ELSEVIER
SAUNDERS

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Preface

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The morbidity and mortality from asthma have increased greatly during the past few decades in the United States and most developed countries. Although recent developments in genetics have provided exciting breakthroughs in airway disease, genetic factors, by themselves, cannot explain the dramatic increases in asthma prevalence and severity. Dramatic changes in the environment have occurred concurrently with the asthma epidemic, raising the possibility that environmental factors may be responsible for the increased burden of asthma. Indeed, the alterations of the indoor and outdoor environment are dramatic features of the twentieth and twenty-first centuries. Changes in diet, body composition, and workplace conditions have also occurred. In this issue of the *Immunology and Allergy Clinics of North America*, we review recent epidemiologic studies that implicate the environment as a cause of asthma and its exacerbation.

The term ''environment'' is broad and all encompassing. Indeed, it reflects all that is external to the human organism. For many, the term ''environment'' connotes the outdoor environment and its pollution by traffic, other sources of combustion, and industrial contamination. But for most residents of industrialized countries, the majority of time, in excess of 90%, is spent indoors. Consequently, the indoor environment, which includes homes, schools, workplaces, and other public places, becomes especially important. Although it is true that the outdoor (ambient) environment greatly influences the indoor one by entrainment of air and other substances, there are unique point sources of pollution, allergen exposure, and viral infection indoors. And finally, the social environment, which

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reflects the broader context of our lives, may have important influences on asthma.

Randomized controlled trials have become the gold standard for addressing many problems in clinical medicine and health. But such trials are not suited to studying most of the effects of environmental exposures on health. Although short-term exposure studies are conducted in highly controlled environments, they provide limited insight into the development of chronic diseases such as asthma, which have a long induction period (ie, develop over a long period of time). Ethical and logistic concerns preclude randomizing human subjects to potentially hazardous exposures over a longer time period. Therefore, epidemiologic methods are the best ones for assessing the impact of environmental exposures on health outcomes, such as asthma and other respiratory diseases.

In this issue, we review the evidence that exposures to indoor pollution (passive smoking, indoor combustion), other indoor exposures (allergens, viral infections, occupational exposures, dampness, mold), and outdoor pollution (traffic, other ambient pollution) are important factors for the development and clinical course of asthma. The issue also considers the social environment and how it influences asthma status. The impact of diet and obesity, which have changed markedly during the past several decades, may also contribute substantively to the asthma epidemic. And living on a farm, with exposure to microbes and allergens, has fascinating, and sometimes counterintuitive, effects on asthma induction and course. Finally, an article on asthma and the inner city integrates the issues of pollutant and allergen exposure that often occur concurrently in the urban environment.

Ultimately, the goal of epidemiology and public health is prevention—in this case, prevention of asthma incidence and exacerbation. This issue elucidates the impact of the environment, defined broadly, on asthma with the goal of highlighting possible areas in which exposure prevention or remediation might decrease the burden of asthma.

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