized occupational pathology centers.

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Vol. 4 No. 01 (2026)
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