

# The Impacts of Climate Change and Air Pollution on Respiratory Allergies

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## EDITORIAL

A growing amount of research demonstrates that large changes in the atmosphere and climate, notably anthropogenic-caused global warming, have an influence on the biosphere and human environment. Epidemiological and experimental investigations on the association between allergic respiratory illnesses, asthma, and environmental factors such as climatic variables, airborne allergens, and air pollution provide current understanding on the effects of climate change on respiratory allergy. The increased prevalence of respiratory allergy disorders and bronchial asthma in most industrialised countries has been connected to urbanisation, with its high levels of automobile emissions, and a westernised lifestyle. However, assessing the effects of climate change and air pollution on asthma prevalence in the general population and the timing of asthma exacerbations is difficult, despite the fact that the global rise in asthma prevalence and severity could also be attributed to air pollution and climate change. Because airborne allergens and pollutants are frequently increased in the atmosphere at the same time, an enhanced IgE-mediated response to aeroallergens and increased airway inflammation could explain the rise in the incidence of respiratory allergy and asthma in atopic people over the last five decades. The link between air pollution and respiratory allergic disorders including rhinitis and bronchial asthma is extensively studied using pollen allergy.

Air quality has become a major concern in many industrialised countries, as well as a rising problem for the rest of the world, as a result of the large rise in emissions of air pollutants caused by economic and industrial progress during the last century. Increased levels of greenhouse gases, particularly CO<sub>2</sub>, in the atmosphere have

already significantly warmed the world, resulting in more severe and protracted heat waves, temperature unpredictability, air pollution, forest fires, droughts, and floods, all of which endanger respiratory health. Changes in climate and air quality have a demonstrable impact on respiratory illness morbidity and mortality. The increase in greenhouse gas emissions has resulted in a significant rise in global earth temperature during the previous five decades. Climate change and public health concerns are among the repercussions of anthropogenic-derived greenhouse gas emissions.

"Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely attributable to the observed increase in anthropogenic greenhouse gas concentrations," according to the Intergovernmental Panel on Climate Change's Working Group I Report. Changes in precipitation amount, intensity, frequency, and type are also occurring, as are increases in severe events such as heat waves, droughts, floods, thunderstorms, and hurricanes, which are all serious and frightening challenges. After a session co-organized by the HENVINET Project and the American Thoracic Society, the European Respiratory Society (ERS) has issued a position statement on climate change and health impacts. The position statement highlights climate-related health impacts such as heat-related deaths and acute morbidity; increased frequency of acute cardio-respiratory events due to higher ground-level ozone concentrations; changes in the frequency of respiratory diseases due to trans boundary particle pollution; and altered spatial and temporal distribution of allergens (pollens, moulds, and other allergens) due to trans boundary particle pollution. These effects, according to the paper, will not only harm people who already have respiratory disease, but will also likely increase the incidence and prevalence of respiratory diseases.

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