



DUST AS AN ENVIRONMENTAL FACTOR

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Abstract:

In the modern world, human health is increasingly influenced by various properties and qualities of environmental factors. About 85% of all diseases in the modern world are associated with unfavorable environmental conditions caused by everyday human production activities. Today, new unstudied diseases are appearing in the world, the causes of which cannot be established. This article provides information on the effect of dust in atmospheric air on human health, types and sizes of dust in industry and production, and the effect of dust on the upper respiratory tract.

Keywords: mineral dust, metal dust, hazardous dust, vegetable dust.

INTRODUCTION. Dust is very small particles of various substances that fly freely in the air and settle on the surface. When these particles get into the respiratory tract, a person may sneeze, as our body will try to get rid of foreign objects in any way. There are the following types of dust:

- Mineral dust: cement dust, inhaled crystalline silica, coal dust.
- Metal dust: lead, nickel, cadmium and beryllium dust.
- Biologically hazardous dust: spores, mold.
- Organic and vegetable dust: flour, sugar, cotton, tobacco, tea, wood, wool.
- Dust from chemicals and pesticides.

Particle sizes may vary depending on the type of dust. More than half of the dust present in our homes is dirt from shoes and clothes, pollen, pollutants, skin particles, insulation. The other components of house dust are: animal hair, hair, insect particles, fluff, villi, dust mites and their excrement. Ordinary household dust is a complex mixture of the smallest particles of different origin, the diameter of which ranges from a few fractions of a micron to 0.05 mm (50 microns). The composition of this mixture includes mainly the following components:

- Mineral particles – small fragments of building materials falling off the walls and from the ceiling can make up to 35% of the dust composition. It is because of them that the dust eventually settles even in tightly closed rooms that no one uses.
- Dead human skin cells – this component can make up to 20% of the dust composition. If there are pets in your home, then there will be even more dust due to their skin and microparticles of wool.
- Microfibrils of textiles and microparticles of paper – this component of dust is formed as clothes and home textiles wear out, as well as due to the presence of

books and other paper products in the house. In total, such particles can make up to 12% of the total dust composition.

- Pollen of flowers – in spring, summer and early autumn in ventilated and simply leaky rooms, this component can make up to 7% of the total composition of household dust.
- Smoke and soot particles – if you are cooking, solid combustion products will make up up to 3% of the dust composition in your house.
- Up to 24% of the dust can be occupied by particles of unknown origin, which are commonly called cosmic dust. It is assumed that these particles have an unearthly origin and enter the atmosphere during the combustion of meteorites or when the Earth passes through clouds of interplanetary dust.

GOAL. Dust is not only ugly. It is also very harmful to health. Dust contains a lot of toxins and heavy metals, and by inhaling household dust, we constantly maintain a state of intoxication. For healthy, full-bodied adults, this may be uncritical, but it sometimes harms the elderly. What can we say about small children who not only inhale dust, but also often "taste" the surrounding objects? The consequences of such curiosity are the most unpleasant: poisoning, infection with parasites and infectious diseases. How does dust affect health?

MATERIALS AND METHODS OF RESEARCH. House dust consists of several components, among which there are both safe and dangerous substances for our body.

Usually dust particles fly in the air and their behavior directly depends on the size. Large particles quickly settle on the surface, they are easy to exhale, they do not cause much harm to the body. The most dangerous are very small particles (less than 2.5 microns in size) that hang in the air for a long time. Such particles do



not leave their lungs at all with the current of exhaled air, and sometimes they can even enter the bloodstream. The danger of dust also directly depends on the duration of its effect on the body. Ingestion of small dust particles can cause sneezing, coughing and asthma attacks, allergies, as well as irritation of the mucous membranes. In people suffering from chronic lung diseases, bronchial asthma or allergies, even a small amount of dust can cause exacerbation and dangerous symptoms. Large amounts of dust, regardless of its composition, provoke irritation of the mucous membranes on which they settle. This leads to sneezing, coughing, tearfulness and sometimes even to the development of localized inflammatory processes. With normal breathing, dust particles larger than 10 microns are almost completely trapped in the upper respiratory tract and do not reach the lung tissue. Finer dust is easily carried into the lungs and gets into the alveoli (bubbles, 200 microns in diameter). In the alveoli, non-toxic dust particles ranging in size from 2.5 microns (the maximum is 1 microns) are captured and neutralized by phagocyte cells, subsequently being removed with sputum. By the way, in an ordinary apartment, about 12 thousand dust particles settle on 1 square centimeter of the floor in two weeks.

Toxic dust particles damage the lung tissue and spread throughout the body as a whole. However, the most common harm of household dust is allergies. The most optimistic statistics say that every tenth inhabitant of the Earth is allergic to dust. But some believe that about 40% of people suffer from it. And this seems to be true, because often even the patients themselves do not suspect that the cause of their malaise is ordinary household dust. Often the symptoms of allergy to dust are confused with a cold. There really is something in common — this disease is manifested by a chronic runny nose, sore throat, sneezing, inflammation of the mucous membranes, dry cough and redness of the eyes. Allergic dermatitis is also not uncommon, when the skin becomes very dry, irritated and sensitive, itching or characteristic blisters occur — the so-called urticaria. If you breathe dust from day to day, then diseases of the respiratory system are inevitable: chronic diseases of the nasal cavity, pharynx, bronchi, lungs, allergic reactions. And also often there are inflammatory processes, headaches, irritation of the mucous membranes of the eyes. The constant presence of dust with a cumulative effect can cause allergies even in an absolutely healthy person, the amount of man-made pollutants is extremely large. Some of them have been identified and systematized. According to the recommendation of the World Health Organization, the following permissible concentrations are established: for particles of 10 microns and less — 0.05 mg/m³; for particles of 2.5 microns and less — 0.085-0.01 mg/m³. The effects of dust on the body. Among the materials

whose dust is most dangerous to humans, condensed and oxidized metal vapors occupy a special place. The spectrum of their harmful effects is wide — it is the defeat of systemic organs (including reproductive), hematopoietic organs. There are practically no non-toxic metal aerosols. Most metal aerosols damage the mechanism of dust removal of the human respiratory tract, depriving it of protection from dust.

CONCLUSIONS: Unfortunately, medicine is not yet able to help a person completely get rid of allergies once and for all, but the use of certain pharmacological drugs and preventive measures allows you to minimize the manifestations of this unpleasant and dangerous disease with its complications. The tactics of its treatment is determined individually and depends on the degree of manifestation of an allergic reaction. If you find yourself with even one of the above symptoms and its appearance is always associated with contact with dust, then you need to consult an allergist. Remember that self-treatment of allergies will not give an effective result, and the progression of the disease can lead to the development of such complications of allergy to dust as Quincke's edema or bronchial asthma. To identify and clarify the allergen, the patient will need to undergo a series of diagnostic examinations:

- skin tests;
- study of specific IgE antibodies;
- provocative tests; elimination tests;
- computer diagnostics using the Voll method.

CONCLUSION: How can I limit contact with dust as much as possible? To do this, you need:

Reduce the number of places where dust accumulates. It is necessary to completely revise the interior of your home and try to reduce the number of textiles that easily accumulate dust: remove carpets, replace curtains with easily cleaned blinds, replace furniture with fabric upholstery with leather, reduce the number of decorative items that accumulate dust, remove books, souvenirs, soft toys in glazed cabinets, replace heavy fabric covers with easily erasable. When choosing soft toys, give preference to those products that are easy to wash and dry.

- Replace bedding (mattresses, blankets, pillows, blankets, etc.) with products that are easy to clean or wash and made of smooth fabric. It is not recommended to use products made of fleece, flannel, wool or down. It is better to replace feather pillows with products with synthetic fillers and change them 2-3 times a year. All new bedding should be regularly washed, vacuumed or shaken out. The mattress should be thoroughly vacuumed daily and put on it a special dust cover made of thick fabric and covering it from all sides. Replace the mattress with a new one every 8-10 years — it is better to choose products with



coconut filler or fillers that can be processed by non-chemical methods. Blankets, pillows and sheets must be shaken out and ventilated at least twice a week. It is necessary to wash bed linen at least 2 times a week, using hot water (above 65 ° C) and detergents with special additives that can destroy dust mites.

- If it is impossible to completely get rid of upholstered furniture or carpets, their cleaning should be carried out with the help of special means based on plant components, tannins, borates and benzyl benzoates (for example, Acarosan). These furniture cleaning products allow you to denature epidermal or tick allergens and reduce their effect on the human body to a minimum.

- Thorough and regular cleaning of the premises. It is better to clean the premises at a time when there is no allergy in the house. If it is impossible to fulfill this condition, an allergy sufferer should wear a mask that will protect the mucous membranes of the respiratory tract and eyes from dust ingress. When using cleaning vacuum cleaners, special acaricidal (affecting dust mites) and anti-allergenic additives should be used. The floor should be washed regularly, and dust from various surfaces should be wiped with a damp cloth.

- Use air purifiers, air conditioners with an additional humidification system and ionizers for additional purification of the air from dust allergens. The optimal humidity level in the room should be at least 40-60%. Filters in devices must be systematically replaced with new ones

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8. METHODS AND ISSUES IN NOSOLOGICAL ANALYSIS OF MORTALITY DURING THE COVID-19 PANDEMIC Submission Date: February 10, 2022, Accepted Date: February 20, 2022, Published Date: February 28, 2022 Crossref doi: <https://doi.org/10.37547/medical-fmospj-02-02-08> Honbuvi Khakimovna Khakimova Senior Lecturer, Department of Public Health and Health Care Management Samarkand State