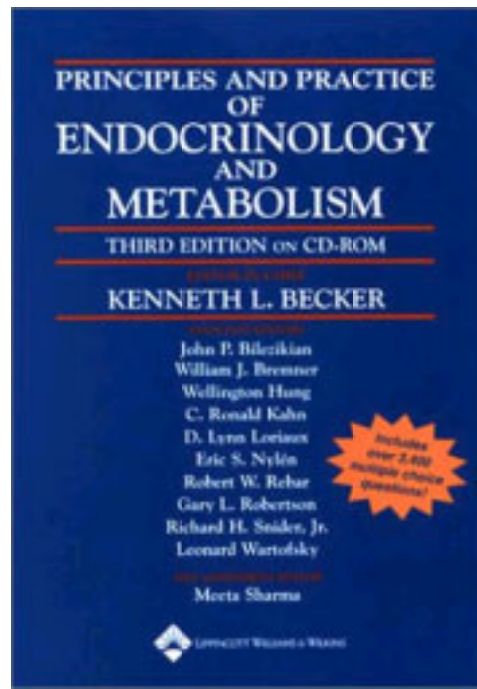


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# Principles and Practice of Endocrinology and Metabolism

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## PREFACE

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This third edition of *Principles and Practice of Endocrinology and Metabolism* has been substantially and systematically revised. All of the chapters have been updated, many have been entirely rewritten, and many deal with completely new topics. Furthermore, additional important information and references have been added up until the very date of printing.

The new chapters covering topics that did not appear in depth in the prior edition include: Molecular Biology: Present and Future; Pituitary Tumors: Overview of Therapeutic Options; The Incidental Adrenal Mass; Appetite; Pancreas and Islet Transplantation; Syndrome X; Endocrine Effects on Lipids; Compendium of Growth Factors and Cytokines; The Endocrine Blood Cells; The Endocrine Adipocyte; and Endocrine Disorders in Human Immunodeficiency Virus Infection.

We would like to welcome the authors of these chapters, and also the new authors who have updated, extensively revised, or have entirely rewritten chapters on topics that appeared in the last edition.

A new section has been added to this textbook: Endocrinology of Critical Illness. The six chapters comprising this section address the multiple aspects of this condition in a manner that is unique. Critical illness, which to some extent afflicts the great bulk of humankind at some time in their lives, has enormous hormonal and metabolic dimensions that relate directly to the diagnosis of the illness, influence the response of the host and the consequent evolution of the condition, and play a role in its outcome. The specific chapters include Critical Illness and Systemic Inflammation, Endocrine Markers and Mediators in Critical Illness, The Hypothalamic–Pituitary–Adrenal Axis in Stress and Critical Illness, Neuroendocrine Response to Acute versus Prolonged Critical Illness, Fuel Metabolism and Nutrient Delivery in Critical Illness, and Endocrine Therapeutics in Critical Illness. These subjects are of great importance to every endocrine clinician as well as many who are involved in fundamental endocrine research.

Overall, the goal of this textbook is to continue to provide, in a readable, understandable, and well-illustrated format, the clinical and basic information on endocrinology and metabolism that will be useful to both clinicians and basic scientists. We also wish this book to be a useful source of information for internists, house staff, and medical students. We have attempted to cover the field thoroughly and broadly, to include most of the known endocrine and metabolic disorders and hormonal messenger molecules, to furnish appropriate and current references, and to be of practical benefit to our readers.

A complete CD version of this entire textbook is available. It contains approximately 4000 self-assessment questions that have been assembled and edited by Dr. Meeta Sharma.

I wish to acknowledge the very helpful library assistance of Joanne Bennett. I am very grateful for the indispensable editorial and pharmaceutical aid of my Editorial Assistant, Roberta L. Brown, Pharm. D.

Kenneth L. Becker, MD, PhD

## PREFACE TO THE FIRST EDITION

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Although there are several excellent large textbooks of endocrinology, we have felt the need for a book which would aim at encompassing all aspects of the field, a book which would be disease-oriented, would have practical applicability to the care of the adult and pediatric patient, and could be consulted to obtain a broad range of pathophysiologic, diagnostic, and therapeutic information.

To fulfill this goal we called upon not only eminent specialists in endocrinology but also upon experts in many fields of medicine and science. The first part of the book surveys general aspects of endocrinology. The eight succeeding parts deal with specific fields of endocrinology: The Endocrine Brain and Pituitary Gland, The Thyroid Gland, Calcium and Bone Metabolism, The Adrenal Glands, Sex Determination and Development, Endocrinology of the Female, Endocrinology of the Male, and Disorders of Fuel Metabolism. Each of these parts contains relevant anatomic, physiologic, diagnostic, and therapeutic information and, when indicated, pediatric coverage of the topic.

Diffuse Hormonal Secretion expounds upon the fact that endocrine function is not confined to anatomically discrete endocrine glands but is also intrinsic to all tissues and organs. This part is divided in two; it first presents a discussion of hormones which have a diffuse distribution and are not reviewed elsewhere in the book, and subsequently it deals with body constituents which are important sites of hormonal secretion.

Heritable Abnormalities of Endocrinology and Metabolism underlines the importance of genetics in the causation of many endocrine and metabolic abnormalities. Endocrine and metabolic dysfunction in the young and in the aged is the subject of a separate part, because in both of these age groups hormonal function as well as endocrine disorders differ profoundly from those of individuals in their middle decades.

Interrelationships Between Hormones and the Body discusses the impact of hormones on the soma and addresses clinical aspects of the disorders they may engender. Hormones and Cancer examines the phenomenon of hormone-induced neoplasms, elaborating on the fact that all neoplasms secrete hormones, that several of these hormones can cause additional clinical disorders, and that some neoplasms respond therapeutically to hormonal manipulation.

The ensuing part, entitled Endocrine and Metabolic Effects of Toxic Agents deals with the sometimes subtle, sometimes profound influence of four nearly omnipresent agents: medication, alcohol, tobacco, and cannabis; it also addresses the consequences of environmental toxins on the endocrine system. The last part deals with the therapeutic use of drugs in endocrinology and the proper interpretation of laboratory values. It offers an extensive table on the clinical use of endocrine-related drugs, a table on reference values, and an outline of the dynamic procedures used in endocrinology. The goal of these tabular chapters is to facilitate the day-to-day evaluation and therapy of the endocrine patient.

As a rule, the emphasis of this textbook is on the endocrinology of the human being. Animal data are presented only when contributing to a better understanding of human physiology and pathology. To maximize current relevance, historical information is kept to a minimum. While efforts were made to avoid repetition, the coverage of certain topics may recur when viewed from different standpoints. It is hoped that this will provide a wider dimension of the understanding of endocrine and metabolic function and dysfunction.

In order not to interrupt continuity, bibliographic references are grouped at the end of each part. Finally, with the interest of the reader in mind, particular attention was given to composing an index as detailed as possible.

I wish to thank the associate editors of this text for their skill, their enthusiasm, and their hard work. We all are very grateful for the expertise of our many eminent contributors. During the preparation of the manuscripts, there was considerable inter-communication between these contributors and their respective editors concerning both content and presentation.

I wish to acknowledge the participation of Richard H. Snider, PhD, and Eric S. Nylén, MD, who have provided outstanding editorial assistance throughout the preparation of the textbook.

The field of endocrinology and metabolism is evolving rapidly. New data are being developed continuously, and with this in mind, all contributors were encouraged to add up-to-date information until nearly the date of publication.

There are numerous matters upon which there is no current common agreement, and logical arguments can be marshaled to buttress diametrically different viewpoints. This textbook is written by many authors; though most of the beliefs and conclusions of the contributors tend to reflect those of the editors, no attempt was made to impose a uniformity of pathophysiologic, diagnostic, or therapeutic viewpoints, and the book does not lack for differences of opinion.

We hope that the *Principles and Practice of Endocrinology and Metabolism* will be a relevant sourcebook for those interested in the science and the practice of this fascinating discipline, whether they be clinicians, basic scientists, allied health personnel, or students.

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