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# The Effect of Flour Dust on the Body of Workers

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**Resume:** The authors analyzed the main ones. Data on the effect of flour dust exposure on respiratory symptoms and additive effects of smoking and years of exposure are presented. The aim of the study was to study problems with respiratory and pulmonary function in workers of flour mills exposed to flour dust and to evaluate the effect of flour dust exposure on respiratory symptoms and additive effectiveness of smoking.

**Keywords:** grain processing, flour dust, respiratory symptoms, dustiness, labor protection.

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**Introduction:** Flour milling is a rapidly developing industry in Uzbekistan, where workers are constantly exposed to dust. Workers employed in the milling industry are at risk of developing respiratory diseases due to the high level of dust exposure. Perhaps the most unfavorable factor is the impact of which a person of labor feels it at the workplace, in the work area and at all stages of the technological process. The dustiness of the air negatively affects the respiratory system, the skin, the organs of vision, as well as the sensitization of the respiratory system, in other words, the weight of the body.

Flour dust is found in various branches of the food industry; its exposure can cause acute or chronic respiratory diseases. The term "flour dust" refers to particles obtained from finely ground grains or non-grain grains. Wheat flour contains at least 40 allergens that can cause adverse effects on the health of workers. Proteins with potential allergenic activity make up about 10-15% of the dry weight of wheat grain. The aerodynamic sizes of flour dust particles [1] vary from 4 and 30 microns. For several hours by the mucociliary system or as a result of expectoration. Massive exposure can reduce the ability of macrophages to remove particles, which can lead to the penetration of dust into the interstitium. [2,3,4,5]

Inhaled particles with an aerodynamic diameter equal to or greater than 10 microns cause eye or nose irritation. Particles ranging in size from 5 to 10.

"Flour dust" refers to dust obtained from finely ground or otherwise processed cereals. Hypersensitivity reactions [9], as well as irritation symptoms caused by flour dust, are a recognized professional problem all over the world. Most of the data on flour dust was obtained as a result of wheat studies. (*Triticum species.*) and rye (*esale flakes*), and to a lesser extent on barley (*Ordeum sp.*) and oats (*Avenue sativa*). From the point of view of hazard assessment, all these taxonomically related cereals belonging to the Poaceae family are relevant. It has been shown that the allergens contained in them cross-react [5] with each other, that Corn or corn flour (*Zea Mace*) is not included in this risk assessment, since corn flour appears to have low allergenic activity (Crippa & Pasolini, 1997; Park et al, 1998) and less cross-sensitization with flour from other cereals (Heiss et al, 1996; Baldo et al. 1980; Calveram and Fork, 1978). Other sensitizing flour dust from non-grain grains, such as soy (*Glycine hispida*) and buckwheat (*Phagopyrum esalentum*) are also excluded for taxonomic reasons. Flour dust in the baking industry may contain several other non-grain components, so-called dough improvers, such as various enzymes (for example,  $\alpha$ -amylase of various [2],[8] origin, malt enzymes, cellulase, hemicellulase, xylanase), chemical ingredients (for

example. preservatives, bleaches, antioxidants), flavorings, spices and other additives (for example. baking yeast, egg powder, sugar), as well as pollutants such as mites and microbes associated with storage (Tiikkainen et al 1996). Some of these components are sensitizers. a-Amylase is an important sensitizer, a small amount of which (from 0.1 to 1.0 mg/g of flour) is naturally present in wheat (Jauhiainen et al 1993; Burdorf et al 1994). a-amylase may have a different origin, which may be determined [7-5]

**Purpose and objective:** To evaluate the effect of flour dust exposure on respiratory symptoms and additive effects of smoking and years of exposure. The main objective of the study was to study problems with respiratory and pulmonary function in flour mill workers exposed to flour dust and to evaluate the effect of flour dust exposure on respiratory symptoms and additive smoking efficacy.

**Methods and materials.** This cross-sectional study was conducted at two flour mills in Bukhara. The samples were 95 people. The present study was conducted on the basis of a questionnaire, all participants filled out and signed a form of conscious agreement.[3-6]

**The results obtained:** in workers exposed to heavy flour dust, respiratory symptoms and chronic obstruction of the respiratory tract are observed in people exposed to dust, there is a significant violation of the respiratory parameters of lung function, such as forced cough, shortness of breath, sputum in the morning and during exercise. The degree of dust exposure to the respiratory system depends on the type and size of dust, the density and degree of dustiness of the human respiratory tract. Therefore, the efficiency of different types of dust is different in different environments. Nevertheless, the reason for the large production of wheat (more than 10 million tons per year) and the consumption of flour in sugar,[8] many farmers, elevator workers, workers of flour mills, millers, bakeries, etc. are exposed to this allergen. As for the small number of studies of respiratory diseases in workers exposed to flour in Bukhara, as well as the limitations of research. The researchers decided to study a large sample at two flour mills in Bukhara in order to characterize the effect of the allergen on workers and its effect on the parameters of pulmonary function, as well as to determine the prevalence of lung diseases. The current study population consisted of 49 (46.77%) factory owners and 51 (53.23%) mill workers. Most of them were over 39 years old at the age of 20 (32.26%), 50 (80,65%) men and 12 (19.35%) women. Among the studied population, 55 (88.71%) were smokers and 43 (69.35%) worked in mills for more than 10 years. Our survey showed that none of them used any means of protection against flour dust. In the main group, 60 (96.77%) suffered from prolonged dry cough, and 22 (35.48%) complained of periodic shortness of breath. The table data showed that 51.12 percent of respondents belonged to the age group from 20 to 40 years, at that time. In addition, 60 percent of respondents had an average family size, 40 percent of respondents had a small family. In addition, 60 percent of respondents had an average family size, 40 percent of respondents had a small family.

age	Number interviewed	Dry cough%	Shortness of breath%	Sputum secretion%	Eye irritation%	does not use SLZ. %
20-39	37	34	47	-	19	87
40-49	42	25	45	12	18	96
50-59	19			17	21	98
More than 60	7	35	27	21	17	98
total	95	30,7	39,1	16,0	18,2	95

**Conclusion:** Prolonged exposure to flour mill dust causes various respiratory diseases in flour mill workers. Personal protective equipment (PPE) helps protect workers' health from

unsafe conditions in the workplace environment. In the course of this study, it was noted that personal protective equipment was not available, and is not used by any employee of the flour mill when performing their work. Therefore, for flour mill workers, when they perform their work at the workplace, this study is recommended to be undertaken in order to understand the impact of flour dust on health. From the above study, it can be concluded that the workers of the flour mill faced various health problems at work due to the presence of flour dust at work. None of the respondents used personal protective equipment to protect themselves. It is necessary to make awareness among the workers of flour mills regarding their health problems and benefits, as well as the use of personal protective equipment, equipment to protect themselves.

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