Contents

	List of figures List of tables	vii x
1	Introduction	1
2	Macronutrients: carbohydrates	21
3	Macronutrients: lipids	46
4	Macronutrients: proteins	63
5	Micronutrients: vitamins	77
6	Micronutrients: minerals and water	105
7	Digestion and absorption	132
8	Energy and energy-yielding metabolic pathways	162
9	Nutrients metabolism	190
10	Guidelines for designing a healthy and competitive diet	212
11	Ergogenic aids and supplements	245
12	Nutrition and metabolism in special cases	279
13	Measurement of energy consumption and output	314
14	Body weight and composition for health and performance	341
15	Energy balance and weight control	373
16	Thermoregulation and fluid balance	408
Appendix A: metric units, English–metric conversions, and cooking measurement equivalents Appendix B: chemical structure of amino acids		433 435
	pendix C: dietary reference intakes for energy, macronutrients, and micronutrients	436

vi Contents	
Appendix D: estimated energy requirement calculations and physical activity values	442
Appendix E: daily values used in food labels with a comparison to RDAs	444
Appendix F: world anti-doping code international standard prohibited list	445
Appendix G: directions for conducting three-day dietary analysis	454
Bibliography	458
Index	492