

The Kidney
and Body Fluids in
Health and Disease

Edited by
SAULO KLAHR, M.D.

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*Washington University School of Medicine
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Preface

This volume was designed as a text for medical students, house officers, and even clinicians. It deals with the most common problems in nephrology, providing new insight into how to improve clinical skills. A comprehensive overview of renal physiology and electrolyte disorders lays the groundwork for a clear presentation of the pathophysiological principles that underlie these disorders and a step-by-step presentation of the mechanisms behind the signs and symptoms of kidney failure.

The origins of this book can be traced to the teaching of a Renal Pathophysiology course at the Washington University School of Medicine, beginning in the mid-1960s. When changes in the medical school curriculum took place in the early 1970s, an effort was made to synthesize the minimum core curriculum for sophomore medical students, and the distillation of "essential material" to be covered in the area of renal pathophysiology led to the development of the first edition of a renal syllabus. This syllabus has been used in our department since 1974, and, following some of the recommendations and critiques of students and faculty, it has been entirely reworked many times to improve its effectiveness and value.

This book is a direct extension of that syllabus, integrated with contributions from faculty members in our Renal Division, and expanded to include a section on therapy in most chapters. It is our hope that this format will serve the needs of not only sophomore and senior medical students, but also house officers, nephrology fellows, and clinicians.

The book is divided into seven sections. Section I describes the basic concepts of fluid, electrolyte, and renal physiology and comprises three chapters entitled "Introduction to the Physiology of Body Fluids," "Homeostatic and Excretory Functions of the Kidney," and "Nonexcretory Functions of the Kidney." The second section discusses the pathophysiology of fluid and electrolyte disorders, including the regulation of volume, sodium metabolism, the development of edema and edema-forming states, the pathophysiological basis for alterations in water balance, the pathophysiology of potassium metabolism, the pathophysiology of acid-base metabolism, and

the pathophysiology of calcium, magnesium, and phosphorus metabolism. Section III comprises a single chapter devoted to the pathophysiology of hypertension. Section IV, "Pathophysiology of Proteinuric Renal Disease," is divided into two chapters, "Proteinuria and the Nephrotic Syndrome" and "Pathology and Pathophysiology of Proteinuric Glomerular Disease." Section V, "Renal Failure," contains chapters on the pathophysiology of acute renal failure, the pathophysiology of chronic renal failure, and the pathophysiological principles underlying the treatment of patients with renal failure. Section VI contains a single chapter, "Pathophysiology of Nephrolithiasis," and Section VII discusses renal pharmacology.

Every attempt has been made to make the chapters uniform. No attempt has been made to be comprehensive and exhaustive, but we believe that most of the fundamental developments in each field have been included. All the authors of this book are or have been affiliated with the Washington University School of Medicine; most of them have been long-standing members of the Division of Pediatric or Renal Medicine at Washington University, a fact that greatly facilitated the writing and editing of this book. We hope that our readers will find this volume useful, and look forward to their constructive criticism for use in future editions.

Saulo Klahr, M.D.

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