

EFFECTS OF ATMOSPHERIC POLLUTION ON CHILDREN'S HEALTH

Salomova F. I.

Sadullaeva Kha.

Sadirova M. K.

Tashkent Medical Academy Tashkent, Uzbekistan

Abstract

Atmospheric pollution is a major global problem with serious toxicological effects on human health and the environment. Vehicles and industrial processes are the major sources of air pollution. According to the World Health Organization, the six main air pollutants include ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, lead, and heavy and radioactive elements. Long-term and short-term exposure to toxic substances in the air has a variety of toxicological effects on humans, including respiratory and cardiovascular diseases, neuropsychiatric complications, eye diseases, skin diseases, and long-term chronic diseases such as cancer. Air pollution is a major environmental risk factor in the occurrence and development of certain diseases such as asthma, lung cancer, ventricular hypertrophy, Alzheimer's and Parkinson's diseases, psychological complications, autism, retinopathy, fetal growth and low birth weight.

Keywords: Air pollution, atmospheric air, children's health, ecological and hygienic conditions, risk factors.

Introduction

The purpose of the study: ecological-hygienic condition of atmospheric air and impact on children's health to analyze what has been learned.

Air pollution is generally defined as the contamination of indoor and outdoor air with any chemical, physical, or biological substance that is harmful to human health and the environment. According to the World Health Organization (WHO), 99% of the world's population lives in areas where WHO air quality guidelines are exceeded [1,15].

The sources of air pollution are diverse and can be broadly divided into household air pollution and ambient air pollution.

The composition of atmospheric air almost always contains various foreign substances in the form of solid particles (dust), gases and vapors. Dust is mainly released into the air by burning coal, and its quantity mainly depends on its quality. Each power station, for example, burns about 1,000 tons of coal per day and emits about 240 tons of ash per day. As a result, 1,500-2,000 tons of dust fall per 1 sq. km per year in industrially developed cities. Waste from industrial enterprises is abundant and has a variable composition [2,13,17].

Particulate matter is a major component of air pollution. In simple terms, it is a mixture of particles found in the air. Pollution with particulate matter, commonly referred to as PM, is associated with lung and heart disease [5, 6]. Their size ranges mainly from 2.5 to 10 μm (PM 2.5 to PM 10).





Air pollution is a leading risk factor for a variety of cardiovascular and respiratory diseases globally for children and adults. Children are at high risk for outcomes such as acute respiratory infections, asthma, and decreased lung function due to exposure to air pollution; the risk varies across geographic regions depending on the source of air pollution, duration of exposure, and concentration. Prenatal exposure to air pollution can also lead to adverse respiratory outcomes later in life.

Poor air quality has been shown to have negative effects on children's health, including lung growth and the development of lower respiratory tract diseases, including pneumonia. Children in developing countries are at higher risk than those in developed countries. Air pollutants are thought to weaken children's immunity to respiratory pathogens.

Air pollution is a risk factor for heart disease, stroke, lower respiratory tract infections, lung cancer, diabetes, and many other diseases, leading to an estimated 7 million premature deaths each year [2,18,20].

The amount of particulate matter pollution is directly related to the onset and progression of lung and heart disease. Smaller particles lower reaches the respiratory tract and can therefore cause lung and heart disease. In addition, a large body of scientific data has shown that fine particulate matter pollutants cause premature death in people with heart and lung diseases, including heart rhythm disorders, non-fatal heart attacks, exacerbation of asthma, and decreased lung function. Depending on the level of exposure, particulate matter pollutants can cause mild to severe illness. Wheezing, coughing, and activity limitation due to breathing problems are the most common clinical signs of respiratory diseases caused by air pollution [6,7,8].

More than 40% of the world's population, including 1 billion children under the age of 15, is exposed to indoor air pollution. Nearly 93% of the world's children under the age of 15 (1.8 billion children) breathe polluted air, negatively impacting their health throughout their developing lives. Long-term exposure to ambient PM concentrations can lead to a significant reduction in life expectancy. Increased mortality from cardiopulmonary and lung cancer are the main causes of reduced life expectancy. Decreased lung function in children and adults, asthmatic bronchitis, and chronic obstructive pulmonary disease are also serious diseases that reduce quality of life and shorten life expectancy [8,9,10,20].

Conclusion:

Thus, taking into account all of the above, the main causes of environmental problems are the long-term extensive development of the national economy, the failure to implement environmental protection measures, the absence or lack of environmental protection equipment at enterprises, and the inappropriate use of natural resources in the area. In the protection of atmospheric air, a sanitary doctor is assigned several tasks. To fulfill them, it is necessary to carry out such tasks as sanitary-technical, sanitary-topographical and sanitary-epidemiological examination of pollution sources in the given population area.





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