DOI: 10.38095/2181-466X-20261221-44-46 УДК 613.6.6.663.4

THE FUNCTIONAL ASPECTS OF DENTAL HEALTH IN MECHANICAL ENGINEERING EMPLOYEES

E. R. Vohidov[1,2], J. A. Rizaev[3]
[1]Bukhara state medical institute, Bukhara,
[2]Specialized Pediatric Dental Center, Bukhara Region,
[3]Samarkand state medical university, Samarkand, Uzbekistan

Key words: workers of machine-building enterprises; dental health; differentiated methods of dental treatment.
Таянч сўзлар: машинасозлик корхоналарида ишчилари, стоматологик саломатлиги, стоматологик даволашнинг дифференциал усуллари.
Ключевые слова: работники машиностроительных предприятий, здоровье зубов, дифференцированные методы лечения зубов.

It is important to study the functional aspects of employees' dental health in order to reduce the impact of occupational factors (vibration, dust, chemicals) on the oral cavity. Occupational health activities include monitoring the prevalence of diseases, developing preventive measures, and conducting regular medical check-ups, which help improve work efficiency and enhance the overall health of employees.

МАШИНАСОЗЛИК КОРХОНАЛАРИ ИШЧИЛАРНИНГ СТОМАТОЛОГИК САЛОМАТЛИГИНИНГ ФУНКЦИОНАЛ ЖИҲАТЛАРИНИ ЎРГАНИШ

Э. Р. Воҳидов[1,2], Ж. А. Ризаев[3]
[1]Бухоро давлат тиббиёт институти, Бухоро,
[2]Бухоро вилоят ихтисослаштирилган болалар стоматология маркази,
[3]Самарқанд давлат тиббиёт университети, Самарқанд, Ўзбекистон

Машинасозлик корхоналари саноат омилларининг (тебраниш, чанг, кимёвий моддалар) оғиз бўшлиғига таъсирини камайтириш мақсадида ходимларнинг тиш соғлиғининг функционал жиҳатларини ўрганиш муҳим аҳамиятга эгадир. Бунга касалликларнинг тарқалишини кузатиш, профилактика чоралари ва тиббий кўрикларни ишлаб чиқиш киради, бу эса ходимларнинг самарадорлиги ва умумий соғлиғини яхшилайди.

ИЗУЧЕНИЕ ФУНКЦИОНАЛЬНЫХ АСПЕКТОВ СТОМАТОЛОГИЧЕСКОГО ЗДОРОВЬЯ РАБОТНИКОВ МАШИНОСТРОИТЕЛЬНОГО ПРЕДПРИЯТИЯ

Э. Р. Вохидов[1,2], Ж. А. Ризаев[3]
[1]Бухарский государственный медицинский институт, Бухара,
[2]Бухарский областной специализированный детский стоматологический центр,
[3]Самаркандский государственный медицинский университет, Самарканд, Узбекистан

Важно изучать функциональные аспекты стоматологического здоровья сотрудников, чтобы снизить воздействие производственных факторов (вибрация, пыль, химикаты) на полость рта. Это включает мониторинг распространённости заболеваний, разработку профилактических мер и проведение регулярных медицинских осмотров, которые повышают эффективность работы и общее состояние здоровья сотрудников.

Relevance of the problem. The dental health of mechanical engineering workers is characterized by a high prevalence of caries and periodontal diseases, which is associated with exposure to harmful occupational factors such as dust, vibration, and airborne chemical pollutants. A comprehensive assessment of the functional state of oral tissues, oral-hygiene practices, and psychophysiological adaptation to dental treatment is therefore required.

Modern manufacturing processes in mechanical engineering involve multiple adverse factors – metal aerosols, vibration, heat, noise, and organic compounds – that can negatively affect the organs and tissues of the oral cavity. These exposures contribute to inflammatory and destructive periodontal diseases, as well as a high incidence of functional disorders of the masticatory system among workers in this field. The limited effectiveness of traditional approaches indicates the need for an integrated strategy combining dentistry, hygiene, and rehabilitation. [1,3,5,7,9,11]

One of the most important indicators of public health is the health of the working population, understood as a state of physical, mental, and social well – being. In mechanical engineering, workers demonstrate a high overall morbidity burden, including somatic diseases, occupational and work-related diseases, and a significant reduction or loss of work capacity due to temporary and permanent disability. Mortality also remains high, especially among men of working age. The proportion of older workers is increasing, which further reduces overall work capacity. It is well known that socio-economic development largely depends on the health and working capacity of workers.

Aim and objectives. The study aimed to provide a scientific basis for preventive measures and to develop and implement a comprehensive system of prevention, treatment, and dental rehabilitation for workers of machine-building enterprises.

Objectives included:

To study the prevalence and structure of major dental diseases among workers of machine-building enterprises, considering work experience and the nature of occupational risks.

To determine the clinical features of caries, periodontal diseases, and oral mucosal pathology in the examined workers.

To investigate the morphofunctional state of the oral mucosa and periodontal tissues under the influence of industrial factors.

To assess the functional and psychophysiological state of dental health in workers of machine-building enterprises.

To scientifically substantiate and develop a comprehensive program for the prevention of dental diseases in this occupational group.

To develop and implement differentiated treatment methods for major dental diseases, taking into account the level of occupational exposure.

Data were collected from dental patients with different lengths of employment at mechanical engineering enterprises who developed dental diseases as a result of exposure to harmful industrial factors (metal aerosols, organic compounds, noise, vibration, and thermal fluctuations). [2,4,6,8,10]

Materials and methods. A comprehensive multi-year study of the dental health of workers at mechanical engineering enterprises was conducted using modern clinical, instrumental, and laboratory methods. Patterns of dental disease development were identified depending on length of employment and intensity of occupational exposures. Criteria for early diagnosis and prognosis of dental pathology were developed for this group of population.

An integrated system of prevention and rehabilitation was developed and tested, including step-by-step diagnosis and treatment of dental diseases, normalization of local biochemical indicators, and functional restoration. A scientifically substantiated and occupation-specific comprehensive system of prevention, treatment, and dental rehabilitation was created, including rehabilitation programs using specialized preventive measures, differentiated dental treatment methods, and physiotherapeutic and balneological factors. The developed system significantly reduces the prevalence and severity of dental diseases, improves dental health and quality of life, reduces temporary disability, and increases labor productivity.

Key aspects of dental health research at machine-building enterprises. At mechanical engineering enterprises, the functional state of employees' dental health is assessed in order to reduce the adverse effects of industrial factors (such as vibration, dust, and chemicals) on the oral cavity. This approach involves monitoring disease prevalence, developing preventive measures, and conducting regular medical examinations, thereby improving work efficiency and the overall health of employees.

Key directions include:

Impact of the work environment: assessing how harmful working conditions (e.g., workshops) affect teeth and the oral mucosa.

Occupationally determined pathology: identifying specific dental pathologies associated with particular occupational exposures.

Prevention package: developing systems that include both prevention and treatment (primary and secondary prevention), including protective measures and improvements in working conditions.

Follow-up: introducing regular check-ups for early detection and improved overall employee health.

Epidemiological findings in workers exposed to "CMC" production. In different groups of workers employed in CMC production, the prevalence of dental caries did not differ significantly and ranged from 94.12% to 97.3%. The CPI index in these groups ranged from 11.3 to 13.5. Among workers with direct contact with CMC components and finished products (groups 2 and 3), the carious process was more intense.

In the structure of the CPI components, decayed teeth predominated in both age groups. Meanwhile, workers who did not have direct contact with CMC and its components (group 1) had

a higher proportion of filled teeth ($p<0.05$). Workers in group 1 were 2–2.5 times more likely than those in groups 2 and 3 to have various non-carious dental lesions (erosions, wedge-shaped defects, etc.).

This finding may be explained by the fact that, in groups 2 and 3, after 13–16 months from the start of work, direct contact with CMC and its components contributed to the rapid onset and progression of caries, which masked the diagnosis of non-carious lesions.

The need for dental treatment among production workers was lowest in those who did not have direct contact with CMC: 48.4% and 52.3% in the two age groups, respectively. Workers in direct contact with CMC and its components (groups 2 and 3) more often required rehabilitation measures for hard tissue pathology and complicated caries—59.3% and 69.3% of cases, respectively.

Conclusion. An assessment of the level of dental care in the three surveyed groups of production workers showed that the USP index was satisfactory only in individuals from group 1, as well as in younger workers (21–35 years) in groups 2 and 3. Among workers aged 36–52 years in groups 2 and 3, the USP index was 48.3% and 44.7%, respectively.

References:

1. Аляветдинов Р.И. Роль профилактических мероприятий в охране здоровья работающих с вредными условиями труда. 2004г. М.- Дисс. доктора медицины НИИ РАМН общ здоровья. 314 с.
2. Близнюк В.Д. Проблемы здоровья населения Российской Федерации в 21 веке. // Гигиена и санитария 2001 г. - № 4, С. 68-70.
3. Гарипова Л.Н., Позднухова Л.А. О совершенствовании медико-санитарной помощи работающим во вредных условиях труда. // Медицинские науки, 2005г. - №1, С. 47-52.
4. Государственный доклад о состоянии здоровья населения Российской Федерации в 2002 году. М., 2003г., 120с.
5. Иванов Г.А. и др. Дейтериевые взрывы энергия близкого будущего. Электротехника 2010, т.2, V симпозиум, ТРАВЭК - ВЭИ, 19-22 октября 1999г.
6. Кокорина Е. Цифры, которые отразили главные показатели. // Медицинская газета.-2001г.-25 мая.
7. Котляревская Т.И. Лупцов А.Б. Современная концепция качества статистических данных и её использование в статистической практике. // Вопросы статистики.- 2002.- № 5.- С. 3-8.
8. Максимова Т.М., О.Н.Гаенко. Здоровье населения и социально-экономические проблемы общества. // Проблемы соц. гигиены, здравоохранения и истории медицины 2003г.- №1.- С. 3-7.
9. Медик В. А. Современное состояние демографии в Российской Федерации. // Проблемы соц. гигиены, здравоохранения и истории медицины- 2001 №1 . - С. 3-7.
10. Онищенко Г.Г., Беляев Е.Н. и др. Социально-гигиенический мониторинг городского населения. // Гигиена и санитария -2001-№1.- С. 3-5.
11. Щепин О.П. Методологические основы обеспечения качества медицинской помощи. // Проблемы соц. гигиены, здравоохранения и истории медицины-2001 .-№3 С.3-10.