## Contents

| Par | t 1 Nutritional Components  |     |
|-----|---|-----|
| 1   | <b>Dietary Proteins: Functions, Health Benefits and Healthy Aging</b> Khetan Shevkani and Shivani Chourasia | 3   |
| 2   | Carbohydrates as Nutritional Components for Health and Longevity  | 39  |
| 3   | Fats and Oils for Health and Longevity  | 53  |
| 4   | Micronutrients in Ageing and Longevity  | 63  |
| 5   | Probiotics and Prebiotics in Healthy Ageing   | 85  |
| 6   | Nutritional Hormetins in Ageing and Longevity   | 109 |
| 7   | Notes Toward an Evolutionary Biology of Nutrition   | 123 |
| Par | t II Food for Health  |     |
| 8   | Animal- and Plant-Based Food for Health and Longevity   | 155 |
| 9   | Fermented Foods in Aging and Longevity  | 179 |

viii Contents

| 10  | Milk and Other Dairy Product Trends in Health and Longevity Dino Demirovic Holmquist  | 193 |
|-----|---|-----|
| 11  | Anti-inflammatory Foods in Ageing and Longevity  Ceren Gezer  | 199 |
| 12  | Nutraceuticals and Functional Foods in Aging and Aging-Associated Diseases  Jatinder Pal Singh, Balwinder Singh, and Amritpal Kaur  | 221 |
| 13  | Food for Brain Health  Vittorio Calabrese, Angela Trovato, Maria Scuto,  Maria Laura Ontario, Francesco Rampulla, Vincenzo Zimbone, Ignazio La Mantia, Valentina Greco, Sebastiano Sciuto, Roberto Crea, Edward J. Calabrese, and Giuseppe Dionisio | 239 |
| 14  | Nutrition and Exercise to Maintain Physical Functioning   |     |
|     | During Ageing Pol Grootswagers, Marco Mensink, and Lisette de Groot   | 275 |
| Par | t III Diet and Culture  |     |
| 15  | Dietary Patterns and Healthy Ageing   | 301 |
| 16  | Ketogenic Diet, Circadian Rhythm and Aging  Anita Jagota and Sushree Abhidhatri Sharma  | 315 |
| 17  | Diet According to Traditional Chinese Medicine for Health and Longevity   | 331 |
| 18  | Indian Traditional Foods and Diets: Combining Traditional Wisdom with Modern Science of Nutraceuticals and Functional Foods  Jyoti S. Gokhale, S. S. Lele, and Laxmi Ananthanarayan   | 357 |
| 19  | Diet and Circadian Rhythms: Implications for Aging and Longevity  | 393 |
| 20  | Longevity Foods in Myth, Legend and History   | 411 |
| Par | t IV Nutritional and Dietary Interventions  |     |
| 21  | Nutritional Regulation of Aging and Longevity   | 439 |

Contents ix

| 22  | Gerosuppressive and Senolytic Nutrients   | 465 |
|-----|---|-----|
| 23  | Role of Short Peptides as an Important Nutritional Element in Maintenance of Body Homeostasis  Svetlana V. Trofimova and Vladimir Kh. Khavinson                         | 491 |
| 24  | Fasting and Caloric Restriction for Healthy Aging and Longevity   | 507 |
| 25  | Calorie Restriction Mimetics and Adult Stem Cells  Bauyrzhan Umbayev, Yuliya Safarova, Aislu Yermekova, and Timur Saliev  | 525 |
| 26  | <b>Healthy Nutrition for Older People</b>   | 549 |
| 27  | Nutritional Regulation of Metabesity  Ebenezer I. O. Ajayi, Olorunfemi R. Molehin, Stephen A. Adefegha, Aderonke E. Fakayode, Johnson O. Oladele, and Olawumi A. Samuel | 567 |
| 28  | Why Ashwagandha for Healthy Ageing? Evidence from Cultured Human Cells  | 589 |
| 29  | The Fact and Fiction of Nutritional Claims About Health and Longevity   | 617 |
| Par | t V Conclusions and Suggestions   |     |
| 30  | Nutrition, Food and Diet: Recapitulation, Conclusions and Suggestions.  Suresh I. S. Rattan and Gurcharan Kaur  | 633 |
| Aut | thor Index  | 641 |