

Middleton's Allergy: Principles and Practice, 6th edition, 2 volumes. N Franklin Adkinson Jr MD, John W Yunginger MD, William W Busse MD, Bruce S Bochner MD, Stephen T Holgate MD DSc, and F Estelle R Simons MD. Philadelphia: Mosby/Elsevier. 2003. Hard cover, illustrated, 1,764 pages, with indexes and CD ROM, \$275.

Middleton's Allergy: Principles and Practice is considered the "bible" of the discipline. It is the most complete magnum opus in the field. Its list of authors is a "who's who" of allergy and immunology, with 165 contributors from 8 countries. Ninety-four chapters are contained in 2 volumes, with a total of 1,764 pages. In the 6th edition there are 10 new chapters and new authors in 40 of the 94 chapters, injecting "new blood" and reflecting the great recent increase in knowledge about allergy and immunology. Volume 1 is dedicated to the basic sciences and Volume 2 to the clinical aspects.

I will begin my review with a disclaimer. Although in preparation for my allergy boards in 1985 I read an earlier edition from cover to cover, I did not read all the pages of this updated tome. Of the 94 chapters I read only a few completely. However, I did use the book the way most of us use reference books. For example, I read several of the chapters for background on certain topics in preparation for talks on related subjects. I also spot-read certain sections regarding some of my patients' health problems. In preparation for depositions as an expert witness, I reviewed certain parts of the book and also used it as an authoritative text for a legal basis. Some of the tables and figures I have adapted for presentations. For all of these typical uses the book works very well.

The following is a brief perambulation through the text, to illustrate its broad and comprehensive coverage. Volume 1 starts with a succinct, well-written summary of the immune system that presupposes at least a college-level background in immunology and sets the stage for the rest of the volume. The second chapter outlines molecular biology and genetic engineering, including specifics on the newly burgeoning fields of genomics and proteomics. Basic genetics is discussed, followed by more specific infor-

mation on the genetics of allergens and asthma. Immunoglobulin structure and function is detailed, followed by an in-depth discussion of the complement system, which now involves more than 30 proteins. Because of its central role in immediate hypersensitivity, a whole chapter is devoted to the synthesis and regulation of immunoglobulin. Cellular adhesion and the molecules involved in the process of recruiting cells are outlined, including the structure, function, and biochemical characteristics of those molecules. The confusing role of cytokines in the immune response is addressed, followed by a cutting-edge discussion on chemokines, the chemotactic cytokines.

Chapter 12 discusses antigen presentation, including the role of antigen presenting cells and the function of T cells. The following chapters discuss the role of mediators in cell physiology, including mast cell, lipid, and the neurogenic inflammatory mediators. A discussion on white cell physiology follows, including sections on mast cells, basophils, lymphocytes, neutrophils, eosinophils, monocytes, and macrophages. The role of the respiratory epithelial cells and vascular endothelium in the immune response is examined, followed by the biology of airway smooth muscle cells. Chapter 26 summarizes the role of apoptosis (programmed cell death) in the inflammatory response and discusses the death signaling pathways. The basics of cellular immunity are expounded upon, including more on antigen presenting cell function, antigen recognition, the role of the histocompatibility complex expression, and the emergence of cytotoxic T cells, Type I and Type II T-helper cells, and T-suppressor cells and their complex interactive role in the immune response. The numerous cytokines that play a role in the recognition, proliferation, and communication between various cells in the immune response are also covered. With this extensive background on the basics of immunology, the following chapter summarizes allergic inflammation, including the interaction of T-helper cell function and the generation of specific immunoglobulin. The multiplicity of cells involved in the allergic response, as well as the mediators and cell surface receptors involved in the allergic response are examined. The brief chapter

on animal models of asthma illustrates new techniques, including transgenic methodology, gene knockout models, and monoclonal antibody intervention to dissect biologic functions. A plethora of known and potential mediators have been examined in asthma animal experiments.

There is then a summary chapter on the pathophysiology of allergic inflammation, followed by specifics on allergic airway disease. After 514 pages of basic immunology, Section B examines aerobiology and the clinical diagnosis of allergy. It begins with a chapter on air pollution, both outdoors and indoors, followed by an examination of allergens and a discussion of sampling methods. Briefly summarized are the major pollen allergens in the various regions of North America, as well as fungal aeroallergens. Indoor allergens, including dust mites, cockroaches, and animal danders, are explored in detail, as are avoidance measures. The preparation and standardization of allergen extracts are reviewed, followed by a section on the physicochemical and biochemical characteristics of various aeroallergens. In a similar fashion the biology of food allergens is examined. Discussion of the role of laboratory testing for allergic and immunodeficiency diseases follows, then skin testing for the diagnosis of allergies, as well as the pitfalls involved in that technique. Nasal provocation testing and bronchial challenge testing are each given their own chapter.

Chapter 41 begins a new section on physiology, starting with cutaneous immunology, followed by immunologic and nonimmunologic lung defense mechanisms, which examines both normal mechanisms and disease. Airway smooth muscle and the extracellular matrix in normal and diseased lung are also examined. Normal lung development, structure, and physiology are addressed and compared to asthmatic pathophysiology. Airway mucus and its constituents are explored, as well as the role of mucus in asthma. In preparation for the sections on the treatment of asthma is a discussion of aerosols and the delivery systems of drugs that treat airway disease. The anatomy and physiology of the nose and nasal airflow are outlined to pave the way for the subsequent discussion of rhinitic syndromes.

Section D in Volume 1 covers the pharmacology of allergic and respiratory disease, starting with the principles of pharmacotherapeutics, followed by chapters on specific drugs, including β -adrenergic agonists, theophyllines, antihistamines, glucocorticoids, the chromones, antileukotriene, and anti-cholinergic agents. The last chapter in Volume 1 discusses the newer immunomodulating therapeutic agents.

Volume II, Section E, is entirely devoted to the clinical practice of allergy diagnosis and treatment. It starts with the clinical evaluation of cell-mediated immunity, including delayed type hypersensitivity, the role of cell-mediated immunity in autoimmunity, as well as "altered cell-mediated immunity" in gastrointestinal disease (eg, Crohn disease) and endocrine disorders (eg, diabetes). Immune complex diseases and laboratory findings of these syndromes are also examined. The chapter on the primary immunodeficiency diseases reviews the more than one hundred that have been described thus far, and for most the molecular abnormality is described. Clinical evaluation of recurrent infections is outlined, followed by a succinct chapter on human immunodeficiency virus. The role of immunoglobulin in allergic and nonallergic syndromes is discussed, as are eosinophil-related disorders, including allergies, infections, neoplastic disorders, immunologic reactions, and diseases with eosinophil-specific organ involvement. The epidemiology of asthma and allergic disease is followed by a section on the natural history, development, and prevention of allergic disease in childhood. Asthma pathogenesis is examined in the context of genetic, environmental, and immunologic factors. Asthma pathophysiology is then compared to that of chronic obstructive pulmonary disease. The following chapters discuss the differences and similarities in the presentation and management of asthma in infants, children, and adults, and in pregnancy, with emphasis on recent asthma treatment guidelines. A chapter is dedicated to exercise-induced asthma and another to occupational asthma. Allergic bronchopulmonary aspergillosis and hypersensitivity pneumonitis have their own chapters.

Chapter 76 covers rhinitis, including a detailed discussion of the pathophysiology of allergic rhinitis and a brief discussion of nonallergic rhinitis syndromes. There are also chapters on nasal polyps and the role of fiberoptic endoscopy in the evaluation of

the upper airway. Otitis media is discussed, with emphasis on its association with allergies. Immunotherapy and its physiologic effects are outlined in Chapter 80.

A chapter on diagnosis and treatment of stinging-insect allergy follows, which includes a discussion of immunotherapy for bee stings and the question of when to stop. Natural latex allergy, anaphylaxis and anaphylactoid reactions, and mastocytosis each have their own chapters. Urticaria and angioedema are then covered, with the increasing evidence of an autoimmune role in idiopathic urticaria. This is followed by an examination of atopic dermatitis and the difficulties of managing it. The following sections give an update on the pathogenesis of contact dermatitis (with emphasis on the role of cytokines, T cells, and adhesion molecules) and the diagnosis and treatment of ocular allergies and other immunologic eye diseases.

Food allergies are thoroughly detailed, including the cross-reactivity of food allergens and pollens based on molecular similarities. Food intolerances and the recognized role of non-immunoglobulin E-mediated food hypersensitivity are also covered. The following chapter outlines adverse reactions to food and drug additives and food and drug allergy challenge methods. Adverse reactions to vaccines are addressed, and the authors make it clear that most such adverse reactions are trivial and that the risks from vaccines are generally much less than from the diseases the vaccines prevent. A general overview of drug allergies is presented, including the mechanisms of hypersensitivity. There are chapters on reactions to aspirin and nonsteroidal anti-inflammatories. Last, but not least, is an examination of unconventional theories and unproved methods in allergy, including "environmental illness," "Candida hypersensitivity," and other debunked diagnoses. Unproven diagnostic tests and unproven treatments are also analyzed. Unfortunately "toxic molds," a current controversial diagnosis is not discussed.

If that is not enough to impress the most skeptical Missourian... did I mention the 18,715 references? The obvious question is, who needs this much information? As noted in the book's preface, it is "the most widely owned and referenced authoritative textbook for the discipline of allergy and immunology." Every "self-respecting" allergist or allergy investigator owns a copy. Pulmonary specialists with an interest in immunology

or the upper airway would benefit from access to the book. Respiratory therapists and nurses who are well-grounded in immunology and with intense interest in the field may want it as a reference, but it is not cheap at \$275.

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The Immunological Basis of Asthma. Bart N Lambrecht MD PhD, Henk C Hoogsteden MD PhD, Zuzana Diamant MD PhD, editors. (Lung Biology in Health and Disease series, Volume 172, Claude Lenfant, executive editor.) New York: Marcel Dekker. 2003. Hard cover, illustrated, 800 pages, \$195.

The Immunological Basis of Asthma is a recent volume in the well known "Lung Biology in Health and Disease" series. It is comprehensive (800 pages, 53 authors) and well organized into 4 sections: "The Cells of the Pulmonary Immune Response," "Regulatory Processes in the Pulmonary Immune Response," "Integrated Immunology of Airway Inflammation," and "Immunologic Aspects of Current Asthma Therapy." The primary audience for this book is physicians, especially allergists and pulmonologists interested in respiratory immunology. Only one of the 24 chapters discusses current medications used in asthma therapy, and that chapter focuses primarily on the molecular mechanisms of corticosteroid action—not practical therapeutic information. Most nurses and respiratory therapists are likely to find this book too tangential to their interests. That notwithstanding, the book is well written, well organized, and contains a wealth of information about the immunological mechanisms of asthma.

The first 7 chapters are grouped under the heading "The Cells of the Pulmonary Immune Response" and discuss host defense mechanisms of the lung. There are relatively brief sections on innate immune functions, including mucociliary transport, lactoferrin, lysozyme, complement, epithelial cells, neutrophils, eosinophils, and alveolar macrophages. Each of the subsequent chapters in