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THE IMPACT OF METALWORKING PRODUCTION CONDITIONS ON THE ORAL CAVITY OF WORKERS

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Introduction

Modern metalworking production is one of the leading industrial sectors and is characterized by the impact of a complex of unfavorable occupational factors on the human body. These factors include metal dust, aerosols, chemical vapors, high temperatures, vibration, noise, and an unfavorable microclimate. Prolonged exposure to these factors can lead to the development of occupational and work-related diseases, including disorders of the oral cavity.

The oral cavity is the initial part of the digestive system and the first barrier to harmful substances entering the body. The oral mucosa, periodontal tissues, and hard dental tissues are particularly sensitive to chemical and physical irritants. Workers in metalworking industries often exhibit inflammatory gum diseases, dental caries, changes in the oral mucosa, and functional disorders of salivation.

The study of the oral health status of metalworking workers is a relevant task in preventive dentistry, as it allows for the identification of early changes associated with occupational hazards and the development of preventive measures.

Materials and Methods

The materials used for this work included data from scientific publications, educational literature on dentistry and occupational hygiene, as well as the results of clinical observations described in specialized sources. Methods of comparative analysis, generalization, and systematization of literature data were used.

The working conditions of metalworking employees, the nature of harmful occupational factors, and their effects on the organs and tissues of the oral cavity were analyzed. Special attention was paid to the prevalence of dental diseases and the mechanisms of their development under the influence of occupational factors.

Main Part

Occupational Hazards in Metalworking

Metalworking production is accompanied by the formation of metal dust and aerosols containing particles of iron, nickel, chromium, aluminum, and other metals. When inhaled and

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entering the oral cavity, these particles settle on the mucous membrane, teeth, and interdental spaces. In addition, lubricating and cooling fluids, acids, alkalis, and other chemical substances may be present in the working environment.

An unfavorable microclimate, high temperature, and dry air contribute to reduced salivation, which weakens the protective properties of saliva and increases the risk of dental diseases.

Changes in the Oral Mucosa

Under the influence of metal dust and chemical irritants, the oral mucosa is subjected to chronic irritation. This can lead to the development of chronic stomatitis, gingivitis, hyperkeratosis, as well as the appearance of microcracks and erosions. Some workers experience burning sensations, dry mouth, and discomfort during food intake.

Long-term exposure to harmful factors may cause dystrophic changes in the oral mucosa and reduce its regenerative capacity.

Diseases of Teeth and Periodontal Tissues

Workers in metalworking enterprises demonstrate a high prevalence of dental caries. This is associated with impaired oral hygiene in industrial conditions, changes in saliva composition, and the accumulation of dental plaque containing metal particles.

Periodontal diseases, such as gingivitis and periodontitis, are also more common in this group of workers. Metal dust and toxic substances intensify inflammatory processes in periodontal tissues, contribute to gingival bleeding, and lead to the destruction of the alveolar bone.

Prevention of Dental Diseases

Prevention of oral cavity disorders in metalworking workers should include both general and specific measures. These include improving working conditions, using personal protective equipment, regular preventive dental check-ups, education on oral hygiene practices, and the use of therapeutic and preventive dental products.

Conclusion

Thus, working conditions in metalworking enterprises have a significant impact on the oral health of workers. Exposure to metal dust, chemical substances, and an unfavorable microclimate contributes to the development of inflammatory diseases of the oral mucosa, dental caries, and periodontal pathology.

Timely prevention, early diagnosis, and improvement of sanitary and hygienic working conditions play an important role in maintaining the dental health of this professional group. The study of occupationally related changes in the oral cavity helps to increase the effectiveness of preventive measures and improve workers' quality of life.

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