

12-29-2021

## STUDY OF HYGIENIC ASPECTS OF WORKING CONDITIONS OF PHARMACEUTICAL COMPANIES' EMPLOYEES

Guzal T. Iskandarova

*Tashkent Medical Academy, Tashkent, 100109, Uzbekistan, guzaltulkinovna@mail.ru*

Munisa N. Tashpulatova

*Tashkent Medical Academy, Tashkent, 100109, Uzbekistan, munisatashpulatova15@gmail.com*

Shakhnoza I. Kurbanova

*Tashkent Medical Academy, Tashkent, 100109, Uzbekistan, shahnoza.kurbanova5@gmail.com*

Guzal F. Sherkuzieva

*Tashkent Medical Academy, Tashkent, 100109, Uzbekistan, guzal.sherquzieva@gmail.com*

Follow this and additional works at: <https://uzjournals.edu.uz/tma>

---

### Recommended Citation

Iskandarova, Guzal T.; Tashpulatova, Munisa N.; Kurbanova, Shakhnoza I.; and Sherkuzieva, Guzal F. (2021) "STUDY OF HYGIENIC ASPECTS OF WORKING CONDITIONS OF PHARMACEUTICAL COMPANIES' EMPLOYEES," *Central Asian Journal of Medicine*: Vol. 2021 : Iss. 4 , Article 14.

Available at: <https://uzjournals.edu.uz/tma/vol2021/iss4/14>

This Article is brought to you for free and open access by 2030 Uzbekistan Research Online. It has been accepted for inclusion in Central Asian Journal of Medicine by an authorized editor of 2030 Uzbekistan Research Online. For more information, please contact [sh.erkinov@edu.uz](mailto:sh.erkinov@edu.uz).

## STUDY OF HYGIENIC ASPECTS OF WORKING CONDITIONS OF PHARMACEUTICAL COMPANIES' EMPLOYEES

**Guzal T. Iskandarova<sup>1</sup>, Munisa N. Tashpulatova<sup>2</sup>, Shakhnoza I. Kurbanova<sup>3</sup>,  
Guzal F. Sherkuzieva<sup>4</sup>, Nargiza R. Samigova<sup>5</sup>**

1 Doctor of Medical Sciences, Professor of the Department of Communal Hygiene and Occupational Health of Tashkent Medical Academy, Tashkent, Uzbekistan  
E-mail: guzaltulkinovna@mail.ru

2 Assistant of the Department of Communal Hygiene and Occupational Health of Tashkent Medical Academy, Tashkent, Uzbekistan  
E-mail: munisatashpulatova15@gmail.com

3 Associate Professor of the Department of Communal Hygiene and Occupational Health of Tashkent Medical Academy, Tashkent, Uzbekistan  
E-mail: shahnoza.kurbanova5@gmail.com

4 Associate Professor, Department of Communal Hygiene and Occupational Health of Tashkent Medical Academy, Tashkent, Uzbekistan  
E-mail: guzal.sherquzieva@gmail.com

5 Associate Professor, Department of Communal Hygiene and Occupational Health of Tashkent Medical Academy, Tashkent, Uzbekistan  
E-mail: nargiz.samigova@gmail.com

### ABSTRACT

In Uzbekistan, special attention is paid to the production of medicinal preparations from local plant raw materials. Taking into account the existence of a rich market of plant raw materials in Uzbekistan, hygienists must to develop measures to improve health of employees in modern pharmaceutical enterprises and assess the working conditions. In addition, pharmaceutical enterprises are characterized by the use of a wide range of inorganic and organic chemicals, obtained by natural and organic synthesis. In such manufacturing enterprises, the preparation of medicines is a prolonged process that takes into account raw materials, including substances derived from plants, reagents, many times loading and unloading of various components, which is considered to be very negative from a hygienic point of view. The reason for this is the pollution of air in the production environment. At the same time, the peculiarities of such a production process create conditions for the formation of factors that adversely affect

workers. All of the above will be the basis for carrying out this study and will require the development of scientifically based recommendations aimed at preventing fatigue in production, reducing the risk of occupational diseases, as well as the creation of a system of preventive measures, in the case of the presence of a large number of working groups in severe conditions of a system of preventive measures.

**Key words:** pharmaceutical enterprise, technological process, harmful factor, measure.

## INTRODUCTION

At the beginning of the 21st century in the Republic of Uzbekistan, the field of hygiene entered its history with the search for new effective ways of profiling health and diseases, as well as with the wide promotion of living and working in an environmentally friendly, harmless environment. One of the most important importance of the production process is the expression from the organization of safe working conditions and rationalization of the labor process [12, 28]. Uzbekistan pays great attention to the production of medicines from local plant raw materials, but at the same time the working conditions of workers in pharmaceutical companies and the modern pharmaceutical industry are not sufficiently studied [30]. Organic and inorganic chemicals that are considered hazardous to the environment and human health are released into the atmosphere during the preparation of drugs. Therefore, in the study of environmental safety problems in pharmaceutical companies, the assessment of working conditions and the development of health measures are of particular importance [1, 4, 17].

The chemical-pharmaceutical industry is one of the most profitable industries in the world, but also belongs to the group of environmentally hazardous production [21]. The main activity of the pharmaceutical company is related to the production of medicines and drugs [10]. The production chain is associated with a large number of operations and requires the use of a variety of raw materials [9]. Most of the employees of the pharmaceutical company are engaged in the management of instruments and devices in production activities and monitoring of equipment handlers (apparatus, ampoule filling, sterilization of materials and drugs). In the work process, the main work is done manually. A number of inconvenient factors (noise, high temperature) complicate the work process. Chemistry - One of the main features of the pharmaceutical industry is the large use of raw materials that store a variety of chemicals. More than 3,000 different chemicals (alcohol, acid, essential oils, hydrogen chloride, etc.) are used in the manufacture of medicines [13, 15].

Every year new technological processes are developed and new drug compounds are synthesized, but their toxicological properties remain unexplored

[7, 26]. All chemicals affect many physiological systems (sensory organs and nervous system, circulatory system, cardiovascular and hepatobiliary system) [14]. The results of research by foreign scientists have shown that due to unsatisfactory working conditions and the system of protection, workers in the pharmaceutical industry develop injuries and occupational diseases during high-level production. At the same time, as a result of declining efficiency and the development of socio-economic crisis, there are various problems with the supply of medicines to the population [19, 33]. In all pharmaceutical industries, the dusting of the working environment, the formation of harmful gases and the release of vapors containing chemicals create unfavorable working conditions. Such working conditions have a negative impact on the health and ability of workers to work.

Therefore, hygienists are required to develop a modern solution in the proper organization of work and rest of workers [16, 24, 27]. Research by a group of scientists has shown that the organization of working conditions that meet the hygienic requirements for success in any production process reduces the weight and intensity of the work process and prevents the development of various occupational diseases in workers [5, 11, 29]. As a result of harmful working conditions, the health of workers deteriorates and the quality of life decreases, resulting in a decrease in life expectancy and an increase in the cost of social assistance [22]. Research by local scientists has shown that the widespread use of organic and inorganic chemicals in pharmaceutical companies results in the release of mixed dust into the working environment and the formation of various reagent aerosols. Manual operations are often used in the production process, so workers are in direct contact with harmful factors that are released at different stages of the technological process [2, 23].

Analysis of the literature shows that the hygiene of working conditions in pharmaceutical companies is not sufficiently studied, the development of the chemical industry on the one hand leads to many achievements, on the other hand the impact of various harmful factors for workers, including poor organization of work and rest, Lack of modern personal protective equipment for workers, low efficiency of the ventilation system in the workplace, lack of a laboratory to determine the level of carbonation in the work environment, the development of acute and chronic occupational diseases as a result of direct exposure to toxic substances [6]. In the modern way of life, a person is affected by various factors of the environment. The professional activities of the workers of the pharmaceutical company are related to chemicals. Unfavorable working conditions, non-compliance with labor protection and safety requirements, emergencies as a result

of exposure to chemicals, as well as acute and chronic poisoning, impaired reproductive function.

The impact of harmful factors not only endangers the health of workers, but also has a negative impact on other production facilities and the population located close to the pharmaceutical company [31]. According to research, in the labor process of workers in the pharmaceutical industry are formed complex production factors that affect the functional state of the organism, resulting in fatigue in production and reduced ability to work. Changes in functional status depend on working conditions, labor organization, severity and intensity of the labor process [8, 20]. In order to maintain the health of workers, their ability to work, long years of work, great attention is paid in physiology to the study of the influence of complex factors in the production environment, the labor process, the weight and intensity of labor. In the phytochemical and galenic shops of the pharmaceutical enterprise, the main professional group consists of workers as apparatus, sterilizers, packers. In order to rationally organize work and rest, timekeeping was conducted to develop recommendations and the heart rate of workers was studied. To do this, groups of 8-10 workers from each profession were selected, and the heart rate was checked three times during the working day. By the 3rd hour of the workday, the pulse was observed to increase by 5-10%. During lunch, the indicator was found to decrease, but did not return to baseline. During the afternoon workout, it was found that the pulse frequency increased again. By the end of the workday, there was an average increase of 18% in apparatus and sterilizers and 19% in packers [18, 25]. High levels of noise, uneven distribution and lack of lighting, changes in the functional state of the cardiovascular system as a result of the severity and intensity of the labor process cause workers performing production operations in pharmaceutical companies [32, 34].

### **CONCLUSION.**

Thus, according to the above literature, the following conclusions can be drawn:

1. There is no information in the literature on changes in the functional status of workers in the main profession in the pharmaceutical industry, the organization of the labor process, a comprehensive study of the nature of the labor process
2. The main goal of our research is to take a scientific approach to the tasks set before us, such as improving the working conditions of workers in the enterprises under study, prevention of occupational diseases and work-related fatigue, protection of human health and improving their working capacity.

**REFERENCES:**

1. Abbosov M.K., Murodov S.A. Izucheniye vozdukha rabochey zony predpriyatiya po proizvodstvu lekarstvennykh rastitel'nykh preparatov // Molodoy uchonyy. 2016; 8.6: (112.6). 2-3. (Rus.)
2. Adilov U.KH. Voprosy metodologii otsenki i upravleniya professional'nymi riskami rabotnikov, zanyatykh v neblagopriyatnykh usloviyakh truda // Universum: Meditsina i farmakologiya. 2018; 1: (46). 7. (Rus.)
3. Anosov I.S. Farmakoekonomicheskaya otsenka zatrat na modifikatsii farmakoterapii po prichine nezhelatel'nykh reaktsiy lekarstvennykh sredstv // Sovremennyye problemy nauki i obrazovaniya. 2015; 2-2: 8-12. (Rus.)
4. Bekhbutova M.D. Gigiyenicheskiye aspekty usloviy truda rabotnikov na farmatsevticheskikh proizvodstvakh // Molodoy uchonyy. 2017; 1.2: (135.2). 21-22. (Rus.)
5. Beregovykh V.V., Aladysheva ZH.I., Pyatigorskaya N.V., Meshkovskiy A.P., Svistunov A.A., Belyayev V.V. O gosudarstvennoy sisteme professional'noy podgotovki upolnomochennykh lits proizvoditeley lekarstvennykh sredstv // Remedium. 2016; 41-47. (Rus.)
6. Berezin I.I., Suchkov V.V. Sistema profilakticheskikh meropriyatiy po umen'sheniyu zagryazneniya atmosfernogo vozdukha // Izvestiya Samarskogo nauchnogo tsentra Rossiyskoy akademii nauk. 2014; 5: (5).16. 1777-1780. (Rus.)
7. Busoyedov I.A., Grebenyuk T.A. Innovatsionnyye usloviya truda // Ekonomika i biznes: teoriya i praktika. 2017; 5: 51-53 (Rus.)
8. Cherpinskaya N.A. Sanitarno-gigiyenicheskiye usloviya truda na predpriyatiyakh khimicheskoy promyshlennosti Kuzbassa (1945-1960 gg.) // Ekologiya promyshlennogo proizvodstva. 2016; 70-74. (Rus.)
9. Filina I.A., Razdorskaya I.M. Adaptatsiya farmatsevticheskikh spetsialistov v aptechnoy organizatsii // Farmatsiya. 2016; 12: (233). 159-167. (Rus.)
10. Golubeva Ye.B., Saleyev R.A. Patologicheskaya stirayemost' u rabotnikov farmatsevticheskoy promyshlennosti g.Kazani // Sovremennaya stomatologiya. 2017; 93-96. (Rus.)
11. Iskandarova G.T., Tashpulatova M.N., Samigova N.R. Vazhnost' izucheniya trudovogo protsessa i organizatsii usloviy truda v farmatsevticheskoy otrasli // Assotsiatsiya vrachey Uzbekistana: nauchno-prakticheskiy meditsinskiy zhurnal. 2020; 2: (Uzb.)
12. Iskandarova G.T., Tashpulatova M.N. Osobennosti funktsional'nogo sostoyaniya serdechno-sosudistoy sistemy sotrudnikov farmatsevticheskikh kompaniy // III Mezhdunarodnaya nauchno-prakticheskaya onlayn-konferentsiya

«Sovremennyye dostizheniya i perspektivy razvitiya zdravookhraneniya». 2021; 353-354. (Uzb.)

13. Iskandarova G.T., Tashpulatova M.N., Samigova N.R. Opredeleniye klassa usloviy truda po vedushchemu faktoru na farmatsevticheskikh predpriyatiyakh // Assotsiatsiya vrachey Uzbekistana: nauchno-prakticheskiy meditsinskiy zhurnal. 2021; 3: 133-137. (Uzb.)

14. Iskandarova G.T., Tashpulatova M.N., Samigova N.R., Kurbanova Sh.I., Sherkuzieva G.F., Yusupkhujueva A.M. // Art of medicine: international medical scientific journal. 2021; V1: I2. 141-148. (Англ.)

15. Ivanchenko A.V., Bumay O.K., Sosyukin A.Ye. Osnovnyye napravleniya nauchnykh issledovaniy po problemam meditsinskogo obespecheniya plavsostava morskogo i rechnogo flota Rossiyskoy Federatsii // Meditsina truda i promyshlennaya ekologiya. 2017; 9: 91-92. (Rus.)

16. Khashirbayeva D.M., Tashpulatova M.N. Otsenka khimicheskogo faktora v usloviyakh truda farmatsevticheskikh rabotnikov // Sbornik statey Abu Ali ibn Sino i IV Mezhdunarodnoy nauchno-prakticheskoy konferentsii po innovatsiyam v sovremennoy farmatsii. 2021; 365-366. (Uzb.)

17. Khizgiyayev V.I., Briko N.I., Kuchma V.R., Mel'nichenko P.I., Gordeyeva T.I., Volkova N.A. Standart spetsialista v oblasti mediko-profilakticheskogo dela kak osnova podgotovki i deyatelnosti v sfere meditsinskoy profilaktiki // Gigiyena i sanitariya. 2017; 4: 382-386. (Rus.)

18. Klepikov O.V., Samoylov A.S., Ushakov I.B., Popov V.I., Kurolap S.A. Kompleksnaya otsenka sostoyaniya okruzhayushchey sredy promyshlennogo goroda // Gigiyena i sanitariya. 2018; 97: (8). 686-692. (Rus.)

19. Korzovatykh ZH.M., Mishina O.I. Uchet zatrat na farmatsevticheskom predpriyatii s primeneniym progressivnoy sistemy upravleniya i kontrolya // Vestnik nauki i obrazovaniya. 2017; 5: (29). 2. 46-48. (Rus.)

20. Lobanova Ye.E. Formirovaniye effektivnosti truda rabotnikov farmatsevticheskoy promyshlennosti // Upravleniye chelovecheskimi resursami – osnova razvitiya innovatsionnoy ekonomiki: materialy IX Mezhdunarodnyy nauchno–prakticheskoy konferentsii, Krasnoyarsk. 2020; 92-99. (Rus.)

21. Pomazanov V.V., Mardanly S.G., Kiseleva V.A. Kontseptsiya farmatsevticheskoy bezopasnosti // Meditsina farmatsiya. 2020; 32-43. (Rus.)

22. Shakhina S.G., Soloninina A.V. Sravnitel'nyy analiz urovney professional'noy podgotovki i vpolnyayemykh dolzhnostnykh funktsional'nykh obyazannostey (trudovykh funktsiy) spetsialistov, imeyushchikh sredneye farmatsevticheskoye obrazovaniye // Sovremennyye problemy nauki i obrazovaniya. 2014; 5: 7. (Rus.)

23. Shobilolov O.A., Aminov S.N. Razvitiye nauchno-issledovatel'skoy raboty v Tashkentskom farmatsevticheskom institute // Farmatsevticheskiy zhurnal. 2017; 1: 82-87. (Uzb.)

24. Tashpulatova M.N. Utilizatsiya meditsinskikh otkhodov v Respublike Uzbekistan // Molodoy uchonyy. 2017; 1.2: (135.2). 42-43. (Rus.)

25. Tashpulatova M.N. Voprosy izucheniya gigiyenicheskikh osobennostey usloviy truda na sovremennykh farmatsevticheskikh predpriyatiyakh // International scientific review of the problems of natural sciences and medicine. 2019; 47-52. (Rus.)

26. Tashpulatova M.N., Dzhurayeva D.A. Nanotekhnologii – novoye napravleniye razvitiya v promyshlennosti Uzbekistana. // Molodoy uchonyy. 2016; 8.3: (112.3). 18-19. (Rus.)

27. Tashpulatova M.N. Gigiyenicheskaya otsenka proizvodstvennogo shuma na rabochikh mestakh farforovogo proizvodstva. // Molodoy uchonyy. 2016; 8.3: (112.3) 22-23. (Rus.)

28. Tashpulatova M.N. Kharakteristika osnovnykh parametrov funktsional'nogo sostoyaniya serdechno-sosudistoy sistemy rabochikh na predpriyatii po proizvodstvu farforovykh izdeliy // Fiziologiya cheloveka: materialy Vserossiyskoy zaachnoy nauchnoy konferentsii s mezhdunarodnym uchastiyem, posvyashchenoy 85-letiyu fakul'teta yestestvennonauchnogo obrazovaniya Chuvashskogo gosudarstvennogo pedagogicheskogo universiteta im. I.YA. Yakovleva. 2016; 222-223. (Rus.)

29. Tashpulatova M.N., Kodirov D.A., Okboyev A.B. Sovremennyye voprosy oksrany okruzhayushchey sredy v Uzbekistane // Yevropeyskiye issledovaniya: Mezhdunarodnaya nauchnaya konferentsiya. 2017; 320-322. (Rus.)

30. Tashpulatova M.N., Iskandarova G.T. Zakonodatel'stvo v oblasti farmatsevticheskoy promyshlennosti // Vestnik Tashkentskoy meditsinskoy akademii. 2020; 2: 215. (Uzb.)

31. Yulbarisova F.A., Tashpulatova M.N. Gigiyenicheskiye voprosy uluchsheniya usloviy truda meditsinskikh rabotnikov // Materialy konferentsii po nauchno-prakticheskim issledovaniyam v Uzbekistane. 2020; 12: 184-185. (Uzb.)

32. Zanina I.A., Bredikhina T.A. Spetsial'naya otsenka usloviy truda farmatsevticheskikh rabotnikov // Ustoychivoye razvitiye nauki i obrazovaniya. 2019; 2: 56-62. (Rus.)

33. Zhalilov A.A. Aktual'nost' izucheniya voprosov usloviy truda v sovremennoy stroyindustrii // Molodoy uchonyy. 2017; 1.2: (135.2). 22-24. (Rus.)