

# CONTENTS

---

<b>List of Contributors</b>	ix	12. Physiology of phosphorus metabolism <i>David B. N. Lee and Kiyoshi Kurakawa</i>	<b>245</b>
<b>Preface</b>	xiii	13. Magnesium metabolism <i>Gary A. Quamme and John H. Dirks</i>	<b>297</b>
 <b>PART ONE</b> <b>PHYSIOLOGIC BASIS OF WATER AND ELECTROLYTE METABOLISM</b>			
<b>Section 1</b>			
Dynamics of body water and electrolyte distribution and transport			
1. Compartmentation of body water <i>Darrell D. Fanestil</i>	1	14. Adrenal hormones <i>Christine P. Bastl and Anthony Sebastian</i>	<b>317</b>
2. Principles of epithelial transport <i>Ernest Wright and Gerri Schulman</i>	15	15. Renal prostaglandins and kinins <i>Thomas R. Beck, David J. Levinson, and Barry M. Brenner</i>	<b>343</b>
<b>Section 2</b>			
Normal water and electrolyte metabolism			
3. Sodium metabolism <i>H. John Reineck and Jay H. Stein</i>	33	16. The renin-angiotensin system <i>Norman K. Hollenberg and Victor J. Dzau</i>	<b>371</b>
<b>Water metabolism</b>		17. Transport of water and electrolytes in the gastrointestinal tract: physiological mechanisms, regulation, and methods for study <i>Kiertisin Dharmasathaphorn</i>	<b>385</b>
✓ 4. Osmotic and nonosmotic regulation of thirst and vasopressin secretion <i>Robert L. Zerbe and Gary L. Robertson</i>	79		
✓ 5. The physiology of the renal concentrating and diluting mechanisms <i>Isaac Teitelbaum, Tomas Berl, and Charles R. Kleeman</i>	105		
<b>Potassium metabolism</b>			
6. Regulation of extrarenal potassium metabolism <i>Edward A. Alexander and Ronald D. Perrone</i>	119	✓ 18. Pathophysiology of the edema-forming states <i>Murray Epstein and Guido O. Perez</i>	<b>409</b>
7. Regulation of renal potassium metabolism <i>Michael J. Field, Robert W. Berliner, and Gerhard H. Giebisch</i>	147	✓ 19. Treatment of edema states <i>Arnold M. Chonko and Jared J. Grantham</i>	<b>429</b>
<b>Acid-base metabolism</b>		✓ 20. Hyponatremic states <i>Noreen F. Rossi and Robert W. Schrier</i>	<b>461</b>
8. Control of ventilation: central chemical drive <i>Homayoun Kazemi and Bernard Hitzig</i>	159	✓ 21. Hyperosmolal states <i>Gail Morrison and Irwin Singer</i>	<b>481</b>
9. Acid production <i>Jack G. Kleinman and Jacob Lemann, Jr.</i>		<b>Disorders of potassium concentration</b>	
✓ 10. Renal regulation of acid-base metabolism <i>Robert J. Alpern and Floyd C. Rector, Jr.</i>	175	22. Hypokalemic states <i>Kent H. Raymond and Robert T. Kunau, Jr.</i>	<b>519</b>
<b>Divalent ion metabolism</b>		23. Hyperkalemic states <i>Ralph A. DeFronzo</i>	<b>547</b>
11. Calcium metabolism <i>Stephen J. Marx and James E. Bourdeau</i>	207	<b>Acid-base disorders</b>	
		24. Introductory concepts <i>Robert G. Narins</i>	<b>585</b>
		25. The metabolic acidoses <i>Robert G. Narins, G. Gopal Krishna, Lawrence Bressler, Mary C. Stom, David Goodkin, Robert Shay, and Raymond Townsend</i>	<b>597</b>

26. Diabetic ketoacidosis <i>Robert G. Narins, Nelson P. Kopyt, and Charles R. Kleeman</i>	643	The surgical patient: associated fluid and electrolyte disturbances	897
27. Renal tubular acidosis <i>M. L. Halperin, M. B. Goldstein, B. J. Stinebaugh and R. M. A. Richardson</i>	675	37. Preoperative fluid management of the surgical patient <i>Myra Altman and Wadi N. Suki</i>	917
28. Metabolic alkalosis <i>Neil Kurtzman and Sandra Sabatini</i>	691	38. Routine perioperative fluid and electrolyte management <i>G. Tom Shires and G. Tom Shires III</i>	917
29. Respiratory acidosis and alkalosis <i>F. John Gennari</i>	713	39. Total parenteral nutrition	927
30. Mixed acid-base disorders <i>Michael Emmett and Robert G. Narins</i>	743	40. Indications for and uses of total parenteral nutrition <i>Josef E. Fischer and Marie Bernard</i>	945
<b>Disorders of divalent ion metabolism</b>		41. Fluid and electrolyte disorders in total parenteral nutrition <i>Donald W. Inadomi and Joel D. Kopple</i>	945
31. Disorders of calcium metabolism <i>Julio E. Benabe and Manuel Martínez-Maldonado</i>	759	<b>Renal failure: fluid and electrolyte complications</b>	
32. Hypophosphatemia and hyperphosphatemia: clinical and pathophysiologic aspects <i>Nachman Brautbar and Charles R. Kleeman</i>	789	41. Acute renal failure: fluid-electrolyte and acid-base complications <i>Stanley S. Franklin and Keith L. Klein</i>	967
33. Disorders of magnesium metabolism <i>Nachman Brautbar and Shaul G. Massry</i>	831	42. Renal osteodystrophy <i>J. W. Coburn and Francisco Llach</i>	985
<b>Section 2</b>		43. Fluid-electrolyte complications of dialysis <i>Michael R. Rudnick, Raphael M. Cohen, Arthur Gordon, and Morton H. Maxwell</i>	1053
<b>Medical and surgical conditions associated with fluid and electrolyte disorders</b>		<b>Hypertension: associated fluid and electrolyte disturbances</b>	
34. Fluid and electrolyte metabolism during pregnancy <i>Mark S. Paller and Thomas F. Ferris</i>	851	44. Altered sodium and potassium metabolism in the pathogenesis of hypertension <i>Morton H. Maxwell, Abraham U. Waks, and Michael L. Tuck</i>	1105
35. Small and large intestinal disorders: associated fluid and electrolyte complications <i>Sidney F. Phillips</i>	865	45. Hypertensive states: associated fluid and electrolyte disturbances <i>Gordon H. Williams and Robert G. Dluhy</i>	1123
36. Electrolyte, water, mineral, and acid-base disorders in liver disease <i>Mark A. Dillingham and Robert J. Anderson</i>	879	46. Metabolic encephalopathy associated with water, electrolyte, and acid-base disorders <i>Cosmo L. Fraser and Allen I. Arieff</i>	1153
		47. Disorders of heat regulation <i>James P. Knochel and Gary Reed</i>	1197
		<b>Index</b>	1233