

Contents

1	An Introduction to Fasting, Starvation, and Food Limitation	1
	Marshall D. McCue	
2	A History of Modern Research into Fasting, Starvation, and Inanition	7
	Jean-Hervé Lignot and Yvon LeMaho	
3	Starvation in Rotifers: Physiology in an Ecological Context	25
	Kevin L. Kirk	
4	<i>Drosophila</i> as a Model for Starvation: Evolution, Physiology, and Genetics	37
	Allen G. Gibbs and Lauren A. Reynolds	
5	Metabolic Transitions During Feast and Famine in Spiders	53
	Johannes Overgaard and Tobias Wang	
6	Adaptation of the Physiological, Endocrine, and Digestive System Functions to Prolonged Food Deprivation in Fish	69
	Nadav Bar and Helene Volkoff	
7	Starvation in Subterranean Species Versus Surface-Dwelling Species: Crustaceans, Fish, and Salamanders	91
	Frédéric Hervant	
8	Physiological Responses to Starvation in Snakes: Low Energy Specialists	103
	Marshall D. McCue, Harvey B. Lillywhite and Steven J. Beaupre	

9	Cardiovascular Circuits and Digestive Function of Intermittent-Feeding Sauropsids	133
	Rike Campen and Matthias Starck	
10	Thermoregulatory Adaptations to Starvation in Birds	155
	Esa Hohtola	
11	Fasting in Birds: General Patterns and the Special Case of Endurance Flight	171
	Susanne Jenni-Eiermann and Lukas Jenni	
12	Tissue-Specific Mass Changes During Fasting: The Protein Turnover Hypothesis	193
	Ulf Bauchinger and Scott R. McWilliams	
13	Seasonal Changes in Body Mass and Energy Balance in Wild Small Mammals	207
	Xueying Zhang, Xinyu Liu and Dehua Wang	
14	Changes in Form and Function of the Gastrointestinal Tract During Starvation: From Pythons to Rats	217
	Jehan-Hervé Lignot	
15	Changes in Fatty Acid Composition During Starvation in Vertebrates: Mechanisms and Questions	237
	Edwin R. Price and Teresa G. Valencak	
16	Physiological Responses to Fasting in Bats	257
	Miriam Ben-Hamo, Agustí Muñoz-Garcia and Berry Pinshow	
17	Muscle Protein and Strength Retention by Bears During Winter Fasting and Starvation	277
	Hank Harlow	
18	Seasonal Starvation in Northern White-Tailed Deer	297
	Duane E. Ullrey	
19	Fasting Physiology of the Pinnipeds: The Challenges of Fasting While Maintaining High Energy Expenditure and Nutrient Delivery for Lactation	309
	Cory D. Champagne, Daniel E. Crocker, Melinda A. Fowler and Dorian S. Houser	

20 The Use and Application of Stable Isotope Analysis to the Study of Starvation, Fasting, and Nutritional Stress in Animals	337
Kent A. Hatch	
21 Fearing the Danger Point: The Study and Treatment of Human Starvation in the United Kingdom and India, c. 1880–1974	365
Kevin Grant	
22 Quantitative Physiology of Human Starvation: Adaptations of Energy Expenditure, Macronutrient Metabolism and Body Composition	379
Kevin D. Hall	
23 Alternate Day Fasting: Effects on Body Weight and Chronic Disease Risk in Humans and Animals	395
Krista A. Varady	
24 Horizons in Starvation Research	409
Marshall D. McCue	
Index	421