

[TABLE OF CONTENTS]

Why and How to Read This Book	13
Positivist Philosophy and Theoretical Acid-Base Physiology	15
[Preface to the First Edition]	19
[Foreword]	21
In Memory of Peter A Stewart	25

[Part I]

“How to Understand Acid-Base, a Quantitative Acid-Base Primer for Biology and Medicine”; Stewart’s Classic Text

[Introduction]	29
1. Body Fluids	31
2. Goals, Definitions and Basic Principles	35
3. The Simplest Acid-Base System: Pure Water	45
4. Strong Ions and the Strong Ion Difference	55
5. Weak Electrolytes and Buffers	71
6. Strong Ions plus Carbon Dioxide	111
7. Strong Ions plus Carbon Dioxide plus Weak Acid	133
8. Interactions between Body Fluids	167
9. Whole-body Acid-Base Balance	181

[Part II]

Quantitative Acid-Base Chemistry and Physiology

10. Normal [SID]	201
11. Role of Non-Volatile Weak Acids (Albumin, Phosphate and Citrate)	217
12. Advances in Estimating $[A_{TOT}]$ and K_A	233
13. Intracellular $[H^+]$	247
14. Base Excess	267
15. Buffers	281
16. Pregnancy	293
17. Comparative Animal Physiology and Adaptation	305

[Part III]

Clinical Applications of Quantitative Acid-Base Medicine

18. Unmeasured Ions and the Strong Ion Gap	323
19. Using the Stewart Model at the Bedside	339
20. Fluid Resuscitation	351
21. Hyperchloremia	365
22. Lactic Acidosis	375
23. Renal Failure	393
24. Renal Tubular Acidosis	407
25. The Liver and the Gut	423
26. Sepsis	431
27. Trauma	443
28. The Emergency Department	453
29. The Perioperative Period	463
30. Pediatrics	479
[Afterword]	499
[Index]	503