

## Preface

Allergies are among the most common and economically important diseases in both Europe and the United States. They have a special impact because they so frequently affect children, adolescents, and young adults actively involved in school or work. Thus it is essential that a broad spectrum of medical care providers be familiar with the principles of allergic disease.

The term *allergy* was first coined by the pediatrician Clemens von Pirquet at the beginning of the twentieth century. It has won an established place in the medical literature. The branch of medicine that deals with allergic diseases is known as allergology in Europe, and less accurately, as allergy in United States. In simplest terms, this field deals with the diagnosis and treatment of undesirable, usually excessive, immune reactions to environmental products. Some of the important immunological concepts that have helped form our current concept of allergic disease include the description of immediate and delayed hypersensitivity, the role of immunoglobulin (Ig) E in immediate reactions, the concept of atopy and atopic disease, the production of immunoglobulins by B cells, the interaction of antigen-presenting cells and T cells to produce several different immune responses, and the complex regulatory loops driven by lymphokines, chemokines, and other mediators.

Many of these advances are already familiar to every reader, as their originators have been rewarded with Nobel prizes. Today the thrust of most clinical and laboratory research is for better understanding of the complex regulatory processes that control immune reactions and that can be misdirected to produce allergic diseases.

There is no shortage of literature on allergic diseases. There are superb introductory and advanced textbooks of immunology; some emphasize basic science findings, others concentrate on clinical aspects. In addition, there are innumerable clinical and basic journals documenting the explosion of knowledge in this area over the past few decades.

Our goal has been to produce something slightly different—a simple, clear, very current view of clinical allergy and immunology that will be useful not only to medical students and practicing physicians but also to motivated 'lay' readers. We have attempted to provide a brief but solid theoretical background while at the same offering precise direct advice on clinical issues.

The responsibility for treating patients with allergic diseases is distributed differently in Europe and the United States. In many European countries, including Germany, most allergists are either

dermatologists or otorhinolaryngologists, reflecting the backgrounds of the two German authors (M.R., G.G.). In the United States, most allergists are either internists or pediatricians. Independently of the specialty of the practitioner, extensive additional training in both allergy and immunology is required before one can become an allergy specialist.

The Pocket Atlas format developed so successfully by Thieme Verlag is an ideal method for transferring this information. The combination of a very brief text with the clever and didactically proven graphics seemed irresistible to us, and we hope our readers will be similarly pleased. All of the crucial information in the book is presented twice—once in text format and again in a more compact, easier to remember graphic form. Drawings and pictures, especially ones so skillfully created, convey complex interactions, such as those dominating immunology and allergy today, much more effectively than do lengthy descriptions. In addition, the requirements of the graphic artist forced us to simplify and, we hope, make more understandable a number of complex areas.

The biggest thank you for this English version goes of course to the creative illustrator, Professor Jürgen Wirth, whose illustrations serve as the backbone of this effort. We would also like to thank our German colleagues listed on the next page who helped with various sections of the German book. Their work has for the most part been incorporated into this English text, although many areas have been updated and reworked. Stephanie Engelhardt was the professional editor of the German version and without her contributions this English book would also not have been as instructive and well-structured. The clinical pictures of skin disorders are from the Department of Dermatology, Ludwig Maximilian University, Munich, Germany, where two of us (M.R., W.B.) worked together. We thank the chairman, Gerd Plewig MD, and the chief photographer, Peter Bilek, for their generous assistance.

We would also like to thank Dr. Clifford Bergman and Thieme Verlag for enthusiastically backing this new English edition. We hope we have lived up to their expectations and, most importantly, produced a book that you, the reader, will both enjoy and find useful.

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## Introduction

The *Pocket Atlas of Allergy* has the goal of presenting the pathophysiology, clinical features, and therapy of allergic diseases in a compact and understandable fashion. The book should be useful not only for medical students and practicing physicians but also for colleagues in the basic sciences and even lay persons. The Pocket Atlas format of Thieme Verlag is ideal for this purpose, as the modern techniques of graphic design employed in this series are ideal for conveying complex interactions in simplified manner. The book has been carefully updated to reflect current knowledge in immunology and allergology. Many aspects of the pathogenesis, clinical features, and therapy of allergic diseases are controversial. It is impossible to discuss these complex issues completely in an introductory book of limited length. Thus, established ideas have been presented with a centrist viewpoint, hoping to provide readers with such a solid background that they can then tackle and assess complex or speculative topics on their own in an informed manner. The book is divided into five sections.

**Section I** provides an introduction to the immunological basis of allergic diseases. The most important terms are defined for use throughout the book and the epidemiology of allergic diseases, reflecting the alarming increase in recent years, is outlined. The molecular and cellular bases of immune protection are explored in some detail. Both intrinsic mechanisms and the better-known acquired mechanisms featuring the production of antibodies and the many aspects of a cell-mediated immune response are discussed.

**Section II** provides a multidisciplinary approach to the diagnosis of allergic diseases, incorporating the expertise of dermatologists, otorhinolaryngologists, ophthalmologists, internists, pediatricians, and occupational medicine specialists. The relevant history and physical examination for each of these organ systems are outlined. In addition, the various methods of *in vivo* and *in vitro* allergy diagnosis are summarized.

**Section III** presents an overview of the treatment of allergic diseases. Specific immunotherapy including hyposensitization is covered, as well as medical treatment with antihistamines, corticosteroids, and other agents. Prophylaxis or allergen avoidance is also outlined, as are dietary measures, climate therapy, and skin care.

**Section IV** covers the various allergic diseases, once again from a multidisciplinary perspective. The pathophysiology, diagnosis, clinical findings, and therapy are concisely presented. The first part of the section concerns itself with allergic emergencies and their management, after which allergies affecting the skin, ears, nose, throat, lungs, eyes, and gastrointestinal tract are covered. In addition, pediatric aspects are explored, along with psychosomatic disease, environmental issues, and immunizations.

**Section V** is the appendix, containing more detailed information on a variety of topics that are simply too long for the format of the text. Extensive information is included on emergency management, patch testing, and medications.