
Principles of Diabetes Mellitus

Leonid Poretsky
Editor

Principles of Diabetes Mellitus

Third Edition

With 197 Figures and 130 Tables

 Springer

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Preface

Welcome to the third edition of the *Principles of Diabetes Mellitus*! Fifteen years elapsed since the first edition was published and 7 years since the second edition appeared.

The epidemic of diabetes continues to march throughout the world, and the cure continues to elude us. Some hopeful developments, however, should be noted. Recent Centers for Disease Control and Prevention data indicate that prevalence of obesity, a major driver of the epidemic of type 2 diabetes, is leveling off, at least in the United States [1]. One hopes that this development, if confirmed, will have a positive impact on the prevalence of diabetes in this country. Many new therapeutic modalities have been introduced and the rates of complications of diabetes, including cardiovascular events, have declined in some instances by close to 70% [2]. It is my hope that this volume, by summarizing and popularizing the knowledge of many outstanding experts, will contribute to the future advances.

The third edition of *Principles of Diabetes Mellitus*, in addition to updating all chapters from the second edition, contains four new chapters. These address the potential role of vitamin D in the pathogenesis of diabetes; peculiarities of diabetes in the elderly; oral manifestations of diabetes; and the current state of bariatric surgery. (These chapters bring the total number of additional chapters published since the first edition to ten.)

The third edition will be available in both an online format and as a printed volume and will be “updatable” as new information develops. Online knowledge is now, of course, the main source of information for everyone. There were over 100,000 downloads of material from the second edition of *Principles of Diabetes Mellitus*. We look forward to this number becoming even higher as the third edition becomes fully electronic.

I thank all the 165 authors for their excellent contributions. I also thank Lina Spiniello, Pamela Flores, and Marilyn Jefferson for their invaluable help in keeping me in touch with both the authors and publishers. I thank Annalea Manalili, Sonja Peterson, and Kristopher Spring of Springer Nature for their patience and nurturing approach to the authors and the editor.

I hope that *Principles of Diabetes Mellitus, Third Edition*, will play its role in helping us get to the final goal – the cure.

New York
2017

Leonid Poretzky

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Preface to the Second Edition

Seven years have elapsed since the first edition of the *Principles of Diabetes Mellitus* appeared. It is sobering to realize how much new important information on the subject of this textbook has been developed during this relatively short period of time. Hence, the second edition.

Every chapter has been updated in terms of both material it covers as well as the references and the websites where additional useful information can be found. Several new chapters have been added. These chapters cover such topics as the role of the brain in glucose metabolism, the role of incretins in the pathogenesis and therapy of diabetes, the relationship between diabetes and cancer and between diabetes and human immunodeficiency virus infection, diabetes among minorities, and hospital management of diabetes. Many authors who contributed to the first edition worked on the second edition as well, but many new writers joined the “crew.” We thank *all* of the authors of the first edition for their role in preparing this textbook.

The goals of this text are outlined in the preface to the first edition, which follows. We hope that our readers will continue to find *Principles of Diabetes Mellitus* both useful and enjoyable.

New York
2009

Leonid Poretsky

Preface to the First Edition

Diabetes mellitus is a very common disease. Described initially in the Egyptian papyrus *Ebers* in 1500 BC and now affecting approximately 150,000,000 people worldwide, with its prevalence rising rapidly, diabetes continues to mystify and fascinate both practitioners and investigators by its elusive causes and multitude of manifestations.

A neurosurgeon operating on a patient with a life-threatening brain tumor, an obstetrician delivering a baby, a psychiatrist trying to penetrate deep into a patient's emotional life – all will encounter diabetes from their very early days of medical practice. This disease will significantly affect the choice of therapeutic approaches throughout their careers, regardless of their specialty. Hence, there is need for every student of medicine, whatever his or her ultimate career goals, to understand and learn to manage diabetes.

Many excellent diabetes textbooks exist. Most of them, however, are written for endocrinologists. This textbook is written not only for endocrinologists, but also for other specialists, primary care physicians, housestaff, and particularly for medical students.

The needs of the latter group are well understood by the authors of this text, most of whom have been medical students and all of whom continue to teach medical students on a regular basis. The main challenge for a medical student is to “digest” a large amount of complicated, rapidly changing information under heavy time pressure. Therefore, a book written for medical students must be up-to-date and cover all aspects of the disease, from its pathogenesis on the molecular and cellular levels to its most modern therapy. Such textbook must also be concise, clear, and easy to use. To achieve these goals, we have made liberal use of illustrations and tables, provided a summary after each chapter, and added website addresses where additional information can be found to the lists of references. Each chapter is written to stand on its own, and readers who wish to explore a particular subject should not have to search through many chapters. This may have resulted in redundancies noticeable to readers of the entire text, but the pages where the most detailed discussion of a given topic can be found are highlighted in the index in bold print.

We hope that these features will make *Principles of Diabetes Mellitus* user-friendly. We also hope that readers will find this volume useful for studies of diabetes throughout their professional lives: first in medical school, then during the years of residency, and, finally, as they enter their chosen specialty.

The authors would like to dedicate this book to those from whom we learned and continue to learn about diabetes: our teachers, who inspired us to undertake studies of the challenging diabetes problems and then supported us throughout these studies; our students, who lead us to ponder new questions; and finally, our patients, who live with the disease every moment of every day and in some ways know more about it than we do.

We thank Jill Gregory for her expert help with illustrations and Anthony J. DiCarlo for help with computer programming. We also gratefully acknowledge the efforts of Marilyn Small Jefferson, who helped coordinate the work of 61 writers, and without whose patience, diligence, and dedication this book would not have been possible.

New York
2002

Leonid Poretsky

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Dr. Poretsky is board certified in internal medicine and in endocrinology. His research interests include mechanisms of insulin action in the ovary, endocrinological aspects of AIDS, and clinical outcomes in diabetes. He has authored over 100 publications and has served on the National Institutes of Health's review committees and on the editorial boards of the *Journal of Clinical Endocrinology and Metabolism* and other endocrine journals. He also edited *Diabetes Mellitus: A Concise Clinical Guide*, which covers the basics of diagnosis, complications, therapies, and prevention of diabetes. In addition, he is the editor of the series *Contemporary Endocrinology* by Springer, Inc.

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